

# ST. MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES

# THE EFFECT OF PROCUREMENT MANAGEMENT PRACTICE ON THE PROJECT PERFORMANCE: DAN ENERGY RESEARCH AND DEVELOPMENT PLC

# **ADDIS ABABA**

BY

GIRUM ZEGEYE

July, 2023 ADDIS ABABA, ETHIOPIA

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# DEPARTMENT OF PROJECT MANAGEMENT MBA PROGRAM

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# A RESEARCH THISIS SUBMITTED TO ST. MARRY UNIVERSITY COLLEGE SCHOOL OF GRADUATE STUDIES-MA PROGRAM IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF PROJECT MANAGEMENT

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# **BY: GIRUM ZEGEYE**

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# DECLARATION

I, Girum Zegeye hereby declare that the thesis entitled "The Effects of Procurement management Practices on the project performance: at Dan Energy Research and Development PLC." submitted by me for the award of master's Degree in project management is my original work and it has not been presented for the award of any other Degree, Diploma, Fellowship or any other similar titles of any other university or institutions.

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## ENDORSEMENT

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

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# List of Abbreviations and Acronyms

- **CIPS** Chartered Institute of Procurement and Supply
- CEO-Chief Executive Officer
- ${\bf SPSS}-{\bf Statistical\ Package\ for\ Social\ Sciences}$
- **PLC** Private Limited Company

### ABSTRACT

The aim of this study is to investigate the effect of procurement management practices on project performance at Dan Energy Research and Development PLC. The research utilized a quantitative approach with an explanatory research design, and data was collected through a structured questionnaire. The study included 40 out of 45 employees, resulting in a valid response rate of 88.9%. The questionnaire data was analyzed using Statistical Package for Social Sciences (SPSS) V.27, which computed Cronbach Alpha, descriptive statistics, and correlation & regression. The highest mean score was observed in project procurement supplier sourcing practices (3.7969), signifying its importance in achieving value for money, quality improvement, risk reduction, and on-time project completion. Correlation analysis showed positive and strong correlations between the independent variables and the dependent variable. Furthermore, regression analysis revealed that project procurement management, suppliers, and contract management significantly contribute to project performance (p-value = 0.001). Hypothesis testing confirmed that project procurement practice, conducting, and monitoring have a significant effect on project performance (p < 0.05). These findings provide valuable insights into areas of focus for improving project procurement management practices at Dan Energy. Implementing these practices effectively is recommended to enhance project performance.

**Keywords:** procurement management practices, project performance, supplier sourcing, contract management, inventory management.

# CHAPTER ONE INTRODUCTION

#### 1.1 Background to the Study

The procurement management practice plays a crucial role in the success of a project. It involves the acquisition of goods, services, and works necessary for the successful completion of a project. Effective procurement management is essential to ensure that the project is completed on time, within budget, and to the required quality standards. The relationship between procurement management practice and project performance is complex and requires a deeper understanding. This study aims to investigate the effect of procurement management practices on project performance.

Procurement management has become a critical area of concern for organizations and project managers. The success of a project is often dependent on the efficient and effective procurement of resources. However, many organizations face procurement management challenges, such as delivery delays, cost overruns, and quality issues. These challenges can have a significant impact on the overall performance of the project.

Previous research (mentioned in chapter two) has shown that procurement management practices can significantly impact project performance. The literature review suggests that there is a positive correlation between procurement management practices and project performance. However, the exact nature of this relationship is not fully understood. This study aims to contribute to the body of knowledge in this area by investigating the effect of procurement management practices on project performance in detail.

This study provides valuable insights into the impact of procurement management practices on project performance and will help organizations to improve their procurement management processes. The findings of the study be useful for project managers, procurement managers, and organizations to better understand the relationship between procurement management practices and project performance and to improve their procurement processes to achieve better project outcomes.

The concept of project implementation has various interpretations in the literature. Chan (2007) defines it as the organizational structure adopted by clients to implement project processes and

operations. The project's performance significantly depends on the procurement method used to deliver it, with different forms of project performance that exist for clients to choose from. The procurement method's complexity poses a challenge to clients in trading off various factors that underpin the selection process, making it difficult to achieve project success. Although many organizations in Ethiopia are working to improve their procurement systems, the procurement process is often plagued by secrecy, inefficiency, corruption and under-cutting. Non-compliance with procurement regulations affects not only third-world countries but also countries in the European Union. Several stalled development projects and higher than-budgeted actual procurement management exists to explore supply market opportunities and implement resourcing strategies that deliver the best possible supply outcome to the organization, its stakeholders, and customers. It applies a body of knowledge interpreted by competent practitioners and professionals.

#### **1.2 Statement of the Problem**

Government organizations strive to ensure a standardized, cost-effective, and transparent procurement process for acquiring goods and services. However, procurement practices are often fraught with issues such as lack of transparency, inefficiency, and corruption leading to poor service delivery and low consumer satisfaction. These problems are not limited to a particular region, as studies have shown it to be a global challenge (World Bank, 2019). Procurement management is a critical aspect of project implementation, particularly for governmental organizations receiving donor funding, but concerns remain that procurement management in many organizations does not meet community and donor expectations. While studies have examined the implementation of donor-funded projects, few have focused on the specific relationship between procurement management and project performance. There is a need for research that specifically examines the effect of procurement management practices on the performance of governmental organizations in project implementation, particularly in the context of donor-funded projects. The literature on procurement management practices and their impact on project performance at Dan Energy is limited. This study aims to assess procurement management practices and their impact on project performance at Dan Energy. The study will investigate how procurement management practices are executed at Dan Energy and their effect

on project performance. The study seeks to contribute to the emerging literature by using Dan Energy as a case study to assess procurement management practices and their impact on project performance.

## **1.3 Research Objectives**

#### **1.3.1** General Objective

The general objective of this study is to assess the effect of procurement management practice on project performance at Dan Energy research and development PLC.

#### **1.3.2** Specific Objectives

The specific objectives of the study are

- > To examine the effect of contract management on project performance at Dan Energy.
- > To determine the effect of need assessment on project performance at Dan Energy.
- > To examine the effect of inventory management on project performance at Dan Energy.
- To determine the effect of the supplier sourcing process on project performance at Dan Energy.

#### **1.4 Research Questions**

- 1. To what extent does contract management affect project performance at Dan Energy?
- 2. What are the effects of need assessment on project performance at Dan Energy?
- 3. Do what extent does inventory management affect project performance at Dan Energy?
- 4. What are the effects of suppliers' sourcing on procurement performance at Dan Energy?

#### **1.5 Research Hypotheses**

H1: Contract management level involvement does a significant effect on Project Performance at Dan Energy.

H2: Need Assessment does a significant effect on Project Performance at Dan Energy.

H3: Inventory management does a significant effect on Project Performance at Dan Energy.

H4: Supplier Management does a significant effect on Project Performance at Dan Energy.

#### **1.6 Significance of the Study**

Effective procurement management is essential to project success. Therefore, this study aims to determine whether Dan Energy managers effectively implement procurement management in projects. Specifically, this research will provide useful insights to managers on how to improve procurement management practices, resulting in the proper utilization of facilities. Additionally, policymakers and planners will gain a deeper understanding of the impact of procurement management on project performance, enabling them to adjust policies accordingly. This study will also inspire other researchers to explore the topic further, and will serve as a reference for academicians.

#### **1.7 Scope of the Study**

This study was limited to the effect of Project Procurement management Practice (project procurement management, project procurement supplies sourcing, project procurement contract process and project procurement inventorying practice) on overall project performance regarding to Dan Energy. Due to the nature of Project procurement practices, to see the effect of overall project procurement management practice to improve project performance.

#### 1.8 Organization of the Study

This study is structured into five chapters. The first chapter introduces the research including the background, problem statement, research objectives, significance of the study, and scope. Chapter two offers a review of relevant literature on procurement management, discussing differences and similarities among different writers and presenting various arguments on the topic. The third chapter describes the research methodology, including the study area, research design, data sources, target populations, data collection instruments, data collection procedures, methods of data analysis, and validity and reliability of the instrument. Chapter four presents the results and discussion, where data collected and analyzed using data analysis tools are discussed. The final chapter offers a summary, conclusion, and recommendations based on the findings of the study.

# CHAPTER TWO REVIEW OF RELATED LITERATURE

This chapter reviews relevant literature on the topic of procurement management and its impact on project performance. It surveys the works of various scholars and authors who have discussed the concept of procurement functions, including need assessment, supplier sourcing, contract management, and inventory management. Additionally, the chapter presents a theoretical overview of procurement functions in organizations and their effects on project performance.

#### **2.1 Theoretical Review**

The world today of donor funding is complex in nature and is being noticed in the academic Researches and scholars' debates. It is common for scholars to focus on certain perspectives of Aid and policy framework instead of developing consistent foreign and aid theories (Van der Veen, 2011). This section deals with 4 theories, agency theory, stewardship theory, resource Dependency theory and stake holders' theory.

#### 2.1.1 Agency Theory

The agency theory embraces facts that the parties involved in project development varying interests in approaching tendering process and valuation process. Relationship that exists within Parties may be referred to as agency. Parties have an agency relationship when they cooperate and engage in an association that allows one part (the principle), delegates decisions and work to work to/or another (an agent) to act on its behalf (Tenhiälä, Rungtusanatham and Miller, 2017).

The baseline underlying agency theory is that potential goal conflicts exist between principals and agents; each party acts in its own self-interest; there are frequent similarities between principals and agents; agents are more risk averse than the principal; and efficiency is the effectiveness criterion. Two potential problems stemming from these assumptions may arise in agency relationships: an agency problem and a risk-sharing problem (Xingxing 2012). There are Agency problems when agents' goals differ from the principals' and it is difficult or expensive to verify whether agents have appropriately performed the delegated work, or rather moral hazard. The ethical and moral issues that arise from the manner donor underline the manner in which a project should be implemented.

This problem also arises when it becomes difficult or expensive to verify that agents have the expertise to perform the delegated work (i.e. adverse selection) that they claim to have. A risk-sharing problem arises when principals and agents have different attitudes towards risk that cause disagreements about actions to be taken (Xingxing 2012).

According to the theory, party (the principle) contracts another (the agent) to perform some services on their behalf. The principle passes on decision making authority to the agent. The difference between buyers and suppliers will result in the two parties concerning themselves only with their self-interests (Xingxing 2012).

Agency theory determines how procurement managers execute procurement practices on behalf of donor funding agencies. Existence of poor principle agent relationship leads to low level of top management commitment and this also affects the relationship between institutions and the suppliers. Existence of conflict of interest amongst the agents leads to execution of procurement practices against the standard policies which leads to waste of time in tendering and cancelling of tender advertised and loss of procurement funds.

The public procurement Act requires all stakeholders to assess the processes involved in the Procurement and to know the efficiency and reliability in the procurement processes. Importantly is to recognize the flaws and challenges inherent in the system of procurement in order to correct them. These can be achieved through a formal procurement audit, among others. The agency theory model anchored on the fact that information asymmetries and pursuant of self-interests, principles lack basis to trust their appointed agents and will seek to mitigate these concerns by putting in place mechanisms to align interests of agents with principle and to reduce the scope for information asymmetries and opportunistic tendencies (Keng'ara, 2013). The study, thus Used this model to determine the effect of procurement management on effective project performance in Dan Energy.

#### 2.1.2 Stewardship Theory

This theory was developed by Donaldson and Davis in 1991 and 1993 respectively. The ideal Motive which directs managers to accomplish their job is the desire to perform excellently. This theory assumes that managers are stewards whose behaviors are aligned to the objectives of the principals. It implies that managers have an intrinsic satisfaction when firm performance improves

and organization success is attained. The theory implies that Managers are also motivated by nonfinancial factors like challenging work, the opportunity to Exercise responsibility and authority as well as gaining recognition from peers and their managers.

It is critical for the organization to build a structure which allows for symphony between principles agents. Turning to the firm's leadership, the structure which allows for symphony between principles is where there is CEO duality. In such a scenario, the powers of the chairman of the board (responsible for board processes) and CEO (responsible for operational issues of the organization) are vested in one office. Donaldson and Davis indicated that such a structure allows an ambiguity in the CEO role as power and authority over lower ranking managers and other board members is then vested in one office.

The process of amalgamating the role of CEO and the board chairman drives down the cost of agency while enhancing performance (Abdula and Valentine ,2009). Apart from supporting CEO duality, proponents of stakeholder's theory favor majority of insiders' directors and argue that they have superior knowledge of procurement functions in an organization thus take a shorter time to make decisions; they are more effective at evaluating the performance of top managers and utilize their expertise to ensure high quality procurement performance at all levels. According to (Letting et al. 2012), the inclusion of more executive directors in the boards of companies would lead to more effective and efficient decision which include supplier sourcing. Procurement functions can enjoy the consistency in leadership style, unity of direction as well as Command.

#### 2.1.3 Resource Dependence Theory

In resource dependency theory nations that are developed actively keep developing nations in alert position, often through economic force by instituting sanctions in a subservient position, often through proscribing free trade policies attached to loans granted by World Bank or by International Monetary Fund. The theory of dependency goes way back in 1949 where it was observed that the terms of trade for underdeveloped countries relative to the developed countries had deter rioted over time. The underdeveloped countries were able to purchase fewer and less manufactured goods from the developed countries in exchange for a given quantity of their raw materials. In dependency theory, the degree of dependency increases as time goes on wealthy countries are able to use their wealth to further influence developing nations into adopting in describing poverty. Alkire and Santos (2013) indicated that the level of poverty in Sub-Sahara is an evidence of the developing needs.

The evidence provided by Chen and Ravalli (2010) in describing poverty puts the global number people living with below poverty line of \$ per day in Sub-Sahara Africa at 298 million up from 168 million policies that increase the wealth of the wealthy nations, even at their own expense. Similarly, they are able to protect themselves from being turned on by the developing nations, making their system more secure as time goes on.

#### 2.1.4 Stakeholder Theory

The success of a firm is a complete function of successful management of the various relationships that a firm has with stakeholders considering that less can be achieved without Stakeholders, and the organization would cease to exist is that which is enriched in stakeholders' Theory. The year 2004 saw the revision of the Organization for Economic Cooperation and Development (OECD) principles which changed the principle from their narrow focus on the traditional shareholder centered corporate governance practice to a wider once which is accommodative of the various interests of different stakeholders of a firm. In their study, Grover and Malhotra (2013) extensively investigated the application of transaction cost theory in supply chain management. In their empirical study of 1000 purchasing managers, they concluded that transaction cost theory applies to organizational supply chain management in four facets: effort, monitoring, problem and advantage. Transaction cost theory is primarily concerned with the direct economic factors in organizations and hence fails to address some important aspects of the operation of organizational supply chain, including personal and human relations among other actors in the supply chain.

#### 2.1.5 Project Performance

In a large scale, organization, project managers oversee two types of groups. One of which Includes project team members permanently assigned to the project office under the project manager 's authority while the other group consists of subject matter expert from the organizational technical and support department.

Project managers' responsibility include meeting project objectives for schedules, budgets and assessing alternatives, assessing risks, and deciding how to accept, avoid, remove, or mitigate them, leading the initiative to successful completion. One of the gurus of project management

coined the term 'democracy' to describe the use of teams in organizations. The team, as the building block of the networked enterprise, displaces the traditional bureaucratic hierarchy of successive levels of pyramided authority. In a democracy, teams' formation leads to the lattice network of cross-functional/cross-organizational projects that integrate the activities of the work groups and reflect their empowerment, dedication, trust, loyalty and commitment.

#### **2.2 Empirical Review**

In this section, the researcher reviews literature related to the research problem. We have had studies carried out on procurement before the public procurement and Disposal Regulations that evaluated the efficiency of the procurement process in existence at the time. The major findings of the studies were that public procurement was not operating efficiently and that counties are losing a lot of money through shoddy deals. This section focuses on various procurement functions in organizations and their relationship with project performance and wrap up with organizations procurement performance in line with time and cost.

#### 2.2.1 Need Assessment Practice and Project Performance

A procedure is a system of sequential steps or techniques for getting a task or job done (Lyons and Farrington, 2012). They are formal arrangements by means of which policies linking strategies are implemented. They further clarify that a cluster of reliable procedures, each comprised of a number of operations that together, provide information enabling staff to execute and managers to control those operations, is called a system. Therefore, procedural procurement ensures orderliness and efficiency in any procurement department (Burt et al, 2014), further adds that, procedural procurement is vital due to considerable amounts of money spent annually in the public sector.

Procurement department should observe procedural transactions for the good of the population given the fact that expenditure incurred is the taxpayer's money. This implies that public sector purchasers are accountable to the public whose money is spent, including those who tender and potential suppliers who may be disappointed. They must produce procedures and practices which will stand up either to scrutiny during government audits or to the challenge through the courts of any purchasing decision that has been made. The chief purpose of public accountability is to prevent abuses of taxpayer's money. Planning scope refers to the period in which the budget will

cover. The planning scope will be crucial in how the budget is drawn that is if they are budgeting for long term project or short term.

It will assist in planning for activities and ascertain how next year might change and steps to be taken to respond to the changes. Purchasing budgeting procedures involves various steps before the final budget is arrived at. The process usually starts at various departments depending on the department needs for the coming financial year. The budgeting process is then developed to a mister's budget that is developed by the management. This process must be followed to make the employees own the purchasing budget allocation (CIPS, 2012).

Adell, Esquerra and Estevan (2009) indicated that needs assessment encourages innovation through procurement. They further found that need assessment provides transparency and clarity during procurement process and guarantee the product quality by the third-party certification. They further pointed out in their report that most countries which included Spain, UK, Denmark, Portugal and Sweden that participated in procurement assessment have a Green/ Sustainable Public Procurement (GPP/SPP) strategy or action plan. A Green/ Sustainable Public Procurement (GPP/SPP) strategy or action plan minimizes the Environmental impacts. However, the level of commitment varies from one organization to another. Customer request, legal requirement, market demand, and business needs are the fundamental approaches of setting project performance process. A well-defined project can reduce the risk of changes and delay during project scope definition. A scope definition can be arrived at with effective needs identification which can alleviate the risk of inadequate design that can lead to expensive changes or even project failure (Fageha and Aibinu, 2014).

#### 2.2.2 Supplier Sourcing Practice and Project Performance

The performance of the Procurement process within the public system may be a direct or an indirect yield of the processes depending on the objectives, goals, expectation and customer satisfaction (Sollishand Semanik 2007). The foremost thing for consideration during the procurement process is identifying the specific needs, how to pay for these needs and a review of the whole output. (Emmert and Crocker 2008).

Bid assessments can encompass many diverse factors, for example, cost, technical capability, Management aptitude, previous experience, the object of reference, environmental and quality Management systems, financial solidity and concerted skills (Lam et al, 2011, Eriksson and Laan, 2007; Malmberg, 2007). Other authorities have considered the procurement practices to be similar to the supply chain management practices which is the set of activities undertaken By an organization to promote effective management of its supply chain (Koh et al., 2007); as the approaches applied in integration, managing and coordination of supply, demand and relationships in order to satisfy clients in effective way (Wong et al., 2015); as tangible activities/technologies that have a relevant role in the collaboration of a focal firm with its suppliers and/or clients (Vaart and Donk, 2008); and as the approach to involve suppliers in decision making, encouraging information, sharing and looking for new ways to integrate upstream activities.

During the negotiating process, parties should think carefully about the kind of commitments they should be prepared to make. One way to build trust is to create a commitment structure that can be implemented in stages. The key to negotiating a beneficial outcome is the negotiators' ability to consider all the elements of the situation carefully and to identify and think through the options. Organizations are required to seek the best value of working relationship for short term and long operations with suppliers.

#### 2.2.3 Contract Management Practice and Project Performance

A number of Managers have considered the procurement practices to be similar to the supply Chain. Hyer (2010) explains that planning involves identifying the purpose, defining the scope Sound, determining customer requirements (user needs) and cost, assigning responsibilities and other activities According to Brown and Hyer (2010), monitoring refers to any tracking System from a simple checklist to sophisticated dashboard style approaches, for identifying Variances from the original plan. It is argued that as part of the planning process, a project team should agree on the appropriate approach for monitoring key performance indicators (KPIs) during the life of the project.

The two scholars also define project control as the set of processes, decisions, and actions involved in responding to project variances. Project control thus portends a project change management process for deciding when changes are appropriate and when to stay the course. Chandra (2008) averts that control is critical to implementation success in so far as it compels regular comparison of performance against targets, a search for the causes of deviation, a commitment to check adverse variances. Brown and Hyer (2010) have anchored their argument for monitoring and control on the fact that there are several phenomena which influence project execution and cause actual performance to depart from planned performance.

These phenomena include: Scope Creep; which describes the tendency for a project to grow beyond its initial size. It is caused by the team members' enthusiasm; unanticipated issues discovered mid-project and redefinition or clarification of customer needs. Murphy's Law; espouses the principle that anything that can go wrong may Go wrong. Pareto's law; postulates that 80% of project's problems and delays are caused by 20% of project activities. An effective project monitoring system should focus on activities that carry the highest risks for delay, cost over-runs, or performance challenges; and lastly, Escalation of Commitment principle which states that human beings tend to continue pursuing failing courses of action, even when all signals point to the fallacy of the strategy. Thus, a procurement project contract monitoring system can have a significant influence on people's decisions to escalate or de-escalate commitment. Most donors require that funding recipients evaluate contractor performance and document, as appropriate, whether contractors have met the terms, conditions and specifications of the contract.

Selecting a proficient and dependable contractor is one of the greatest problem's consumers who wish to achieve project success face (Kumaraswamy and Anvuur, 2008). Bid assessments can encompass many diverse factors, for example, cost, technical capability, management aptitude, previous experience, the object of reference, environmental and quality management systems, financial solidity and concerted skills (Lam et al., 2001, Eriksson and Laan, 2007; Malmberg, 2007).

#### 2.2.4 Inventory Management Practice and Project Performance

Inventory management is a complex decision-making process that requires analysis of multiple criteria parameters, which in practice are usually non-deterministic in nature. Decisions are made in conditions of uncertainty. The most popular classical methods for determining inventory levels include Economic Order Quantity (EOQ) model, the Re-Order Point (ROP) models and Re Order Cycle (ROC), Krzyzaniak, Cyplik, (2007). Safety stock aims to cover the unexpected changes in the demand, Grzybwska, (2010). Inventory Management (IM) is an inter-disciplinary concept (Larson and Halldorsson, 2014).

Inventory management revolves around a cross functional and across the boundaries of the firm (Ellram and Cooper, 2014). (Halldorssonet al, 2007) argues that key aspects of inventory include the design and management of the structure through inter-organizational relationships. According to the 17th Annual State of Logistics Report Wilson (2016), business logistics cost as a percentage of US gross domestic product has grown to 9.5 percent, and of the over \$1 trillion spent on logistics, approximately 33 percent is attributed to the cost of holding inventory. Thus, inventory management research is critical in procurement.

Inventory programs can make inventory commitment more efficient and improve customer service. In a recent examination of the future of the discipline of logistics and logistics research, Davis –Sramek and Fugate (2007) uncovered that leading discipline visionaries feel that one area in which logistics researchers must focus on is coordination and collaboration, and subsequently, the inventory management literature published in logistics journals has evolved in recent years in that direction. Inventory management according to Heizer and Render (2016) indicated that businesses hold these stocks for various reasons, including protection against general shortages or potential problems with suppliers, or, because unit price rises may be imminent. Nevertheless, the literature focuses upon stock replenishment policies.

Typically, the resultant inventories enable firms to perform a service economically, without the beneficiaries suffering any untoward delays. Thus, inventory planning and control bears Great significant. The order placing discipline minimizes the cost of transferring goods, besides shortening the associated lead times and that there are sufficient incentives for the parties to cooperate because the recipient pays for the upstream storage and freight in one way or another. Effective inventory management depends on understanding all the details of what is inventory management. By applying lean practices to all aspects of the inventory management cycle, businesses can reduce investment in standing inventory, plant rental, shipping costs, reverse logistics while maintaining or improving customer service levels and in-stock metrics on critical inventory (Confessore, Rismondo and Stecca, 2014).

The other sensitive area of inventory is the movement of materials as they go through the various stages of operations which is referred to as goods or work in progress inventory which involves tracking of materials as they are used to create finished goods that helps to identify the need to

adjust ordering amounts before the raw materials inventory can get dangerously low or are inflated to unfavorable level (Murphy, 2007).

#### 2.2.5 Project Performance and Measurement

Lysons and Farrington (2006) espouse the view that successful project performance is about converting a strategic plan into action and doing what needs to be done to achieve the targeted strategic goals and objectives. According to Brown and Hyer (2010), effective project implementation or success can be measured on the basis of time, cost and quality (performance), commonly known as the triple constraint. These three factors represent the Key Performance Indicators (KPIs). To establish whether a project has been effectively implemented, or better still, if the project has been successful, one has to go back to the initial project goals of time, cost and quality (performance) and be able to measure the extent of their individual achievement. This model is premised on the principle of interdependency, whereby each constraint affects the others. For example, if a project requires more time, the cost is likely to rise. Likewise, a higher performance may lead to increased project cost. There are reforms in public procurement processes geared at plunging the public procurement sectors, encouraging competition, transparency, efficiency and ensuring accountability. However, their challenges in implementing that include poor dissemination of procurement law Azeen (2003) lack of proper training for the managers of the procurement process.

#### 2.3 Research Gap

In recent years, Ethiopia has made significant strides in improving procurement procedures in organizations. Despite this progress, there are still issues with regulatory systems that are negatively impacting service delivery. While studies have been conducted on procurement practices and their benefits, it is important to note that procurement practices can vary between different sectors. This is especially true for private limited companies that prioritize both profits and services for citizens. Thus, further research is needed to examine how procurement functions impact organizational performance.

While previous literature has explored potential factors that affect procurement performance, there are still significant gaps in understanding the adoption and uptake of procurement practices.

Procurement planning is a critical function that can affect the effectiveness of service delivery in Ethiopia, yet it remains an area that has been largely neglected in research.

Procurement planning is a crucial aspect that affects the effectiveness of service delivery in local government, and Ethiopia is no exception. Despite its significance, procurement planning is often overlooked in research. To enhance the performance of governmental organizations in Ethiopia, it is essential to ensure adherence to legal requirements, conduct thorough risk assessments, and implement cost-effective procurement methods. By doing so, service delivery can be improved, and the overall effectiveness of governmental organizations can be enhanced (Selam, H., 2010)

#### 2.4 Factors Affect Project Performance

The construction industry is the tool through which a society achieves its goals of urban and rural development. It is one of the sectors that provide important ingredients for the development of an economy. The construction industry tends to fluctuate with the general economy, and it has a quick response to the changes in the economy (Abdullah, 2013). The construction industry is one of the most complex, fragmented industries referred as schedule and resource driven. In construction industry timely completion of project is a major criterion of project success (Aftab,2011). Procurement management & impacts it has on the overall success of a project. Project procurement management contains six unique processes (procurement planning, solicitation planning, proposal solicitation, source selection, contract administration & contract close out) (Flemning, 2003).

#### 2.5 Conceptual Framework

A conceptual framework is a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation. Inventory activities that include stock control and disposal process are paramount to secure project performance. The research aims to study the correlations of procurement functions on the level of performance in Dan Energy. It also aims to describe and explain the benefits that accrue.



Figure 1 Conceptual Framework of the study

# CHAPTER THREE RESEARCH DESIGN AND METHODOLOGY

Research design refers to the overall plan that outlines how data will be collected and analyzed to test a research hypothesis or to gain a deeper understanding of the problem being investigated. This phase is critical in the research process. The current chapter outlines the various research methods used in the study, including research design, research methodology, sampling techniques, target population, data collection tools/instruments, and data analysis procedures.

#### 3.1 Research Design

The methodology of the study emphasizes that the selection of research design and methodology should align with the research questions, objectives, and the problem under investigation. To investigate the effect of procurement practice on project performance, an explanatory research design is deemed appropriate to establish a cause-and-effect relationship between dependent and independent variables. In this research design, Empirical data is collected to test the research hypotheses.

#### 3.2 Research Approach

Quantitative research is a scientific investigation that involves the collection and analysis of numerical data to understand the relationships between variables. The objective of quantitative research is to develop and test mathematical models, theories, and hypotheses related to natural phenomena. Measurement is a critical component of quantitative research, as it links empirical observations to mathematical expressions of attributes. According to, such as Creswell, J.W. and Creswell, J.D. (2018) and Johnson and Christensen (2021), quantitative research involves the collection of numerical data and the use of mathematically-based methods to analyze and interpret the data. This type of research relies on systematic and formal measurement of phenomena, as well as statistical analysis. As this study used systematic data collection, measurement, and statistical analysis to obtain findings, it can be classified as a quantitative research study.

#### **3.3 Population and Sampling**

#### **3.4.1** Target Population

Target population refers to the group of individuals or elements from which the sample for a research study is drawn and to which the study results will be generalized (Leedy & Ormrod, 2021). As defined by Creswell, J.W. and Creswell, J.D. (2018), a population is a group of individuals or objects with similar characteristics, while the target population is a subset of the population that meets the specific criteria for inclusion in the study. In this study, the target population is procurement employees of Dan Energy, with a sample size of 40/100 respondents being selected for the study based on predetermined criteria.

#### 3.3.2 Sample Size

To generate the sample for this study, a simple random sampling method was used. This method was chosen because it is easy to use and includes all members of the population, making it more likely to achieve a representative sample (Polit and Beck, 2021). According to this method, every member of the population has an equal chance of being selected for the sample. The ideal sample size depends on the type of research being conducted. In this study, a sample size of 40 participants was estimated using the Yamane formula (Yamane, 1967:886), and a questionnaire was distributed to the selected participants.

#### 3.3.3 Sampling Technique

This study utilized the simple random sampling method for sample selection due to its ease of use and fair selection process. Simple random sampling allows for equal opportunity for every member of the population to be selected, leading to a representative sample that can be used to generalize about the population. As one of the main goals of research is to draw conclusions about the population based on the results of a sample, a representative sample is crucial. The sample size was calculated using Yamane's (1967:886) formula assuming a 95% confidence level and P = 0.5. This formula is ideal for populations with a target population of 40. i.e.

Where n - is the sample size

- N- Is the population size
- e is the level of precision

$$n = \frac{N}{1 + N(e)^2}$$

#### **3.4 Instruments of Data Collection**

A survey was conducted as a research method for this study, and a structured questionnaire was utilized as the primary survey instrument to collect quantitative data. The questionnaire was considered the most suitable and the method was chosen due to its affordability and ease of administration data collection tool (Hair, Babin and Anderson 2019). A closed-ended questionnaire format was adopted, with most questions being Likert-scale questions, except for those pertaining to demographic characteristics of the respondents. The Likert scale adopted for this study is a five-point scale, where 1-Very Low Extent, 2-Low Extent, 3-Moderate Extent, 4-Great Extent, 5-Very Great Extent. The reviewed literature provided insight into the effect of project procurement practices on project performance. The questionnaire was designed to focus on project procurement management practices and their impact on project performance.

#### **3.5 Data Collection Procedure**

Before actual data collection, a pilot test is conducted on research instruments to test the clarity of the questions for face validity. This is done by administering the questionnaire to a small sample of respondents, typically 10 individuals, and analyzing their feedback on the clarity and relevance of the questions. Any unclear questions are corrected or rephrased before the main data collection process. Additionally, to minimize response bias, a time interval of four to five days is allowed between dropping and picking up the questionnaires. This helps to ensure that the respondents have had adequate time to carefully consider and respond to the questions (Sekaran and Bougie, 2019).

#### **3.6 Validity and Reliability of the Instruments**

Reliability in research refers to the extent to which an instrument or measure consistently produces the same results over time (DeVellis, 2017). To ensure the reliability of the questionnaire used in this study, the researcher employed the test-retest method, which involves administering the same questionnaire to the same group of participants at two different times and comparing the results (Tavakol & Dennick, 2011). In addition, internal consistency was assessed using Cronbach's alpha coefficient (calculated with statistical software such as SPSS Version 27) to measure the extent to which the questions in the questionnaire are measuring the same construct (Nunnally, J.C. and Bernstein, I.H. 2010).

#### **3.7 Data Processing and Analysis**

To ensure the accuracy of the data, the research team conducted a thorough editing process to identify and eliminate any errors or biases in the responses provided by the respondents. Each response was assigned a unique code, and a coding list was created for analysis purposes. Descriptive statistics such as frequency distributions, means, and standard deviations were used to analyze the data. The findings were presented using pie charts, bar graphs, and tables. According to recent research methodology (Johnson and Christensen, 2021), data analysis involves the organization and interpretation of data collected in a study. The collected data was entered into a spreadsheet and analyzed using Statistical Package for Social Sciences (SPSS), which has several descriptive statistics features that enable comparison of variables and provide clear indications of response frequencies. The questionnaire was designed to measure all variables involved in the study. The regression model used to analyze the data was as follows:

 $Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \varepsilon$ 

Where: Y= Project Performance

- X1 = Need Assessment
- X2 = Supplier Sourcing
- X3 = Contract Management
- X4 = Inventory Management
- $\mathcal{E}$ = Error term
- $\beta 0 = Constant$
- $\beta 1$  = Coefficient associated with X1
- $\beta 2 =$ Coefficient associated with X2
- $\beta 3 =$ Coefficient associated with X3
- $\beta 4$  = Coefficient associated with X4

#### **3.8 Ethical Considerations**

According to Saunders, Lewis, and Thornhill (2009), ethics in research pertains to the appropriateness of the researcher's behavior in relation to the rights of the subjects of the research or those affected by it. The data for this study was collected only from willing participants, and no unethical or coercive methods were used. The study results were solely used for academic purposes, and the responses of the participants were kept confidential and analyzed in the aggregate without any alteration by the researcher. Moreover, the researcher duly acknowledges the work of previous studies or investigations that have been used as a basis for the current research and properly cited them.

## CHAPTER FOUR

## DATA PRESENTATION, ANALYSIS, AND INTERPRETATION

This chapter of the research paper incorporates four parts. The first part discusses about the sample characteristics of the respondents is presented using descriptive statistic. Then correlation analyses and regression analysis, as well as discussion of the result presented accordingly.

#### 4.1 Responses rate

After distributing a total of 45 questionnaires to respondents, we successfully retrieved 40 completed questionnaires, representing a response rate of 88.9%. Subsequently, the retrieved questionnaires underwent thorough validation to ensure their suitability for statistical analysis.

#### **4.2** The General Background of the Respondents

The table below displays the demographic information of the respondents, including their gender, age, education background, department, responsibility and years of employment. This information was obtained through structured questions administered to the respondents, and their responses have been thoroughly analyzed. The data collected from this survey was processed using the SPSS software for further analysis.

A total of 40 questionnaires were completed and used in data analysis representing 88.9 percent of response rate. In order to generally describe the characteristics of the respondent; gender, age, education background, department, responsibility and years of employment were part of the general information questions.

1. Gender					
Frequency Percent Valid Percent Cumulative Perce					
Valid	Male	25	62.5	62.5	62.5
	Female	15	37.5	37.5	100.0
	Total	40	100.0	100.0	

Majority of the respondents were males which were 62.5% and female respondents were 37.5%.

Source: Field survey result, 2023 (SPSS version 27)

Table 1 Characteristics of Respondents of Gender

As to the age of the subject 29 (72.5%) of them were 20 - 30 years, 11 (27.5%) of them were between 31 - 40 years. This shows that the greater number of respondents are found between 20-30 years that is 22 (72.5%).

2. Age					
Frequency Percent Valid Percent Cumulative Perce					
Valid	20-30	29	72.5	72.5	72.5
	31-40	11	27.5	27.5	100.0
	Total	40	100.0	100.0	

Source: Field survey result, 2023 (SPSS version 27)

#### Table 2 Characteristics of Respondents of Age

The education background level of respondents shows that 87.5% of them BA/BSC degree completed, 12.5% of them MSc/MA completed. This implies that, among the total number of respondents, most of them are BA/BSC degree holder in this regard.

Sources	Eigld /	aurrian racult	2022	(CDCC	varian 27)
Source.	Liein :	survey result,	, 2023	(51,25	version 27

3. Educational Background							
	Frequency Percent Valid Percent Cumulative Percent						
Valid	BA/BSC Degree	35	87.5	87.5	87.5		
	MSc/MA	5	12.5	12.5	100.0		
	Total	40	100.0	100.0			

Table 3 Characteristics of Respondents of Education

Regarding to the department of the respondents 10 (25.0%) of the respondents were Procurement and Supply unit, 2 (5%) of the respondent were from project management unit and 28 (70%) of the respondent were from Planning and development unit.

4. Your Department in your Organization.								
	Frequency Percent Valid Percent Cumulative Percent							
Valid	Procurement and Supply unit	10	25.0	25.0	25.0			
	Project Management unit	2	5.0	2.5	27.5			
	Planning and development unit	28	70.0	70.0	100			

Source: Field survey result, 2023 (SPSS version 27)

#### Table 4 Characteristics of Respondents of Department

Concerning the responsibility of the respondent in each department, 3 (7.5%) were Manager, 13 (32.5%) were team leaders and 24 (60%) were officers.

5. Your present responsibility.								
	Frequency Percent Valid Percent Cumulative Percent							
Valid	Project Manager	3	7.5	7.5	7.5			
	Team Leader	13	32.5	32.5	40.0			
	Officer	24	60.0	60.0	100.0			
	Total	40	100.0	100.0				

Source: Field survey result, 2023 (SPSS version 27)

#### Table 5 Characteristics of Respondents of Responsibility

Regarding the experience of the respondent employees, 34 (85%) less than 1 year and 6 (15%) were

1-2 years' experience.

6. How many years have you been worked in your organization?							
		Frequency	Percent	Valid Percent	Cumulative Percent		
Valid	less than 1 year	34	85.0	85.0	85.0		
	1 - 2 years	6	15.0	15.0	100.0		
	Total	40	100.0	100.0			

Source: Field survey result, 2023 (SPSS version 27)

#### Table 6 Characteristics of Respondents of work experience

#### 4.3 Reliability Test Result

The reliability test serves as a crucial tool for assessing the level of consistency in measuring a specific attribute. According to recent research by Mahon and Yarcheski (2020), the greater the consistency observed in repeated measurements of an attribute, the higher the reliability. reliability is synonymous with the stability, consistency, or dependability of a measuring instrument. Among the widely recognized measures of reliability, Cronbach's alpha stands out. It evaluates the internal consistency of items within a scale, indicating the degree of interrelatedness among questionnaire items and whether the scale is unidimensional or multidimensional. The typical range for Cronbach's coefficient alpha is between 0 and 1, with higher values signifying a greater level of

VariablesCronbach's AlphaN of ItemsNeed Assessment0.8276Supplier Sourcing0.7868Contract Management0.7376Inventory Management0.7565

internal consistency. While different authors may advocate for varying thresholds to achieve internal reliability, the most commonly accepted value is 0.70 or higher (Smith et al., 2021).

Source: Field survey result, 2023 (SPSS version 27)

**Project Performance** 

Over all Reliability

#### Table 7 Cronbach's Alpha Result

7

32

0.878

0.93

The measurement of Project Procurement Practice in this study involved capturing four dimensions as outlined in the questionnaire. These dimensions were subsequently combined to create a composite scale, demonstrating high internal consistency with a Cronbach's alpha coefficient of 0.813. The constructed variables, namely Need Assessment (Cronbach's alpha = 0.827), Supplier Sourcing (Cronbach's alpha = 0.786), Contract Management (Cronbach's alpha = 0.737), and Inventory Management Control (Cronbach's alpha = 0.756), along with Procurement Performance (Cronbach's alpha = 0.878), were retained for further analysis. It is important to note that an alpha value of 0.70 or greater is generally considered acceptable.

#### 4.4 Descriptive Analysis of Variables result

Summary statistics were employed to provide a comprehensive overview of the data in the study, offering concise summaries of the sample and the measurements taken. Descriptive statistics were utilized by the researcher to present quantitative descriptions in a concise format, condensing a large amount of data into easily interpretable summaries (Gelman, 2007). Mean scores were calculated for each variable related to project procurement practice by assigning equal weight to the mean scores of the individual items within each dimension. Respondents were asked to rate their insights or observations using a five-point Likert scale, ranging from 1 (Very low Extent) to 5 (Very great Extent), in relation to the dimensions of project procurement practice. The resulting scores are presented in the table below.

Variables	Ν	Minimum	Maximum	Sum	Mean	Std. Deviation
Need Assessment	40	2.67	5.00	151.17	3.7792	0.63648
Supplier Sourcing	40	2.75	5.00	151.88	3.7969	0.52248
Contract Management	40	2.67	5.00	149.67	3.7417	0.59551
Inventory Management	40	1.80	5.00	145.80	3.6450	0.71107
Valid N (listwise)	40					

Source: Field survey result, 2023 (SPSS version 27)

#### Table 8 Descriptive Statistics of Project Procurement Practice Dimensions

As it can be seen from Table 4.5-1 above the mean score values of project procurement practices ranges between 3.7969 (mean score value of Supplier Sourcing) with standard deviation of 0.52248 and 3.6450 (means score value of Inventory Management) with standard deviation of 0.71107. From these findings Supplier Sourcing has the highest mean score which implicates project time, budget, quality, risk and transparency an important determinant in Supplier Sourcing.

4.4.1 Need Assessment practices

Questions	N	Min	Max	Sum	Mean	Std.
Conducting thorough market research and analysis before initiating procurement processes.	40	1.00	5.00	149.00	3.7250	0.90547
Identifying and prioritizing Company needs and requirements before procuring goods or services.	40	3.00	5.00	159.00	3.9750	0.83166
Assessing the risks associated with procurement activities and developing risk mitigation strategies.	40	1.00	5.00	154.00	3.8500	0.83359
Evaluating the feasibility and cost-effectiveness of procurement options before making purchasing decisions.	40	3.00	5.00	152.00	3.8000	0.79097
Engaging stakeholders and end-users in the need assessment process to ensure their input is considered.	40	2.00	5.00	138.00	3.4500	0.98580
Documenting and reviewing past procurement experiences to inform future need assessment processes.	40	1.00	5.00	155.00	3.8750	0.85297
Valid N (listwise)	40					

Source: Field survey result, 2023 (SPSS version 27)

#### Table 9 Need Assessment Practices variables list

Descriptive statistics especially means and standard deviation was used to evaluate the effect of need assessment practices on project performance. Under need assessment practices, there were about 6 specific statements in the form of Extent scale. Each statement focused on the theoretical ground of project procurement practice and how much it influences the project performance. The output of the sample statistics shows that having Identifying and prioritizing Company needs and requirements before procuring goods or services in Dan Energy rate score higher mean of 3.9750 and Engaging stakeholders and end-users in the need assessment process to ensure their input is considered has the lowest mean score of 3.4500. The overall mean score of Need assessment practices was calculated to be (Mean=3.7792) with the standard deviation (0.63648) which is the medium among the other dimensions.

Questions		Min	Max	Sum	Mean	Std. Deviation
The Company has procurement functions in 2015 E.C.	40	1.00	5.00	147.00	3.6750	0.82858
The predefined criteria for evaluating potential suppliers are comprehensive and aligned with our organization's needs.	40	1.00	5.00	143.00	3.5750	0.81296
Organization's management has fully implemented procurement policy.	40	3.00	5.00	164.00	4.1000	0.70892
The implementation of the purchasing manual is complete.	40	1.00	5.00	142.00	3.5500	0.90441
Supplier performance is regularly tracked and evaluated using established metrics.	40	1.00	5.00	145.00	3.6250	0.92508
The supplier selection process in our organization is fair and transparent.	40	3.00	5.00	160.00	4.0000	0.78446
We have clear criteria for evaluating potential suppliers.	40	3.00	5.00	155.00	3.8750	0.75744
We are considering implementing digital tools or technologies to support the Supplier Sourcing Function.	40	1.00	5.00	159.00	3.9750	0.86194
Valid N (listwise)	40					

4.4.2	Supplier	Sourcing	practices
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Source: Field survey result, 2023 (SPSS version 27)

 Table 10 Supplier Sourcing practices Descriptive Statistics

As shown in the table 4.5-3 above, Supplier sourcing practices was measured by 8 items the mean score of which ranged between respondents who said the supplier sourcing practices, Organization's management has fully implemented procurement policy 4.10 and respondents who said Supplier performance is regularly tracked and evaluated using established metrics with a mean score of 3.6250 respectively. The overall mean score of project procurement planning was calculated to be 3.7969 with the standard deviation (0.52248) which means the response of the respondents to agree up on supplier sourcing practices process statement questions. Therefore, from the analyzed data it is possible to say that the respondents perceive that Dan Energy is a corporation that supplier sourcing practices are reliable to improve project performance, but the practices of Supplier performance that are regularly tracked and evaluated using established metrics are effectively not done properly.

Questions	Ν	Min	Max	Sum	Mean	Std.
						Deviation
The contract management team effectively communicates and collaborates with relevant	40	1.00	5.00	148.00	3.7000	0.85335
stakeholders throughout the contract lifecycle.						
The contract management process in our organization is efficient and well-organized.	40	2.00	5.00	151.00	3.7750	0.89120
Our organization utilizes technology or software tools to streamline and enhance contract management processes.	40	1.00	5.00	146.00	3.6500	0.89299
The contract management team ensures compliance with contractual obligations and identifies any potential risks.	40	2.00	5.00	149.00	3.7250	1.01242
Our organization has a standardized approach for contract creation, negotiation, and approval.	40	1.00	5.00	147.00	3.6750	0.88831
Contracts are consistently reviewed and updated to ensure their relevance and accuracy.	40	2.00	5.00	157.00	3.9250	0.88831
Valid N (listwise)	40					

4.4.3 Contract Management practices

Source: Field survey result, 2023 (SPSS version 27)

#### Table 11 Contract Management Descriptive Statistics

As shown in the table 4.5-4 above, Contract Management practices was measured by 6 items the mean score of which ranged between respondents who said the Contract Management practices,

Contracts are consistently reviewed and updated to ensure their relevance and accuracy 3.9250 and respondents who said Our organization utilizes technology or software tools to streamline and enhance contract management processes with a mean calculation is 3.6500 respectively. The overall mean score of project procurement planning was calculated to be 3.7417 with the standard deviation (0.59551). Therefore, from the analyzed data it is possible to say that the respondents perceive that Dan Energy that Contracts are consistently reviewed and updated to ensure their relevance and accuracy impact on continuously improving projects, but the practices of Our organization utilize technology or software tools to streamline and enhance contract management processes are effectively not done properly.

Questions	Ν	Min	Max	Sum	Mean	Std.
						Deviation
Inventory purchases often fail to meet the demand and supply principle.	40	1.00	5.00	140.00	3.5000	0.98710
Rate your Organization level of stores' management practice.	40	3.00	5.00	158.00	3.9500	0.74936
Our organization utilizes technology or software tools to streamline and enhance inventory management processes.	40	1.00	5.00	154.00	3.8500	0.86380
How well is your organization able to deliver quality service to end users of the project through inventory management?	40	1.00	5.00	140.00	3.5000	1.19829
Procuring of goods and services add to cost reduction to the organization.	40	1.00	5.00	137.00	3.4250	1.12973
Valid N (listwise)	40					

4.4.4 Inventory Management practice

Source: Field survey result, 2023 (SPSS version 27)

 Table 12 Inventory Management Descriptive statistics

Under Inventory Management practices was measured by 5 items the mean score of which ranged between respondents who said the Inventory Management practices, rate your Organization level of stores' management practice 3.9500 and respondents who said Procuring of goods and services add to cost reduction to the organization with a mean calculation is 3.4200 respectively. The overall mean score of project procurement planning was calculated to be 3.6450 with the standard deviation (0.71107). Therefore, from the analyzed data it is possible to say that the respondents

perceive that Dan Energy that rates your Organization level of stores' management practice impact on continuously improving projects, but the practices of Procuring of goods and services add to cost reduction to the organization processes are effectively not done properly.

## 4.5 Correlation Analysis

The relationship between the independent and dependent variables was examined using the Statistical Package for the Social Sciences (SPSS). The correlation matrix below illustrates the Pearson correlation coefficients, indicating the correlation between the variables in the questionnaire. Table 4.6-1 provides an overview of the relationships among the variables considered in the questionnaire.

Correlations							
		Need	Supplier	Contract	Inventory	Project	
		Assessment	Sourcing	Management	Management	Performance	
Need	Pearson	1	.355*	.376*	.328*	0.262	
Assessment	Correlation						
	Sig. (2-tailed)	-	0.025	0.017	0.039	0.102	
	Ν	40	40	40	40	40	
Supplier	Pearson	.355*	1	.661**	.850**	.792**	
Sourcing	Correlation						
	Sig. (2-tailed)	0.025	-	0.000	0.000	0.000	
	Ν	40	40	40	40	40	
Contract	Pearson	.376*	.661**	1	.644**	.548**	
Management	Correlation						
_	Sig. (2-tailed)	0.017	0.000	-	0.000	0.000	
	Ν	40	40	40	40	40	
Inventory	Pearson	.328*	.850**	.644**	1	.718**	
Management	Correlation						
	Sig. (2-tailed)	0.039	0.000	0.000	-	0.000	
	Ν	40	40	40	40	40	
Project	Pearson	0.262	.792**	.548**	.718**	1	
Performance	Correlation						
	Sig. (2-tailed)	0.102	0.000	0.000	0.000	-	
	Ν	40	40	40	40	40	
*. Correlation	is significant at the	e 0.05 level (2-	tailed).	-			
**. Correlation	n is significant at t	he 0.01 level (2	2-tailed).				

Source: Field survey result, 2023 (SPSS version 27)

Table 13 Pearson Correlation Matrix

**Correlation:** analysis examines whether the relationship between two variables is linear, where one variable increase and the other either increases or decreases. The Pearson product moment correlation coefficient measures this linear correlation between variables X and Y, ranging from +1 to -1. A value close to 1 indicates a strong relationship, implying that changes in one variable are strongly correlated with changes in the second variable. A value close to 0 suggests a weak relationship, indicating that changes in one variable are not correlated with changes in the second variable (Malhotra, 2007). The correlation coefficient (r) is classified as weak (-0.1 to 0.29), moderate (0.3 to 0.49), or strong (>0.5) (Field, 2005). A positive correlation (+) means that as one variable increases, the second variable decreases, while a negative correlation (-) means that as one variable increases, the second variable decreases (Field, 2005).

**The Significate (2-Tailed) value**: indicates whether there is a statistically significant correlation between two variables. If the value is greater than 0.05, the researcher can conclude that there is no statistically significant correlation, implying that changes in one variable do not significantly relate to changes in the second variable (Pedhazur, 1982).

The correlation matrix above reveals a strong positive correlation between project procurement practices and project performance. The highest correlation coefficient is observed between suppliers sourcing practices and project performance (r=0.792, n=40, p  $\leq$  0.01), indicating a significant positive relationship. Inventory Management practice also exhibits a significant positive relationship with project performance (r = 0.718, n=40, p  $\leq$  0.01), Contract Management practices demonstrates a significant positive relationship with project performance (r = 0.718, n=40, p  $\leq$  0.01). Furthermore, Need Assessment practices process demonstrates a significant week relationship with project performance (r = 0.262, n=40, p  $\leq$  0.01). Overall, the correlation matrix indicates that 3 variables are strong positive correlations and 1 variable is weak positive correlation between the dependent variable.

In the correlation table, all numbers next to Sig. (2-tailed) are (.001), suggesting statistical significance. When this value is less than 0.05, the correlation is considered significant, providing 95% confidence that the relationship between variables is not due to chance. Therefore, it can be concluded that there is a significant correlation between project procurement practice and overall project performance.

#### 4.6 Regression Analysis results

Regression is a statistical technique utilized to predict the value of a dependent variable by utilizing one or more independent variables (Albaum, 1997). It is commonly employed to examine relationships between variables and determine the causal impact of one variable on another. In order to investigate such relationships, researchers collect data on the relevant variables and employ regression analysis to estimate the quantitative effect of the causal variables on the influenced variable. Additionally, researchers typically assess the "statistical significance" of the estimated relationships, which reflects the level of confidence in the proximity of the true relationship to the estimated relationship (Malhotra, 2007).

#### 4.6.1 Model summary

The summary table for the model Table 4.7-1 displays an R-Square value of 0.649. This indicates that 64.9% of the variation in the dependent variable, which includes inventory management, supplier sourcing process, need assessment and contract management, can be explained by these independent variables. The R-Square value represents the percentage of the dependent variable that is accounted for or explained by the independent variables in the model.

	M. 1.1 C									
				Model St	ummary					
Model	R	R Square	Adjusted R	Std. Error	Change S	tatistics				Durbin-
			Square	of the	0					Watson
				Estimate	R	F	df1	df2	Sig. F	
					Square	Change			Change	
					Change					
1	.806ª	0.649	0.609	0.51457	0.649	16.205	4	35	0.000	2.269
a. Predi	ctors: (C	onstant), Nee	ed Assessment,	Supplier Sou	rcing, Cont	ract Mana	gement,	Invento	ry Manage	ment
b. Depe	ndent Va	riable: Proje	ct Performance	2						

Source: Field survey result, 2023 (SPSS version 27)

 Table 14 Model Summary for project performance

Coefficients <sup>a</sup>								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.		
		В	Std. Error	Beta				
1	(Constant)	0.672	0.488		1.378	0.177		
	Need Assessment	-0.196	0.135	-0.172	-1.456	0.154		
	Supplier Sourcing	0.526	0.235	0.487	2.237	0.032		
	Contract Management	0.016	0.183	0.015	0.086	0.932		
	Inventory Management	0.454	0.207	0.417	2.192	0.035		
a. Depende	ent Variable: Procurement l	Performance						

4.6.2 Regression Coefficients

Source: Field survey result, 2023 (SPSS version 27)

Table 15 Coefficient Table

From the coefficient table 4.7-2, the following regression equation was obtained.

 $Y = 0.672 + (-0.172)X_1 + 0.487X_2 + 0.015X_3 + 0.417 X_4 + \varepsilon$ 

Where: Y= Project Performance

X1 = Need Assessment

X2 = Supplier Sourcing

X3 = Contract Management

X4 = Inventory Management

 $\mathcal{E}$ = Error term

The highlighted column B represents the value for the intercept (a) in the regression equation, as indicated in the first row labeled "constant." The values below the column labeled " $\beta$ eta" correspond to the regression coefficients for need assessment practices, supplier sourcing process, contract management practices, and inventory management practices. These coefficients provide information about the strength and direction of the relationship between each independent variable and the dependent variable. In multiple regression, the standardized regression coefficient Beta ( $\beta$ ) is particularly useful because it enables a comparison of the relative strength of each independent variable's relationship with the dependent variable (Pedhazur, 1982).

#### 4.7 Diagnostic Test Result

#### 4.7.1 ANOVA Test Results

The study utilized an analysis of variance (ANOVA) test to evaluate the significance of the regression line and to determine if any variables were unintentionally omitted. ANOVA is a statistical test that helps assess the overall significance of the regression model and whether it provides a better fit to the data compared to a model without any independent variables. Furthermore, the test aids in identifying if any crucial variables were inadvertently excluded from the analysis, as it examines the comprehensive significance of the regression equation (Field, 2018).

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	17.163	4	4.291	16.205	.000 <sup>b</sup>
1	Residual	9.267	35	0.265		
	Total	26.431	39			
a. Depender	nt Variable: Project Perfor	mance				
b. Predictors: (Constant), Inventory Management, Need Assessment, Contract Management,						
Supplier Sourcing						
Source: Field si	rvev result 2023 (SPSS versio	n 27)				

#### Table 16 ANOVA test result

#### 4.7.2 Variance Inflation Factor Results

	Collinearity Statistics					
Model	Tolerance	VIF				
Need Assessment	0.720	1.390				
Supplier Sourcing	0.211	4.734				
Contract Management	0.336	2.975				
Inventory Management	0.277	3.614				

Source: Field survey result, 2023 (SPSS version 27)

#### Table 17 VIF test result

VIF tests conducted in the recent study indicated that the variance inflation factor for Need Assessment was 1.390, Supplier Sourcing was 4.734, Contract Management was 2.975, and Inventory Management had a value of 3.614. Based on these results, it was concluded that there were no significant issues of multicollinearity, as all the VIF values were below the threshold of 5 (Cohen, Cohen, West, & Aiken, 2013).

#### 4.8 Hypothesis Testing

This section presents the results of the hypothesis testing conducted in the recent study.

# Hypothesis 1: Need Assessment does have a significant effect on Project Performance at Dan Energy.

In Table 4.7.2-1, first, the intercept is 0.672, when all independent variables have a value of zero. Then, moving through the equation, holding supplier sourcing process, contract management practice, and inventory management remain constant, the need assessment practices decrease the project performance by 0.172 b/c the value is negative for each additional project procurement practice management level decrement. This implies that a one percent decrease in need assessment practices results in a 17.2 percent decrease in project performance. The p-value for this coefficient is statistically not-significant (p>.05), meaning need assessment practices are a non-significant predictor of project performance. Accordingly, the first hypothesis which states there is a significant and positive relationship between need assessment practices and project performance is not supported by the data collected on this survey (P> 0.05;  $\beta$ =-0.172) hence, the hypothesis is not accepted.

# Hypothesis 2: Supplier Management does have a significant effect on Project Performance at Dan Energy.

The second hypothesis which states that there is a significant and positive relation between the Supplier management process and project performance is also supported because the P-value of the Supplier management process is (P<0.05;  $\beta$ =0.487) hence the Supplier management process has a significant and positive relationship with project performance, the value of beta ( $\beta$ =0.487) implies that a one percent increase in project procurement planning result in 48.7 percent increase in project performance, the hypothesis is accepted.

# Hypothesis 3: Contract management level involvement does have a significant effect on Project Performance at Dan Energy.

The third hypothesis which states that there is a significant and positive relation between the Contract management practices and project performance is also supported because the P-value of the Supplier management process is (P>0.05;  $\beta$ =0.015) hence the Supplier management process

has not a significant and positive relationship with project performance, the value of beta ( $\beta$ =0.015) implies that a one percent increase in project procurement planning result 15 percent increase in project performance, others factors remaining constant. Thus, the hypothesis is not accepted.

# Hypothesis 4: Inventory management does have a significant effect on Project Performance at Dan Energy.

The third hypothesis which states that there is a significant and positive relation between the Inventory management practices and project performance is also supported because the P-value of the Inventory management practices is (P<0.05;  $\beta$ =0.417) hence the Inventory management practices has a significant and positive relationship with project performance, the value of beta ( $\beta$ =0.417) implies that a one percent increase in project procurement planning result 41.7 percent increase in project performance, others factors remaining constant. Thus, the hypothesis is accepted.

#### 4.10 Discussion of the Results

The section discusses the main findings of the research and makes comparisons with findings of previous researches.

The research findings show that there is a significant and positive relationship between project procurement management Practice and project performance support Eriksson and Westerberg (2012) conducted a study with the purpose to increase the understanding of how chosen procurement procedures affect project performance. The strength of the relationship shows the extent of the impact of project procurement practice which was measured in terms of creating awareness for the project team of the importance of procurement management practice and setting project procurement management documented policies and procedures to complete projects without extension of time, additional budget and to satisfy stakeholders' expectations.

Finally, at the beginning of a project, it is crucial to thoroughly evaluate all factors to select the most suitable procurement approach for the project. This is important because each procurement system has its unique characteristics and specificities that can influence the project's cost, time, and quality, ultimately affecting its overall project performance. In summary, all independent

variables of procurement procedures outlined in the conceptual framework demonstrated a positive and negative impact on project performance.



Source: Hypothesis Testing result

Figure 2 Project Performance

## CHAPTER FIVE

# SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

In this chapter, we provide a summary of the study's findings, conclusions, and recommendations. The primary objective of this research was to investigate the impact of procurement practices on project performance. The identified factors influencing project performance include effective implementation of need assessment practices, efficient suppliers sourcing process, proficient contract management practices, and effective inventory management practices.

### **5.1 Summary of Findings**

This study set out to investigate the effect of procurement practice on project performance at Dan Energy. Its specific objective included finding out the effect of need assessment practices, supplier sourcing processes, contract management practices, and inventory management practices on the project performance of Dan Energy. The primary data collected through the questionnaire is summarized and presented as follows:

In order to determine the effect of procurement procedure and method on project performance majority of the respondents supported the idea that contract management practices are not properly implemented at Dan Energy as indicated by a mean of 3.5625.

- The result of independent variable of descriptive statistics has shown that, the mean score of procurement practices variables i.e. need assessment practices, suppliers sourcing process, contract management practices, and inventory management practices has been 3.6833, 3.5719, 3.5625, & 3.6000 respectively. The result indicated that, the highest mean score from the independent variable is 3.6833 for need assessment practices. Therefore, the corporation had better to a continuous improvement, increase number of projects completed on time, improve quality, improves transparency and reduce risk.
- The correlation matrix indicates that the four project procurement practices variables: "need assessment practices, suppliers sourcing process, contract management practices, and inventory management practices" were positively and strongly correlated with overall project performance with interval & at 0.01 p-value 2taild, by scoring a Pearson Correlation Coefficient "R-value" of 0.262, 0.792\*\*, 0.548\*\* and 0.718\*\*. The highest strong coefficient of correlation in this research between equally both suppliers and sourcing

process and contract management practice variables and project performance is 0.792 and 0.718. In this case relatively suppliers and sourcing process and contract management practice had a higher strong relationship with overall project performance (r = 0.792, and 0.718 n = 44, p  $\leq 0.01$ ) than the other three independent variables.

#### 5.2 Conclusion

Based on the findings from the field and the reviewed literature, the researcher concludes that need assessment practices and contract management practices have a significant impact on project performance at Dan Energy. It can be clearly concluded that effective need assessment practices and contract management practices contribute to improved project performance. Furthermore, it is crucial to carefully consider all factors at the outset of a project when selecting the most appropriate procurement practice. Each procurement system has its unique characteristics and peculiarities that influence the project's cost, time, and quality, thereby affecting project performance. In summary, both the need assessment practices and contract management practices in the conceptual framework have a positive influence on project performance.

The study's main purpose was to investigate the effect of procurement management practices on project performance. The study was conducted on Dan Energy plc. All selected project procurement management practice variables/dimensions significantly affect project performance. Concerning the demographics of the respondents, the majority of the respondents were males which was 62.5 % and female respondents were 37.5 %. The majority of them are found between 20-30 years that is 29 (72.5%). Their education status has also shown that most of the respondents were BA/BSC degree holders.

Correlation analysis was conducted to analyze the relationships between variables, the correlation matrix revealed that all coefficient of correlation independent variables was positive and strongly correlate with the dependent variable. Further regression analysis was also conducted and results revealed that the four independent variables (Need assessment practice, Supplier Sourcing process, Contract Management practice, and Inventory Management) contribute to a statistically significant level at (p-value =0.001). The score of the coefficient correlation determination ( $R^2$ ) is 0.609 which indicates, 60.9 % of the variability of project performance was explained by the four independent variables. The Beta weight score indicated that the effect of the Supplier Sourcing process and

Inventory Management is greater than that of other project procurement practices variables. Based on hypothesis testing the p-value of Need assessment practice and Contract Management practice is less than 0.05, thus the researcher can accept the hypothesis and all the project procurement practices dimensions.

#### **5.3 Recommendation**

From the above-mentioned findings and conclusions, this study recommended that before any project is perceived for implementation, as the project is it is better to plan and preparing detailed procurement practice i.e. need assessment practices, contract management practices to implement the project. Trough contract management practices recommended that using supportive procurement method, try to use acceptable tender regulation, the plan of procurement also clearly understandable goals and objectives of the project. Based on the conclusions therefore, the study recommends that Dan Energy better include the above-mentioned activities are ensuring that project performance improves. The researcher also recommends supplier sourcing of Dan Energy is also another critical function that helps to improve project performance. It is important for Dan Energy to have procurement functions used by the country as whole and employees must be fully adopted acceptable tendering regulation, implement procurement policies, complete the implementation of purchasing manuals, serve suppliers effectively, submit proposals to potential suppliers and finally ensure that the organization is linked up to its suppliers and end users.

Procurement management practice and project performance have a significant positive correlation. The researcher forwards the following recommendation based on the research findings and conclusions drawn in the previous sections.

Most of the mean score of the dependent and independent variable has been accumulated on the midpoint and inclined to agree. In order to have a continuous improvement of the project performance, the company better to have well-organized and documented project procurement practices to complete projects as per the scope, the budget, and within the schedule to meet the stakeholder's expectation. The corporation should achieve and maintain effective and efficient performance of project procurement practice as an essential function for the successful provision of overall project performance.

- It is recommended that important for the company to measure project performance on a continuous performance improvement with procurement management practices and their relative importance to improve the performance indicators.
- The company better focus on efficient project procurement management practices as a critical function in the success factors of construction projects.
- The procurement and supply management units should strive to ensure all personnel involved in the procurement function advised working cooperatively with the project unit to ensure effective use of time, budget, and resources thereby meeting the objectives of the project.

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# APPENDIX: Questionnaire REQUEST FOR PARTICIPATION IN A RESEARCH STUDY



Dear participants,

First of all, I would like to thank you for your willingness to respond to my questions. My name is Girum Zegeye, I am a MA student in Project Management at St. Marry University.

As part of my Master's program now I am conducting a project work entitled "The effects of Procurement management Practices on the Project Performance". I kindly request you to participate in this research study by completing the attached questionnaire. In order to ensure that all information will remain confidential please do not include your name. As well I sincerely request you to respond to the question as honestly as possible and return the completed questionnaires. Knowing that your time is available please, please take few minutes of your time to complete the questionnaire.

Thank you very much for your time and assistance in my educational work.

#### **General Instruction and Information**

The questionnaire has close-ended please read each statement carefully and show the extent of your agreement on the statements by mark in the boxes which most accurately reflects your opinion.

Please answer all the questions. There is no right or wrong answer. Assure you that all response will be used only as an input for this study.

Thank You!!!

#### QUESTIONNAIRE

#### **SECTION A: General information**

1.	Gender	Male [ ]	Female [ ]				
2.	Age	20-30 [ ]	31-40 [ ]	20-30 [ ]	31-40 [ ]		
3.	Educational Background						
	a) Diploma [] b) Degree [	] c) Mas	ster's []	d) Other			
4.	Yours Department in your O	rganization	a) Pro	ocurement and S	Supply [ ]		
	b) Project Management []	c) Planning and	l development	[] d) Other_			
5.	Your present responsibility	a) Project Mar	nager b) Tea	m Leader c)	Officer		
6.	How many years have you b	een worked in y	our organizati	on?			
	a) Less than 1-year b) 1 –	2 years c) $2 - 2$	3 years d) mor	te than 3 years			
7.	How many employees are employed by your organization?						
	a) Less than 50 b) 51 -	– 100 c) 101	– 200 d) mor	re than 200			

#### **SECTION B: Procurement Practices**

#### A: Need Assessment

Among the Need Assessment procurement practices listed below, which ones have been adopted by your organization? Indicate based on the scale below

I-Very Low Extent, 2-low extent	, 3-moderate extent,	4-large extent,	5-very great extent
---------------------------------	----------------------	-----------------	---------------------

No	Questions	1	2	3	4	5
8	Conducting thorough market research and analysis before initiating procurement processes.					
9	Identifying and prioritizing Company needs and requirements before procuring goods or services.					
10	Assessing the risks associated with procurement activities and developing risk mitigation strategies.					
11	Evaluating the feasibility and cost-effectiveness of procurement options before making purchasing decisions.					
12	Engaging stakeholders and end-users in the need assessment process to ensure their input is considered.					
13	Documenting and reviewing past procurement experiences to inform future need assessment processes.					

# **B:** Supplier sourcing function

Indicate based on the scale below

No	Questions	1	2	3	4	5
14	The Company has procurement functions in 2015 E.C.					
15	The predefined criteria for evaluating potential suppliers are comprehensive and aligned with our organization's needs.					
16	Organization's management has fully implemented procurement policy.					
17	The implementation of the purchasing manual is complete.					
18	Supplier performance is regularly tracked and evaluated using established metrics.					
19	The supplier selection process in our organization is fair and transparent.					
20	We have clear criteria for evaluating potential suppliers.					
21	We are considering implementing digital tools or technologies to support the Supplier Sourcing Function.					

# **C: Contract Management**

Indicate based on the scale below

No	Questions	1	2	3	4	5
22	The contract management team effectively communicates and collaborates with relevant stakeholders throughout the contract lifecycle.					
23	The contract management process in our organization is efficient and well-organized.					
24	Our organization utilizes technology or software tools to streamline and enhance contract management processes.					
25	The contract management team ensures compliance with contractual obligations and identifies any potential risks.					
26	Our organization has a standardized approach for contract creation, negotiation, and approval.					
27	Contracts are consistently reviewed and updated to ensure their relevance and accuracy.					

#### **D:** Inventory Management

Indicate based on the scale below

No	Questions	1	2	3	4	5
28	Inventory purchases often fail to meet the demand and supply principle.					
29	Rate your Organization level of stores' management practice.					
30	Our organization utilizes technology or software tools to streamline and enhance inventory management processes.					
31	How well is your organization able to deliver quality service to end users of the project through inventory management?					
32	Procuring of goods and services add to cost reduction to the organization.					

#### SECTION C: PROJECT PERFORMANCE

Indicate based on the scale below

No	Questions	1	2	3	4	5
33	We regularly evaluate supplier performance and provide feedback to improve relationships.					
34	What is the level of cost reduction control?					
35	How would you rate usability of goods procured?					
36	How is the quality of procured goods?					
37	How can you rate funds' utilization in your organization in the past five years?					
38	To what extent does your organization reduce cost through procurement functions?					
39	The procurement team actively seeks opportunities for cost optimization and process improvement.					

If you have comment or feedback.

\_\_\_\_\_.

Thank you for taking the time to complete this questionnaire. Your feedback is valuable to us.