



**DEBRE BIRHAN UNIVERSITY**

**COLLEGE OF BUSINESS AND ECONOMICS**

**ASSESSMENT OF FACTORS AFFECTING PUBLIC PROCUREMENT**

**PRACTICE IN CASE OF DEBREBIRHAN UNIVERSITY**

**MA Thesis**

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Thesis submitted to Debre Birhan University in partial fulfillment of the requirements for the Degree of Master of Arts in Logistics & Supply Chain Management

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Debre Berhan, Ethiopia

### **Statement of Declaration**

I hereby declare that the thesis entitled “Assessment of factors affecting public procurement practice in case of Debre Berhan University.” is original and has not been submitted for other degrees or the like in this University or any other institutes. It does not contain any material, partly or wholly, published or written by others, except those references quoted in the text.

Student Name

Student Signature and date

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## **CERTIFICATION**

This to certify that Deneke Nesibu has carried out his thesis work on the topic entitled “Assessment of factors affecting public procurement practice in case of Debre Berhan University” under my guidance and supervision. Accordingly, I hereby assure that his work is appropriate and standard enough to be submitted for the award of Master of Arts degree in Logistics and Supply Chain Management.

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Yohannes Tefera (Ass. Professor)

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**DEBRE BERHAN UNIVERSITY**  
**COLLEGE OF BUSINESS AND ECONOMICS**  
**ASSESSMENT FACTORS AFFECTING PUBLIC PROCUREMENT PRACTICE**  
**IN CASE OF DEBREBIRHAN UNIVERSITY**

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## Table of Contents

Statement of Declaration.....	ii
CERTIFICATION .....	iii
ACRONYMS AND ABBREVIATIONS .....	viii
Abstract.....	ix
List of Tables .....	x
Acknowledgement .....	xi
CHAPTER ONE .....	1
INTRODUCTION .....	1
1.1 Background of the study .....	1
1.2 Statement of the Problem.....	3
1.3 Research Questions.....	4
1.4 Objective of the study .....	5
1.4.1 General objective .....	5
1.4.2 Specific Objectives .....	5
1.5 Significance of the Study .....	5
1.6 Scope of the Study .....	5
1.7 Organization of the Study .....	6
CHAPTER TWO .....	7
RELATED LITERATURE REVIEW .....	7
2.1 Theoretical Review .....	7
2.1.1 Definitions and concepts .....	7
2.1.2 The role and the scope of purchasing .....	9
2.1.3. Public procurement.....	13
2.1.4 Principles of Public Procurement System .....	13
2.1.5. Procurement Methods.....	16
2.1.5.1 Types of bid .....	16
2.1.6 Factors Affecting Procurement Structure .....	17
2.1.6.1 Contingency theory.....	17
2.1.6.2 Information and Power Related Factors .....	18
2.1.6.3 Procurement Related Factors.....	19
2.1.7 Factors Affecting Public Procurement Effectiveness.....	21

2.2 Review of Empirical Studies .....	23
2.3 Conceptual Framework.....	24
CHAPTER THREE .....	26
METHODS OF THE STUDY .....	26
3.1 Introduction.....	26
3.2 Research Design.....	26
3.3 Research Approach .....	26
3.4 Population and Sampling Techniques.....	26
3.4.1 Target Population .....	26
3.4.2 Sampling technique .....	27
3.5 Data Source.....	28
3.5.1 Data collection tools .....	29
3.5.2 Data collection procedure.....	29
3.6 Reliability and Validity testing.....	29
3.7 Methods of Data Analysis.....	30
3.7.1 Descriptive statistics.....	30
3.7.2 Inferential statistics.....	30
3.8 Ethical consideration.....	31
CHAPTER FOUR.....	32
DATA PRESENTATION, ANALYSIS AND FINDINGS.....	32
4.1 Response Rate.....	32
4.2 Profile of Respondents.....	32
4.3 Survey Results .....	34
4.3.1 Procurement plan implementation effect on public procurement practice.....	35
4.3.2 Employee’s Competence effect on public Procurement practices .....	37
4.3.3 ICT adoption effect on Public Procurement Practice .....	40
4.3.4 Operational Procedures effect on public Procurement practice .....	42
4.4 Evaluate Public procurement practice in DBU .....	44
4.5 Tests and Statistical Analysis.....	47
4.5.1 Normality Test.....	47
4.5.2 Correlation Relation .....	48
4.5.3 Multicollinearity Assumptions .....	49
4.5.4 Multiple Regression Results.....	51
Chapter Five.....	55

Summary, Conclusions and Recommendations.....	55
5.1 Summary of Findings.....	55
5.1.1 Procurement Plan Implementation .....	55
5.1.2 Employee’s Competence .....	55
5.1.3 ICT Adoption.....	56
5.1.4 Operation Management .....	56
5.2 Conclusions.....	57
5.3 Recommendations.....	58
5.4. Suggestion for further Study.....	59
Reference .....	60
Questionnaires.....	67

## ACRONYMS AND ABBREVIATIONS

ARP	Automatic Replenishment Programs
DBU	Debre Berhan University
GDP	Gross Domestic Product
EOQ	Economic Order Quantity
ICT	Information Communication Technology
JIT	Just-in-time
MOFED	Ministry of Finance and Economic Development
ROI	Returns on investment
SC	Supply chain
VMI	Vendor Managed Inventory

## Abstract

*This research aims to assess factors affecting public procurement practice in the case of Debre Berhan University. In this study the researcher tries to see the correlation between the independent variable (procurement plan implementation, competency of staff, ICT adoption and operational procedures) and dependent variable (practice of public procurement which is on time delivery, the right quality, right quantity, right source, right price and the level of customer satisfaction). In order to get the required data both primary and secondary data source were used. The data gathering tool was questionnaire from 114 respondents of Debre Berhan University procurement staffs and staffs of university which benefit from procurement using self-administered questionnaire and the final response rate was 86.8%. The research design was descriptive (frequency, percentage, mean and standard deviation) and explanatory design (spearman's correlation coefficient and multiple linear regressions) analysis with the help of SPSS 20.0 software packages. The correlation result (0.874) shows there is strong correlation between outcome variable and predictor variable. The regression result ( $r^2 = 0.763$ ) also shows predictor variables explain public procurement practice and all predictor variables are significant and have high impact on procurement practice and the remaining factors which account 0.237 which were unexplored variable affect public procurement practice. The result of the finding shows in Debre Berhan university there were problems in procurement plan implementation, competence of staff, ICT adoption and operational procedures. Based on the findings the study concluded that public procurement practice strongly affected by procurement plan implementation, competence of staff, ICT adoption and operational procedures which lead to ineffectiveness of the public procurement practice and finally source of dissatisfaction for end user organizations. From the findings the following recommendations of the research were made: DBU should provide continuous training to procurement staffs to improve the skill and competence of staffs so as to make quality of procurement need plan and complex procurement, establish well organized and integrated ICT infrastructure, improve operational management of the system and make regular assessment about the effectiveness of the procurement system.*

**Keywords:** *Public Procurement practice, Debre Berhan University, Procurement Planning, Competency of Staff, Procurement Procedures, Utilization of Information Communication Technology*

## List of Tables

<b>TABLE3. 1 SAMPLE SIZE IN EACH SELECTED TEAMS</b> .....	<b>28</b>
<b>TABLE 4.1 RESPONSE RATE</b> .....	<b>32</b>
<b>TABLE4.2 SUMMARY OF THE PROFILE OF RESPONDENTS</b> .....	<b>33</b>
<b>TABLE4.3 PROCUREMENT PLAN IMPLEMENTATION</b> .....	<b>35</b>
<b>TABLE4.4 EMPLOYEE’S COMPETENCY</b> .....	<b>37</b>
<b>TABLE4.5 ICT ADOPTION</b> .....	<b>40</b>
<b>TABLE4.6 OPERATIONAL PROCEDURES</b> .....	<b>43</b>
<b>TABLE 4.7 EVALUATE PUBLIC PROCUREMENT PRACTICE RELATED QUESTIONS</b> .....	<b>44</b>
<b>TABLE4.8 TESTS OF NORMALITY FRAMEWORK AGREEMENT EFFECTIVENESS</b> .....	<b>47</b>
<b>TABLE 4.9 CORRELATION MATRIX TABLE</b> .....	<b>48</b>
<b>TABLE4.10 MULTICOLLINEARITY TEST</b> .....	<b>50</b>
<b>TABLE4.11 MODEL SUMMARY</b> .....	<b>51</b>
<b>TABLE4.12 ANALYSIS OF VARIANCE (ANOVA)</b> .....	<b>52</b>
<b>TABLE4.13 REGRESSION COEFFICIENTS</b> .....	<b>53</b>

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# **CHAPTER ONE**

## **INTRODUCTION**

This chapter would provide a background of the study, a statement of the problem, the purpose of the study, objectives of the study, research questions, and scope of the study as well as the background of the organization of the study

### **1.1 Background of the study**

Public procurement is the acquisition of goods and services at the best possible total cost of ownership, in the right quantity and quality, at the right time, in the right place and from the right source for the direct benefit or use of corporations, or individuals, generally by (contract Breitman & Lucas 1987).

Procurement encompasses the whole process of acquiring property and/or services. According to Waters (2004), it begins when an agency has identified a need and decided on its procurement requirement. Procurement continues through the processes of risk assessment, seeking and evaluating alternative solutions, contract award, delivery of and payment for the property and/or services and, where relevant, the ongoing management of a contract and consideration of options related to the contract. Procurement also extends to the ultimate disposal of property at the end of its useful life (Waters, 2004)

According to the Ethiopian Public Procurement Proclamation (No 649/2009), procurement means “obtaining goods, works, consultancy or other services through purchasing, hiring or obtaining by any other contractual means.” From the above definitions, the overall tasks of procurement are to obtain goods, works, consultancy services and other services at the right quality, in the right quantity, from the right sources, at the right time, place and price to achieve an organizational objective.

Public procurement is the acquisition of goods and services at the best possible total cost of ownership, in the right quantity and quality, at the right time, in the right place and from the right source for the direct benefit or use of corporations, or individuals, generally by contract (Breitman & Lucas, 1987).

Public procurement is a key tool to achieve maximum value for money in procurement i.e. insure economy, efficiency and effectiveness, support the country's economic development by ensuring economy, efficiency and effectiveness in the execution of public procurement, ensure accountability for decisions made and measures taken in the execution of public procurement, and encourage local producers, companies and small and micro-enterprises which support the national economy through the application of preferential treatment granted by the Proclamation and the directive issued on June 2010.

In Ethiopia, more than 60% percent of the total public expenditure has been spent through public procurement in a year. It is a significant amount of money that public bodies spent via public procurement. The expenditure on public procurement is increasing from year to year. Despite this, many reports show that the resource spent on public procurement is not used properly and in an economical manner and in the current Ethiopian public procurement process, the compliant on public procurement process shows increment from year to year. Efficiently and effectively handling this size of procurement outlay has been a policy and management concern as well as a challenge for government (PPA Annual Report 2017).

Different researchers found that the effectiveness of public procurement is affected by different factors. Some of them include inefficiency, nontransparent procurement processes, and lack of knowledge of rules and regulations (Roman, 2017). In addition, according to the findings of the study of Tariku (2017), the suppliers' performance execution, suppliers' capacity, public bodies' procurement plan & ICT utilization have also significant impact on effectiveness of centralized procurement system in the federal government organizations. These might be the major cause for the ineffective management of the procurement function which will lead to under-utilization of the budget by government organizations and delay of many development activities as all of us observe in many government organizations.

It is against this background that the study will to assess the factors affecting public procurement practice in Debre Birhan University and forwarding possible solutions.

## 1.2 Statement of the Problem

The present day's business environment is getting more challenging and therefore companies have to increase their business operations to stay competitive. As a result, managers need to embrace all those practices that will improve their performance one of the most important factors for improving business operations is implementation of effective and efficient procurement and supply chain management practices (Chong and Ooi, 2008).

Internal and external forces are influencing the ability to recognize the procurement goal. Relations among different internal elements like professionalism, staffing levels, budget resources, procurement plans and organizational structure whether centralized or decentralized, procurement regulations, rules, guidelines, and internal control policies. External factors also like market environment, political, socio economical, and legal environment have impact on the performance of the procurement function and needs consideration (Kim, M.K, Lopetcharat, & M. A., Drake 2013).

Banda (2009) stated that many organizations lack competent staffs with the proper knowledge for good procurement process management. He further noted that authorities should give greater emphasis for developing competence to adopt best practice more widely. According to Berger & Humphrey (2007), a procurement function that is carried out professionally is the core of delivery of any service on value for money principle. Furthermore, Sultana (2012) stated that in order to sustain economic growth and effective performance, it is important to optimize the contribution of employees to the aims and goals of the organizations.

An efficient public procurement system is very important to the development of countries and is a tangible implementation of their national commitments to making the best possible use of public scarce resources (Basheka, 2009). As per the organization for Social and Economic Development (OECD, 2010), on the average developing countries public procurement accounts for up to 15% of GDP and 20% of public expenditures. According to the 2014 Ethiopian Public Procurement and Property Administration Agency report (PPPAA, 2014), as cited by Tariku (2017), in Ethiopia more than 60% of the total public expenditure has been spent through public procurement in a year. It is a huge amount of money that public bodies spent via public

procurement of course needs to manage with due care. Therefore, public procurement is vital to government service delivery.

Despite lots of effort have been made by Ethiopian government to improve the procurement system, there are problems of effectiveness in public procurement. Some of the problems include a gap between what stakeholders need and what is actually performed, a lot of complaints since the quality of goods purchased doesn't fit with the specification, big gap between purchase request and delivery of items, quality problems and/or mismatch of items requested with procured and delivered (wrong quality); excessively delayed purchases (wrong timing); and incurring additional costs as result of long duration of the purchase process (Zegeye, 2015). Moreover, different project works are being affected due to the lack of effective procurement process, which is the main cause of insufficient service delivery in all public sectors (Anteneh, 2015). Different researchers found that the effectiveness of public procurement is affected by different factors. Some of them include inefficiency, nontransparent procurement processes, and lack of knowledge of rules and regulations (Roman, 2017).

Even though the above and other different researchers tried to study about the factors affecting public procurement practices, none of them has focused on study with reference to factors affecting practice of public procurement in Debre Birhan university. There is no study to indicate the assessment factors affecting public procurement practice with the case study. This gap initiates the researcher to study the issue. Thus, this study was design to bridge this gap by assess the factors affecting public procurement practice in Debre Birhan University.

### **1.3 Research Questions**

- To what extent does the procurement plan implementation affects procurement practice in Debre Birhan University?
- To what extent does the competency of staff influence the effectiveness of procurement practice in Debre Birhan University?
- To what extent the operational procedures affect the effectiveness of the public procurement practice in Debre Birhan University?

## **1.4 Objective of the study**

### **1.4.1 General objective**

The general objective of the study was to assess factors affecting public procurement practice in Debre Birhan University.

### **4.1.2 Specific Objectives**

Specifically, the study was aimed to achieve the under mentioned objectives

- To examine the extent to which procurement plan implementation affects effectiveness of procurement practices in Debre Birhan University.
- To examine the extent in which competency of staff influence the effectiveness of procurement practices in Debre Birhan University.
- To assess the effect of operational procedures on the effectiveness of the public procurement practice practices in Debre Birhan University.

## **1.5 Significance of the Study**

The intention of this study was to contribute to the existing body of knowledge about assessment factors affecting public procurement practices, to maximize the contribution of the procurement function of Debre Birhan University to the public objective. Moreover, the research's recommendation may will help to improve overall public procurement practices, this can have an immense advantage for different stakeholders; for the managers to make corrective actions and review the practices, for researchers to serve as a facilitator for further detail investigations, and particularly the study will contribute a lot to enhance the university performance.

## **1.6 Scope of the Study**

The focus of this research will to assess factors affecting public procurement practice in Debre Birhan University. The scope of the study was limited to procurement practice in Debre Birhan University. Though it was difficult to include all the campus areas because of infeasibility from resource and time perspectives, the focus of this study will only an assessment of public procurement practices survey on Debre Birhan University.

## **1.7 Organization of the Study**

The paper was organized in five chapters i.e. the first chapter includes an introduction section which consists of background of the study, statement of the problem, objectives, significance, scope, limitation of the study and ethical considerations. Chapter Two include: present review of related literature. Chapter Three: presents research design and methodology the researcher employs to investigate the problem under study while data collected from respondents are also presented, analyzed, interpreted and discuss in the fourth chapter of the study. The last section chapter five of the thesis will contain summary of results, concluding remarks and recommendations used for the corporation.

## **CHAPTER TWO**

### **RELATED LITERATURE REVIEW**

#### **Introduction**

This chapter presents the literature review for the research area; points related to purchasing activities are discussed. Definitions of purchasing management are presented which is the base for the study onwards. In addition to this, purchasing process is provided.

#### **2.1 Theoretical Review**

##### **2.1.1 Definitions and concepts**

Van Weele (2006) define an organization's purchasing activity as the decision-making process by which formal organizations establish the need for products, identify, evaluate and choose among alternative brands and suppliers.

When we analyze the buying process we have to take into consideration what the procurement function includes. It is really important to have a clear definition and, by doing so, to understand the role of the sourcing in the procurement function. As we can see from Van Weele (2006) sourcing is in the tactical part of the purchasing and procurement process. According to Van Weele (2006) the purchasing function covers activities aimed at determining the purchasing specifications based upon fitness for use, selecting the best possible supplier and developing procedures and routines to be able to do so, preparing and conducting negotiations with suppliers in order to establish an agreement and to write up the legal contract, placing the order with the selected supplier or to develop efficient purchase order and handling routines, monitoring and control of the order to secure supply (expediting), follow up and evaluation.

In order to understand these activities of the sourcing process it is better to offer the reader this clear explanation from Van Weele (2006):

- Determining the purchasing specifications (in terms of required quality and quantities) of the goods and services that need to be bought. In the case of the case company we have to keep in mind that goods and service are bought for a third party; the business customer for his stores.

- Selecting the best possible supplier and developing procedures and routines.
- Preparing and conducting negotiations with the supplier in order to establish an agreement and to write up the legal contract.
- Placing the order with selected supplier and develop efficient purchase order routines.
- Monitoring and control of the order secure supply.
- Follow up and evaluation (supplier rating and ranking).

Van Weele defines this activity “expediting” as following up on a purchase order to make sure that the supplier is going to perform as it has confirmed through his purchase order confirmation.

As stated from these first definitions the purchasing function does not include the responsibility for the materials requirements planning, materials scheduling, inventory management, incoming inspection and quality control.

The purchasing process is used to identify user requirements, evaluate the user needs effectively and efficiently, identify suppliers who can meet that need, develop agreements with those suppliers, develop the ordering mechanism, ensure payment occurs promptly, ascertain that the need was effectively met, and drive continuous improvement. In every step of this process, managers are challenged to ensure that internal users are satisfied both with process and the outcome, Baily, et al., (2005).

### 2.1.2 The role and the scope of purchasing

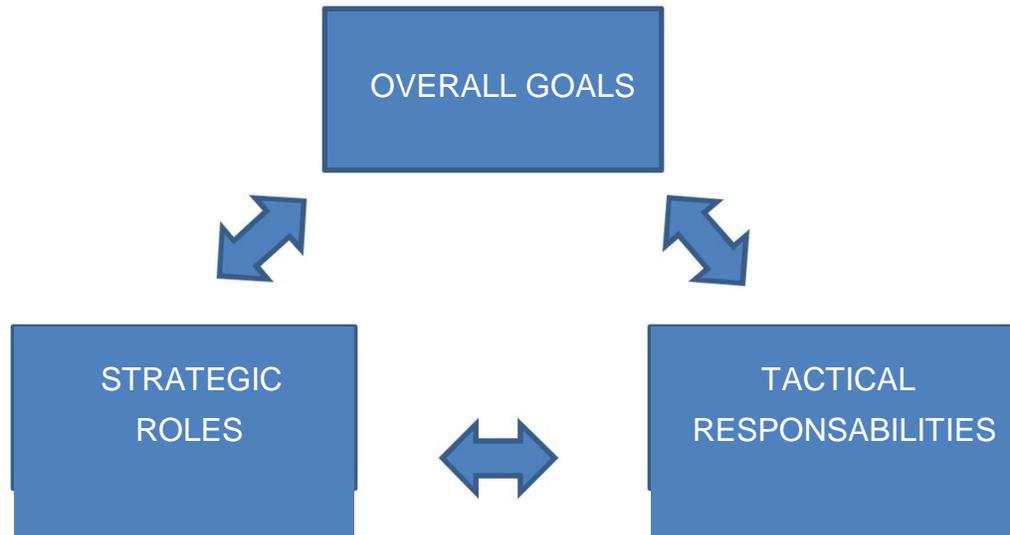


Figure 1. The purchasing role adapted from Baily, et al., (1994).

To understand the role and responsibilities of the purchasing it starts with the primary objectives. According to Monczka et al. (2008) they are divided in three categories:

- i. Overall goals
- ii. Tactical responsibilities
- iii. Strategic roles

**Overall goals include:** supply continuity, manage purchasing process, supply base management, engage Stakeholders, and develop sourcing strategies.

**Tactical responsibilities include:** forecast and plan requirements requisitioning, supplier identification and selection, control/PO preparation, receipt and inspection, invoice settlement and payment, records maintenance, measuring supplier performance, improving P2P (procure-to-pay) process.

**Strategic roles include:** demand management, commodity strategies, contract management, cost management, procure management, procure to pay improvement, supplier relationship management.

Monczka et al. (2008) states that purchasing management has limited resources available to manage the purchasing process and must continuously work toward improved utilization of these resources. Limited resources include employees, working within the department, budgeted funds, time, information, and knowledge. Organizations are therefore constantly looking for people who have develop skills necessary to deal with the wide variety of tasks faced by purchasing.

In the past the „dogma“ for every buyer was to acquire the right quality of material, at the right time, in the right quantity, from the right source, at the right price. This simple statement does not take into consideration some measurable objectives and how the business environment has changed in our opinion. Furthermore, it does not take into consideration the customers“ needs as the primary source of information for the buyers.

The following broad statements about the overall purchasing objectives are suggested by Peter Baily (2005):

- To supply the organization with a flow of materials and services to meet its needs.
- To ensure continuity of supply by maintaining effective relationships with existing sources and by developing other sources of supply either as alternatives or meet emerging or planned needs.
- To buy efficiently and wisely, obtaining by any ethical means the best value for every pound spent.
- To maintain sound co-operative relationships with other departments, providing information and advice as necessary to ensure the effective operation of the organization as a whole.
- To develop staff, policies, procedures and organization to ensure the achievement of these objectives.

In addition, we share some even more specific objectives from Baily that also sourcing managers have to keep in mind:

- To select the best suppliers in the market.
- To help generate the effective development of the new products.
- To protect the company's cost structure.
- To maintain the correct quality/value balance.
- To monitor supply market trends.
- To negotiate effectively in order to work with suppliers who will seek mutual benefit through economically superior performance.
- To adopt environmentally responsible supply management.

Colin Coulson and Thomas (2008) lists the importance of the purchasing strategy by dividing companies between winners and losers accordingly to their approaches. We believe it is a smart approach for the reader to understand the role of the procurement inside organizations. Losers tend to view purchasing as an administrative activity of relatively low status that is sometimes a source of both management and quality problems. For winners purchasing is a source of competitive advantage. They work with their suppliers to reduce costs, innovate, and improve quality or speed up deliveries. Involving purchasing and preferred suppliers earlier in the new product development process can often reduce the time required to bring new products to market by a quarter or more. Colin Coulson and Thomas, (2008).

Nowadays the purchasing function is becoming more and more strategic for the success of the company. The purchasing function has gained great importance in the supply chain management due to factors such as globalization, increased value added in supply, and accelerated technological change. Baily, et al., (1994).

Innovation plays also a strong role in the purchasing function. The pace of change has quickened over the years. Organizations must be able to develop new practice and products quickly and effectively. This turn requires significant improvements in the internal interface between purchasing on the one hand and production, marketing, finance and so on the other, as well as with external suppliers and customers. Purchasing must be prepared to help and initiate new ideas and developments, Peter B and et al, (2005).

In order to develop strategic sourcing, the traditional purchasing function cannot cope with new the requirements and a fast paced supply chain. The role of purchasing has changed its nature. Old perception is based on the idea that purchasing is concerned with simple exchanges, with buyer and seller interacting with each other on arm's length basis. The underlying interest of the buyer in this rather simple scenario is to acquire as much resource as possible for as little money as it is necessary to pay, Peter B and et al, (2005).

Purchasing in its broadest sense is increasingly recognized as a strategic issue, since insourcing and outsourcing decisions have a crucial influence on an organization's success Carr and Pearson, (2002).

According to the author Peter Baily a new way to add value in the supply chain, and more precisely in the purchasing process, is to develop mutual supplier-buyer relationships, where the benefits of doing business together arise from ideas of sharing as well as exchanging. The steps in the process may vary in different organizations, depending on the nature of the purchased item. New items may require more time upfront whereas repeat items usually already have approved sources. The purchasing process can be divided into two parts: the preorder and post order process. We present in the picture below the pre-order process which it is useful for this research C. Scott et al., (2011).

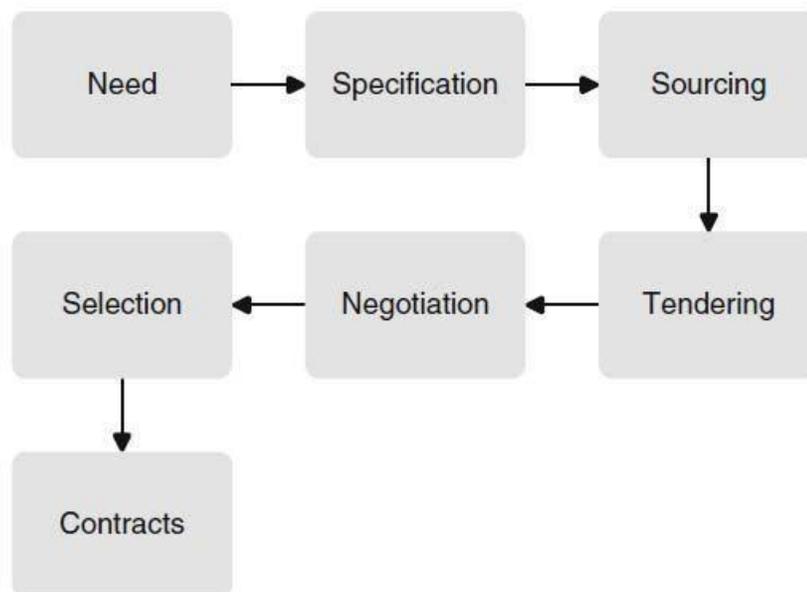


Figure 2. (Source). The Pre-order process C. Scott et al., (2011)

### **2.1.3. Public procurement**

Public procurement is the process of the acquisition, usually by means of a contractual arrangement after public competition, of goods, services, works and other supplies by the public entity. The public procurement process spans the whole life cycle from initial conception and definition of the needs through to the end of the useful life of an asset or the end of a contract. The Federal Democratic Republic of Ethiopia, Public Procurement and Property Administration Agency (2011). Then again, Baily and et al (2005) identified proposals for the public [procurement] sector includes; Seeking to develop world class professional procurement staff, seeking to introduce best practice in terms of whole-life cost savings, highest standard benchmarking, Co-operative relationship with contractors and supplies within the constraints of competition, the promotion of continuous improvement (Kaizen).

According to Mamiro (2010), public procurement process stretches from procurement planning, budget allocation, bid invitation, bid evaluation, contract award, and contract management. It ranges from the purchase of routine supplies or services to formal tendering and placing contracts for large infrastructure projects by a wide and diverse range of contracting authorities. Public purchases are accountable to the public, whose money is spent, including disappointed tenderers and potential suppliers. As such, they must produce procedures and practices which will stand up to scrutiny during either government audits or challenge through the courts of any purchasing decision that has not been made procedurally. The primary purpose of public accountability is to prevent abuses of taxpayer's money (Patrick, Mamati & Jonathan, 2010).

### **2.1.4 Principles of Public Procurement System**

Public procurement system is based on the four suggested basic principles of maximizing economy and efficiency; promoting competition and encouraging maximum participation by suppliers, contractors and consultants; fair and equitable treatment of all suppliers, service providers and contractors; encouraging national manufacturing, contracting and service industries; integrity, and achieving transparency and accountability in the procurement process. (World Bank, 2000)

### **A. Maximizing economy and efficiency**

Public procurement is concerned with purchasing of goods/services to the required quality of intended purpose in the required time and at the right price (Arrowsmith, 2010). In other words, it is termed as value for money. The principle of economy and efficiency requires the usage of funds allocated in way that envisaged goals will be attained while on the other side achieving desired results on the procurement process with minimum resources involved. Broadly, the term value for money is concerned with the economy, effectiveness and efficiency of a product, work or service in the procurement process (Mamiro, 2010). In general terms, economy takes into consideration factors such as sustainability, quality, and non-price attributes and/or life cycle cost as appropriate that support value for money. Efficiency refers to maximizing the output for a given level of input, and effectiveness refers to actual outcomes compared to intended outcomes (Khan, 2018).

### **B. Promoting and encouraging competition**

In public procurement there is promoting and encouraging competition among eligible suppliers, contractors or service providers in acquisition of goods, works and services by procuring entities provides better value in terms of lower price and acceptable quality in the procurement process (EPC, 2007). This principle plays the role of minimizing opportunities for corruption and collusive activities through the elimination of environment that do not allow many eligible suppliers or contractors to participate in public procurement offerings (GOJ, 2010). The issue of selecting procurement method and setting requirements on particular tender has to be guided by this principle. The type of procurement method selected has repercussion on the effectiveness and efficiency of the procurement process.

### **C. Ensuring fairness and equity**

Fairness and equity is attained by procurement entities through taking into account the best interests of a public authority, in giving all eligible suppliers, contractors and service providers' equal opportunities to compete in providing goods or executing works or providing services (PPA, 2004). It requires that comparable situations should not be treated differently and that different situations are not treated similarly otherwise the differences or similarity in treatment can be justified objectively (Weller et al, 2011). All payments due to suppliers, contractors or service providers are made promptly in accordance with terms of the procurement contract so as to maintain credibility and creditworthiness of a public authority.

In the time where not suppliers or contractors not paid on time interests must be charged for compensation of loss of value and the same be applied to suppliers or contractors delaying delivery of works or goods by imposing liquidated damages.

#### **D. Integrity, accountability, and transparency**

The principle of integrity requires that the procurement process is honest and in compliance with the respective laws, regulations and guidelines that the best available, most suitable technical expertise is employed in a nondiscriminatory manner, fair and open competition resulting to a quality product, service or works execution at fair price that take into consideration of expected goals by procuring entity and the public at large (Wiehen & Olaya, 2006). The procurement has to be carried out without any influence of corruption which can be in the form of bribes, personal interests, political reasons or any other grounds favoring one firm to be awarded the contract (Arrowsmith et al, 2010). Lack of integrity in the procurement process, prevents public entities in achieving value for money and results to delay of the procurement process due to delayed decision and complaints which may be lodged by suppliers, contractors or service providers involved on the particular procurement.

For procurement to achieve its goals, integrity needs to be exercised through professionalism in undertaking procurement proceedings. Professionalism is a discipline whereby educated, experienced and responsible procurement officers make informed decisions regarding procurement operations (Sarfo, 2011). Accountability is defined as situation where the government or procurement entities and individual officials on the one hand and suppliers, contractors or service providers on the other hand must be accountable for the correct and complete execution of their tasks and duties and the decisions and actions being made in their areas of responsibility. The records explaining and justifying all decisions and actions made should be created and archived (Wiehen & Olaya, 2006).

For effective public procurement system, there is a need of ensuring competition and equal access, probity, and accountability by making the public procurement processes as transparent as possible, requiring the public disclosure of all relevant information (Jones, 2007). The principle of transparency is concerned with the legality, openness and publicity of public procurement awarding procedures adopted by procurement entity. Timely and proper notices of procurement processes carried out as well as equal criteria and conditions known in advance and providing a room for accessing information on procurement proceedings

contribute to attainment of transparency (Mlinga, 2008). The transparency principle requires that information regarding the procurement process be in the public domain. Potential suppliers of property and services should have full access to information on the procurement requirements, rules and decision making criteria. Bids are opened publicly and award decisions are published (RTT, 2005).

### **2.1.5. Procurement Methods**

The Federal Democratic Republic of Ethiopia, Public Procurement and Property Administration Agency (MoFED 2011) by quoting Proclamation Article 33: defines six methods of public procurement these are bidding, two stage bidding, request for quotation, and request for proposal, restricted bidding, and direct procurement. As this research is mainly focused on the first method or the Bidding method, this method is described below.

The Federal Negarit Gazeta (2005) states that except as otherwise provided in this Proclamation, the procuring entity shall use open bidding as the preferred procedure of procurement. Even though it is common that each method has its own advantage and drawback, the Ethiopian government prefers the bid way of purchasing especially; open bidding way to perceive the advantage gained by such method.

Bidding (Tendering) According to Lysons and Farrington (2006) a purchasing procedure whereby potential suppliers are invited to make a firm and unequivocal offer of the price and terms on which they will supply specified goods or services, which, on acceptance, shall be the basis of a subsequent contract. Alternatively, Lewis (2005) elaborate as a formal written offer to undertake work or provide services for a stated price is called tender

#### **2.1.5.1 Types of bid**

According to Lysons and Farrington (2006,) tender are alienated in to the following ways:

- **Open Tender**

Prospective supplier is invited to compete for a contract advertised in the press or on the internet- the lowest tender generally being accepted, although the advertisers usually state that they are not bound to accept the lowest or any tender. Similarly, the Federal Democratic Republic of

Ethiopia, Public Procurement and Property Administration Agency (2011) states that all interested firm's bidders are given adequate notification of contract requirements and all eligible bidders are given an equal opportunity to submit a tender. The public body must give sufficient public notification of bidding opportunities to potential bidders to determine their interest and prepare bid documents.

- **Selective Tender**

Tenders invited from supplier on an approved list that have been previously vetted regarding their competence and financial standing. Serial Tenders: Prospective suppliers are requested on either an open or a selective basis tender for an initial scheme on the basis that, subject to satisfactory performance and unforeseen financial contingencies, a program of work will be given to the successful contractor, the rates and prices for the first job being the basis for the rest program.

- **Negotiated tender**

A tender is negotiated with only one supplier so that competition is eliminated. This type of contract is usual. In case of local authority, it would require the waiving of standard order. Thus, generally the Ethiopian government adopts only the two methods of tendering; open and restricted/selected Tendering

## **2.1.6 Factors Affecting Procurement Structure**

The factors that influence the selection of procurement structure divided into contingency theory, information and power, and procurement related factors.

### **2.1.6.1 Contingency theory**

According to van Weele (2005), Procurement structure is very much dependent on organization distinctiveness and situational factors. One of the core lessons of the contingency theory is that there is no single optimal way to structure organizations rather it is dependent on some distinctiveness of the organizations situation (Carlisle, 1974). According to this theory, there is no organizational structure that is most effective for all organizations (Karlsen & Tollefsen, 2009). It is paramount that organizations all structure that is contingent to its situation. This situation can influence the selection of the organizational structure as it can be affected by a

number of contingency factors. A number of contingency factors include are task uncertainty, technology, environmental change, technological change, size and strategy. Donaldson (2001) reduced the factors to size, task uncertainty and task interdependence (Karlsen & Tollefsen, 2009).

The size is related to the number of employees of the organization. The size as contingency factor affects the organizational structure in some way. When an organization has a small number of members, the top manager has capacity and enough overview of the organization and the decision authority rest entirely on him/her. As a result, simple centralized structure is satisfactory. But as the organizations grow this simple structure is replaced by a bureaucracy featuring a tall to bottom extensive specialization. So, this situation makes decentralized system close to necessity. The internal structural complexity and length of hierarchy of centralized system makes it infeasible (Donaldson, 1999). The task uncertainty is caused by environment and technological changes. Task with low uncertainty is most efficiently performed in a centralized operational system. This is because it allows efficient planning and coordination. For high task uncertainty companies can rely more on ad hoc solutions (Karlsen & Tollefsen, 2009).

Firm should reduce formalization and have more decentralized structure. The task interdependence is referred to the activities of the organization in relation to different sub units that are connected to each other. The divisional structure according to Donaldson (2001) is a decentralized structure. This is because central division cannot coordinate the interdependent activities. Nevertheless, the higher the task interdependence, the more centralized the coordination (Donaldson, 2001). Donaldson (1999) stated that the characteristics of the task interdependence reflect the influence of the environment in which the organization is located. In line with this, organizations need to fit to the characteristics of the environment in which it is located.

#### **2.1.6.2 Information and Power Related Factors**

The relationship between a principal (e.g. centralized headquarter) and an agent (e.g. division or business unit) may influence the choice of organizational structure. According to Carlisle (1974), one of the advantages with a decentralized structure is that people are more productive when they have more freedom and control over their jobs. However, with a decentralized

structure, there is a risk of “individuals who does not accept the organizations goals” which would alter some of the advantages of a decentralized structure. Vagstad (2000) argued that the choice of organizational structure should be determined by the trade-off between two important factors: bureaucracy cost and agency cost. The logic is that a centralized structure is costly and often not very efficient due to bureaucracy costs; costs that are related to the fixed costs of the daily operation of the department. At the same time, costs related to decentralized structure may be agency costs; costs that arise as a result of conflicting objectives between the principal and the agent. Hence, when the bureaucracy costs are lower than the potential agency costs, a centralized structure may be favored, while a decentralized structure may be favored when the potential agency costs is lower than the bureaucracy costs.

### **2.1.6.3 Procurement Related Factors**

Different types of procurement situations are said to have different demands on the procurement structure (Gadde & Håkansson, 2001). Several purchasing related factors affect the decision of centralization or decentralization. Several authors mention product type as a central factor affecting procurement structure and procurement strategy (van Weele, 2005). High volume products with a predictable usage pattern calls for centralization, in order to reap cost benefits of aggregated purchase whereas products possessing some specific characteristics should be handled in a decentralized procurement department (Corey, 1978). These products and characteristics of specific products include: standard products with need for local service that are ordered in small amounts and subject to unpredictable usage pattern and immediate need, products that are subject to high engineering involvement, products with high need for coordination of the purchased parts with production schedules, and products with unique use requirements.

A model developed by Peter Kraljic (1983) classifies four different product types: Non-critical items, leverage items, bottleneck items and strategic items. According to Kraljic (1983), noncritical items may be handled at a decentralized level, due to the low strategic importance and the low supply market complexity while a centralized approach may be favorable in order to achieve economies of scale, due to standardized products. Leverage items may be handled at both a decentralized level and centralized level. A decentralized level is favorable due to the low complexity of the market, while a centralized approach is favorable in order to strengthen

and to exploit the purchasing power. Bottleneck products may be handled at a decentralized level, but there is a need for centralized coordination in order to ensure supply of products that are subject to production scarcity. Strategic items should be handled at a centralized level to ensure supply of products that are of high strategic importance and are subject to market complexity. Geographical location is another important factor affecting whether to centralize procurement or not. International negotiations may call for special knowledge and skills, which may be difficult to handle by a decentralized organization. Thus it should be handled at a centralized level in the organization (Corey, 1978). On the other hand, it may be difficult to achieve efficient coordination across international and cultural borders.

As a consequence, many firms are utilizing a decentralized structure (Van Weele, 2005). The greater the commonality of the products being purchased, the more benefits can be obtained by having a centralized structure (van Weele, 2005). Supply market characteristics are another important factor in relation to the structure of purchasing strategies. When the supply market is characterized by one or a limited number of suppliers, which often give the supplier an advantage due to strong bargaining power, it may be necessary to utilize a centralized procurement or purchasing function in order to achieve a better negotiation position (van Weele, 2005). The other relevant factor that affect in deciding on the procurement structure is saving. By utilizing a centralized procurement function one is able to accumulate the quantity in order to reap savings potential (van Weele, 2005). Aggregating procurement activities through centralization may be an effective way of achieving large cost savings, especially related to standardized parts, supply items and non-product purchases (Corey, 1978). The expertise required and the efficient use of personnel may also affect the organizational structure (van Weele, 2005). When specific expertise is required for effective buying, it may be useful to have a centralized purchasing approach, since it may be difficult to provide the necessary expertise in several decentralized departments. Centralization improves the efficient use of scarce managerial resources (Corey, 1978).

The other factor that affects the structure of the purchasing function is price fluctuations and political climate. If material prices are highly sensitive to the political and economic climate, a centralized procurement approach may be efficient (Van Weele, 2005). A centralized approach may be favorable in coping with shortages of supply as a consequence of political and

governmental regulations. This is due to the fact that a centralized procurement function may identify alternative sources of supply, negotiate contracts, and allocate the resources within the organization (Corey, 1978). In situations where the customers dictate which products should be purchased, a centralized approach will not be needed because it will not be possible to reap any procurement synergies across the entire organization, as long as there are strong local restrictions on what needs to be purchased (van Weele, 2005). In general, several factors might affect the choice of purchasing structure. However, there is not a clear-cut decision between centralization and decentralization, and in most cases, companies rely on a combination of both; companies usually “try to reap the benefits of one organizational form and then minimize its corresponding disadvantages” (Gadde & Håkansson, 2001).

### **2.1.7 Factors Affecting Public Procurement Effectiveness**

**Procurement plan implementation-** Procurement planning is one of the primary functions of procurement with a potential to contribute to the success of public institution’s operations and improved service delivery (Basheka, 2008). Procurement Planning entails the identification of what needs to be procured, how the organizations need can best be met, the scope of the goods, works or services required, what procurement strategies or methods to be deployed, setting the time frames, and the accountability for the full procurement process.

To accomplish the organization’s objectives, the most important tool is effective procurement plan. Procurement plan that aligns to the objective of the organization programs and budgetary process can expedite the accomplishment of the goals. It is one of the pre-requisites for the effectiveness and efficiency of the procurement function, thus leading to the ultimate success of the organization. (Namusonge et al., 2013) Effective procurement planning enables the organization and its staff to work smoothly to achieve the organization’s goals with the right quality and quantity of inputs in place while ineffective procurement planning may result in failure to achieve those goals, and causing damage to the credibility of the organization (UN, 2006). ii. Employee’s competence- Saunders (1997) believed that successful functioning of organizational structures and effective operation of planning control systems is dependent on the quality and ability of staff employed. Multi-skilling provides employees with a variety of skills and should be developed extensively.

Leenders and Fearon (2002) noted that the large number of items, huge monetary volume involved, need for an audit trail, severe consequences of poor performance, and the potential contribution to effective organizational operations associated with the procurement function are five major reasons for developing a sound, professionally managed procurement system. They further argue that qualifications are crucial for value-based management which requires employees to assess and improve processes while contributing to team performance. In addition, qualifications enhance staff ability to perform, enabling them to make better decisions, work as a team, and adapt to change, while increasing efficiency, quality, productivity and job satisfaction.

**ICT adoption-** Saunders (1997) reckoned that personnel in procurement are, in a sense, information processors. They receive, analyze, make decisions and distribute information in order to manage the flow of goods and services in the SC. ICT is an enabler for information sharing which organizations in the procurement system can use for eliminating bloated inventory levels caused by cumulative effect of poor information cascading up through a SC. ICT shortens information processing time and tremendously improves procurement performance. Process integration can enhance procurement performance. ICT provides new ways to store, process, distribute and exchange key information with customers and suppliers in the entire procurement system.

Use of ICT in procurement help in coordination of business processes, both within the organization and between a purchaser and existing suppliers. Examples include electronic purchase-order systems, online catalogues and online linkages with suppliers to exchange information regarding fulfillment activities (Johnson & Leenders,2004). Managers are attracted to the benefits of improved productivity, faster response times and an overall perception of low risk in implementation (Flynn, 2003). Technological developments in information systems and information technologies have the potential to facilitate coordination in transporting firms, and this, in turn, allows the virtual integration of the entire procurement process. Technology provides tools to enable organization operations to consistently procure the best-value materials and services, using unified internet-based sourcing tools and streamlined support for complex negotiations (Williams, 2005).

**Operational procedures/management-** Procedures are operating instructions detailing functional duties or tasks. According to Saunders (1997), Public ownership imposes obligations with regard to public accountability, leading to prescribed procedures and policies. All steps of the procurement cycle must be properly documented with each step being approved by the designated authority. Baily, Farmer, Jessop and Jones (2005) argued that public procurement procedures tend to be characterized by high levels of bureaucracy independent of order value; poor communications and focusing on unit price rather than long-term relations. Procurement perceptions are affected by the existing organizational structure, quality of internal communication system, past experience and resources available.

A procurement policy may define the approval process for contracts of varying cost levels and may include role of purchasing, conduct of procurement staff, buyer-seller relationships, and operational issues. Without elaborate and effective procurement procedures government policy objectives would fail to meet the desired objectives.

## **2.2 Review of Empirical Studies**

There have been several studies which have been conducted to assess factors affect public procurement practice. In a study made by Roos (2012) showed that, public procurement in the EU, for example, is governed by a set of guiding principles such as best value for money and fairness coupled with an overall policy framework designed to open up the EU's public procurement market to competition within the Union. Policy discussions concerning sustainable public procurement have a predominantly environmental character. There is a considerable variation both in the extent to which EU member countries have developed and implemented a national policy and in the character and focus of existing policy frameworks.

Roman(2017) in her study to assess the regulatory framework, practices and challenges of public procurement in selected public organizations in Ethiopia has investigated some public procurement performances were found to be noncompliance with the public procurement rules and regulations. The cause for this is inefficiency, nontransparent procurement processes, and lack of knowledge of rules and regulations. Hence, it needs commitment from responsible government authorities to improve those specific areas of deficiencies' in public procurement practice and resolve challenge for sound public procurement practice. Sofoneyas (2016) in his master thesis entitled with "The Impact of Organizational Structure on the Implementation of

Public Procurements Policy: The Case of Public Procurements Units in Some Selected Public Organizations of the Federal Government” has tried to examine the impact of organizational structure on administrative efficiency in the case of some selected public organizations of the federal government. He found that administrative structure has significant positive correlation and impact on implementation of policy of public procurement (administrative efficiency). But, FPPA structure has not strong appeals mechanism for complaints and procedures to enforce the outcome of the dispute resolution process, FPPA structure is not evaluated procurement plan performance and carry out annual procurement audits in all entities, procurement performance audits carried out by FPPA is limited, promoting a whistle blowing as an administrative culture is weak, a federal complaints board which is not independent of the FPPA, the public procurement compliance is not enhanced by media. These hinder administrative efficiency of the public procurement units.

A study conducted by Abdul-Aziz, (2013) with the objectives of identifying the extent to which sustainable public procurement practices have been implemented, drivers for SPP and the challenges facing the implementation of sustainable procurement in an effort to contribute towards implementation of SPP practices in the public sector of Ghana. According to this research finding, lack of budget for internal and external support , lack of metric (KPI) to measure and monitor progress, high prices of green products, unavailability of green products from local markets, lack of support from top management, resistances from the supplier, lack of relevant legislation and legal enforcement, , lack of internal expertise, on sustainable topics, contradictory objectives and lack of information on supplier corporate social responsibility practices are some of the challenges reflected in this study.

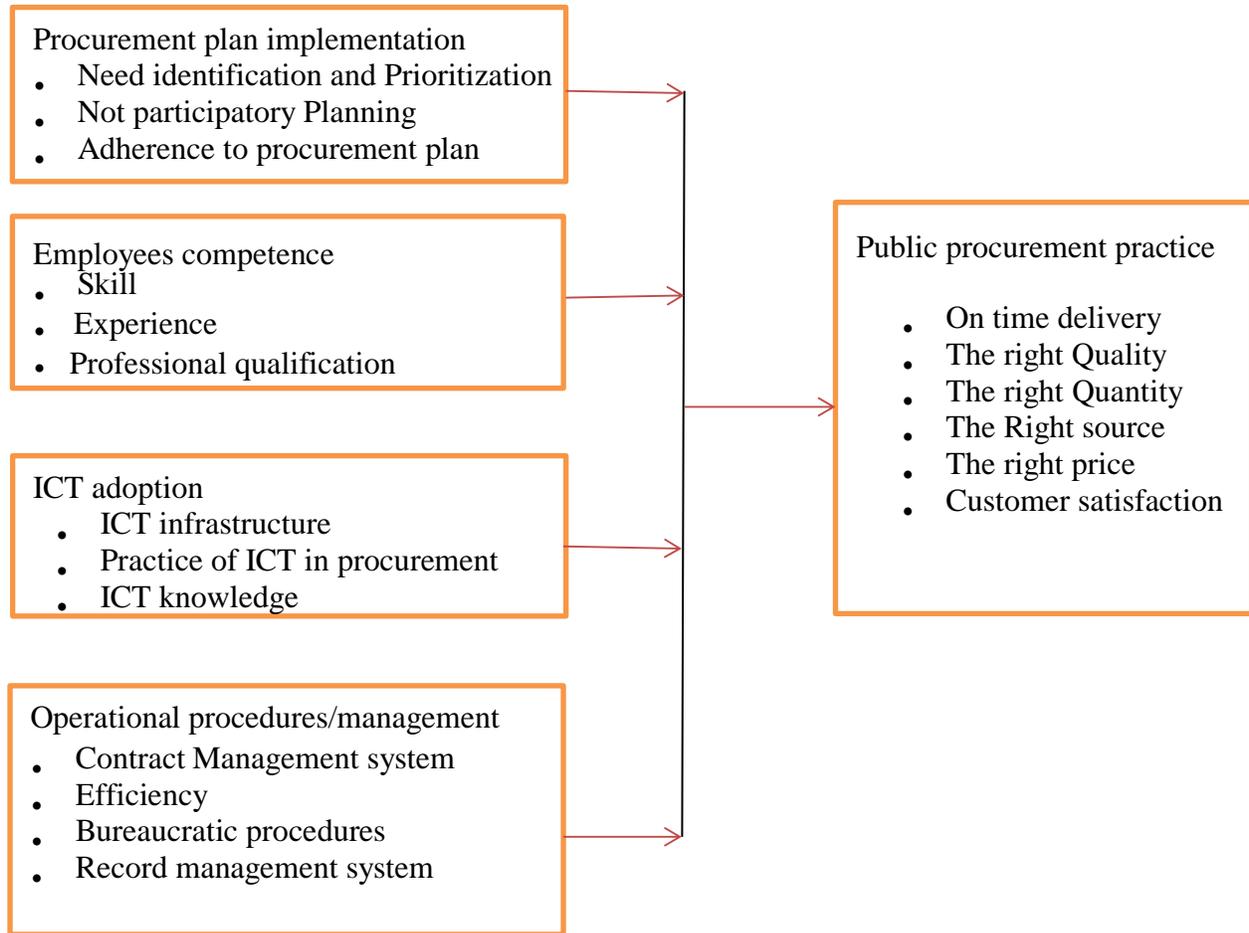
### **2.3 Conceptual Framework**

The conceptual framework indicates the crucial process, which is useful to show the direction of the study.

Public procurement practice can be measured on different parameters. Some of the parameters to be used in assessing the effectiveness of the procurement practice include on time delivery, satisfied customers, right price, quality and quantity goods, and service and works. The researcher takes these for dependent variables. On the other hand, the independent variables that affecting public procurement system to be evaluated includes the procurement plan

implementation, employee's competence, ICT adoption and operational procedures/management. The conceptual framework is summarized as follows;

Figure2. 1 Conceptual Framework



Source: Japheth Ocharo Kiage, (2013) with some modification

## **CHAPTER THREE**

### **METHODS OF THE STUDY**

#### **3.1 Introduction**

Methodology is the framework within which the study is conducted or the foundation upon which the research is based (Brown, 2006). The third chapter describes how the research will conduct, it reveals the research approach, data collection methods, sampling methods and the data collection process, review of statistical tools and how the data will analyze.

#### **3.2 Research Design**

The research design adopted by the researcher should answer the questions the study is seeking to answer or the objectives the researcher seeks to achieve by conducting the study (Mundia et al., 2015). The study will adopt descriptive research design. It determines and reports the way things are in describing the possible behavior, attitude, values and characteristics of the respondents it will use questionnaires and in depth interview as the appropriate tool.

#### **3.3 Research Approach**

The research will adopt mixed approaches which (qualitative and quantitative approach) which is often the best way of handling research questions through triangulation (Russel, 2005 cited in Ahmed, 2005). The study will believe that both qualitative and quantitative approaches can contribute greater to the completeness of the investigation at hand.

Mixed research is useful to capture the best of both qualitative and quantitative approaches and the draw back in one approach will be fulfilled by the other approach. The quantitative approach involves the generation of data in quantitative form which can be subjected to rigorous quantitative analysis. Qualitative approach to research is concerned with subjective assessment of attitudes, opinions and behavior (Kothari, 2004).

#### **3.4 Population and Sampling Techniques**

##### **3.4.1 Target Population**

Population refers to the full set of cases from which a sample is taken (Saunders, 2009). It refers to the larger group from which individuals are selected to participate in a study. The population

of this research was 189 employees which are directly or indirectly involved in procurement process and contract administration of Debre Berhan University which are included President offices and procurement and asset administration directorate that benefited from Public procuring goods and services.

### 3.4.2 Sampling frame

The sample frame of this study were procurement teams, emergency procurement teams, experts and managements in procurement and contract management directorate of Debre Berhan University. As of January, 2021, Census the university has 189 employees which are directly or indirectly involved in procurement process and contract administration.

### 3.4.3 Sampling technique

The sampling technique used for this research is both probability and non- probability sampling technique. To determine the sample size of respondents, the researcher has employed cluster sampling and lottery method. The University were clustered in to 3 teams based on their organizational arrangements. From each cluster all teams were selected. Then, proportional quota sampling method has been employed to determine the number of respondents from each selected team. The number of respondents from each selected team was obtained by calculating the number of staff divided by total sample size and multiplied the result by hundred has gave the number of respondents from the teams.

The researcher took sampling technique by determining the sample proportion success and not success based on the experience from previous survey research response rate. According to Patrick (2003), the return or success rate 50% is adequate, 60% response rate is good and 70% rate or higher is very good. The researcher used for this study was 75% response rate and remaining 25% non-response rate, and sample size was determining at 95% confidence level.

Sample size is calculated based on below formula (Kothari, 2004);

$$n = \frac{z^2 \cdot p \cdot q \cdot N}{e^2 (N - 1) + z^2 \cdot p \cdot q}$$

Where, p = proportion of success =  
75%            q = proportion of fail =  
25%

n = sample size,

z = confidence level = 1.96

e = standard error = 5%

N= total population = 189

$$n = (1.96^2(0.75)(0.25)(189)) / (0.05^2(189 - 1) + 1.96^2 * (0.75)(0.25))$$

n= 114 respondents.

This sample size was distributed for each selected teams by using simple proportional calculations.

Table3. 1 Sample size in each selected Teams

No.	DBU Structure Offices	Selected Teams	Number of Staffs	Sample size
1	President office	Staff of president office	26	16
2	Procurement and asset administration directorate	Procurement group	22	14
3	Procurement and asset administration directorate	Emergency procurement group	19	13
4	Procurement and asset administration directorate	facility administration group	39	24
5	Staff of DBU	Different professional of DBU	83	47
	Total target population		189	114

### 3.5 Data Source

To obtain reliable data the researcher was used both primary and secondary data. The primary data for research paper were collected from employees, supervisors and manager of the target units and the secondary data were also collect from written materials related with the study title.

### **3.5.1 Data collection tools**

There are two kinds of data for the research to be undertaken, primary and secondary data. Primary data was collected using quantitative data collection methods from structured questionnaires while the secondary data could be gathered from government procurement proclamation, procurement directives and manuals, website, procurement bidding document, and public procurement agency report, article journals and books. For this research primary data was collected from 99 respondents working in the procurement department of the university and staffs that benefit from the procurement practice work in the university. This was considered appropriate because of their knowledge and experience concerning procurement practice allows finding the real data. The questionnaires are prepared in English because the target area populations are both professional employees to understand the subject matter.

### **3.5.2 Data collection procedure**

The data collection instrument, for collecting the primary quantitative data will use a self-developed questionnaire containing self-assessment items measured on the 5-point Likert type of scale strongly disagree, disagree, neutral, agree, strongly agree and qualitative data collect through open-ended questions questionnaires are distribute to all staffs of procurement and logistics unit working in university. In order to avoid confusion and to make the administration ease, a close follow up will maintain during filling up of the questionnaire.

### **3.6 Reliability and Validity testing**

The two most important and fundamental characteristics of any measurement procedure are reliability and validity. Patton (2002) argue that validity and reliability are two factors which any quantitative researcher should be concerned about while designing a study, analyzing results and judging the quality of the study.

#### **Validity**

Validity is referring to the extent to which a measurement procedure actually measures what it is intended to measure rather than measuring something else, or nothing at all. The researcher considers three type of validity. Construct Validity is the extent to which a measuring instrument provides adequate coverage of the topic under the study. Its determination is primarily

judgmental and intuitive. Second, Criterion related validity is the ability to predict some outcome or estimate the existence of some current condition. Third, Construct validity is the degree to which scores on the test can be accounted for by the explanatory construct of sound theory. (Kothari, 2004) If the above stated criteria for measuring validity are met our questionnaire is valid.

### **Reliability Test**

Reliability refers to is whether an instrument can be interpreted consistently across different situations. Reliability differs from validity in that it relates not to what should be measured, but instead to how it is measured. Reliability is defined as the extent to which a questionnaire, test, observation or any measurement procedure produces the same results on repeated trials (Golafshani, 2003). In short, it is the stability or consistency of scores over time or across raters. Pilot study will conduct and by using the Chonbach's alpha test the instrument reliability will check. Cronbach's alpha was checked the internal reliability of the instrument.

## **3.7 Methods of Data Analysis**

The procedure followed used in data analysis have significant impact on the accuracy and relevance of the findings for data analysis. Structured questionnaire is one of primary source of data collection instrument. After compiling the output of questionnaires the variables will entered in software and the data will also enter. There are some statistical techniques will apply on data to find out the results. These are: -

### **3.7.1 Descriptive statistics**

It was used to describe and summarize the response of the questionnaires by checking frequency, mean and standard deviation for the variables.

### **3.7.2 Inferential statistics**

Inferential statistics will compute and use to come up with conclusion on how representative is the sample to tale about the population. First, Correlation Coefficient analysis will apply which is primarily concerned with the finding out whether a relationship exist or not and determine

magnitude and direction. Second, multiple regression analysis was applied to measure the dependent variable which is presumed to be a function of the independent variables.

The objective of this analysis was to make a prediction about the dependent variable based on its covariance with all concerned independent variables. The equation of multiple regressions on this study is generally built around two sets of variable, namely dependent variables and independent variables. The basic objective of using regression equation on this study was to make the researcher more effective by describing, understanding, predicting, and controlling the stated variables.

### **3.8 Ethical consideration**

In the thesis the researcher was addressed to all ethical and legal issues and handles it professionally. A formal letter from Debre birhan University send to concerned body. And the names of employees select in the sample was not mentioned in the questionnaire for confidentiality purpose. Also the researcher respects the respondents right to participate or not at any time.

## **CHAPTER FOUR**

### **DATA PRESENTATION, ANALYSIS AND FINDINGS**

#### **4.1 Response Rate**

In order to conduct this study a total of 114 questionnaires were distributed to procurement and supply chain professionals and other management staff that work in Debre Berhan University.

Out of these distributed questionnaires, 99 were successfully filled and returned. The response rate of all the questionnaires stood at 86.8%. Therefore, the analysis is done on the 86.8% of response rate which is considering sufficient to conduct the study.

Table 4.1 Response Rate

<b>Response Rate</b>	<b>Frequency</b>	<b>Percentage</b>
Responded	99	86.8
Not Responded	15	13.2
Total	114	100

Source: Survey Result, 2021

#### **4.2 Profile of Respondents**

In this section, the profile of respondents who involved in the research was summarized on the tables here below and the frequencies and percentages are calculated and described. These variables include sex, age, educational level, profession, and years of experience of the respondents.

Table4.2 Summary of the Profile of Respondents

Profile of Respondents		Frequency	Percent	Cumulative Percent
Sex	Male	69	69.7	69.7
	Female	30	30.3	100.0
	Total	99	100.0	
Age	less than 25	9	9.1	9.1
	25-30	13	13.1	22.2
	31-35	31	31.3	53.5
	35-40	25	25.3	78.8
	above 41	21	21.2	100.0
	Total	99	100.0	
Educational Level	Certificate	2	2.0	2.0
	Diploma	6	6.1	8.1
	Degree	78	78.8	86.9
	Master and above	13	13.1	100.0
	Total	99	100.0	
Experience	0-2 years	18	18.2	18.2
	3-5 years	28	28.3	46.5
	6-10 years	26	26.3	72.7
	More than 10 years	27	27.3	100.0
	Total	99	100.0	

Source: Survey Result, 2021

The respondents were asked to mention their sex in the questionnaire. Accordingly, 69.7% of the respondents were male and 30.3% were females as shown in table 4.2 above. This implies that majority of respondents were male and the response of respondents are dominated by male respondents.

The respondents were asked to indicate the age category in the questionnaires. The finding reveals that, the majority 31.3% of the respondents were aged between 31 to 35 years, 25.3% between 35 to 40 years, 21.2% of respondents aged above 41, 13.1% of the respondents aged between 25 and 30 and the remaining 9.1% aged less than 25 years as depicted in the Table

4.2 above. This implies that the majority of respondents had practical experience and knowledge of procurement activities.

The respondents were asked to show their highest attained education level. The study revealed that majority of the respondents 78.8% participated in this research were degree holders, while 13.1% of respondents had attained their education up to Master & above and 6.1% of the respondents had achieved diploma level. Only 2% had a certificate level. These findings implied that most of the respondents were qualified to understand the nature of the study problem. The result also indicates that the questionnaire is completed by professional staffs and expected to give valuable response.

The overall experiences of respondents were found helpful as people having long experiences may gain varying skill and knowledge in doing things differently. So, respondents were asked to specify their overall experience and the finding reveals that 27.3% of respondents had experience more than 10 years, 26.3% had from 6-10 years, 28.3% of respondents had experience between 3 to 5 years and the remaining 18.2% have experience of less than 2 years as depicted in table 4.2 above. This implies that the majority of the respondents have adequate experience. Thus, it is clear that the experienced respondents could understand factors affecting public procurement practice in the case of Debre Birhan University and give sufficient and correct information that could contribute to the validity of the study.

### **4.3 Survey Results**

The following descriptive statistical analysis shows the conceptual framework adopted for this study. Particularly, the analysis demonstrates the research questions, which are effect of procurement plan implementation, employee's competence, ICT adoption and operational procedures or management. To make discussions the study used frequency, mean, and standard deviations. For these discussions procurement workers at different position in DBU were asked to indicate the extent of factors that affects public procurement practice in the University in five scales (1= strongly disagree, 2= disagree, 3= somewhat, 4= agree and 5=strongly agree).

### 4.3.1 Procurement plan implementation effect on public procurement practice

Procurement planning is one of the pre-requisites for the effectiveness and efficiency of the procurement function, thus leading to the ultimate success of the organization. It is the most important tool to accomplish the organization’s objectives. Procurement planning will make sure that the employees can effectively and efficiently mitigate the challenges affecting procurement process, and it significantly reduces the delay in the process. (Namusonge *et al*, 2013).

Table4.3 Procurement plan implementation

No	Statement	Scale	Frequency	%	Mean	SD
1	Procurement plan can facilitate procurement activity according to user need	Strongly disagree			4.03	0.99
		Disagree	7	7.1		
		Somewhat	12	12.1		
		Agree	31	31.3		
		Strongly agree	49	49.5		
		Total	99	100.0		
2	Procurement need is planned with full specification and submit to procurement unit on time	Strongly disagree	6	6.1	3.32	1.23
		Disagree	24	24.2		
		Somewhat	22	22.2		
		Agree	26	26.3		
		Strongly agree	21	21.2		
		Total	99	100.0		
3	Training about how to prepare procurement plan is provided	Strongly disagree	2	2.0	3.34	1.05
		Disagree	19	19.2		
		Somewhat	39	39.4		
		Agree	21	21.2		
		Strongly agree	18	18.2		

		Total	99	100.0		
4	Materials procured matches with your plan and specification	Strongly disagree	2	2.0	3.47	1.1
		Disagree	21	21.2		
		Somewhat	24	24.2		
		Agree	32	32.3		
		Strongly agree	20	20.2		
		Total	99	100.0		
5	Procurement plan is prepared through the involvement and participation of all end users	Strongly disagree	2	2.0	3.37	1.18
		Disagree	31	31.3		
		Somewhat	14	14.1		
		Agree	32	32.3		
		Strongly agree	20	20.2		
		Total	99	100.0		

Source: Survey Result, 2021

The study sought to evaluate the effect of procurement plan implementation on public procurement practice. According to the above table 4.3 the respondents indicated that procurement plan can facilitate procurement activity according to user need. Procurement plan can facilitate the procurement activity to a very great extent in the organizations as this was reported by 39.4% of the respondents strongly agree and 35.4% of the respondents reported agree and 14.1% somewhat extent respectively which had a mean of 4.03. Only 11.1% of the respondents disagree on this issue while none of them strongly disagree. Regarding to planning of procurement need with full specification and submit to procurement unit on time about 24.2% of the respondents disagree and 6.1% of the respondents strongly disagree while 21.2% strongly agree, 26.3% agree and 22.2% somewhat with a mean value of 3.32 and a standard deviation of 1.23. This mean 3.32 which is less than agree (4) shows that there is limitation in planning the procurement need with full specification and submit on time for the procuring unit. This would have effect on the public procurement practice.

The study further wanted to find out whether employees have received any training about how procurement need planning is prepared. The findings revealed that only 39.4% of the respondents (18.2% strongly agree and 21.2% agree) have took training about how to prepare procurement need plan. Others 39.4% of the respondent's rates somewhat and 21.2% of the respondents have not got any training of preparation of procurement need plan. This result indicates that a considerable number of staffs did not take training and this might cause inefficiency in the preparation of procurement need plan properly.

The study also sought to find out whether the materials procured matches with the plan and specification of the end user. The result of the survey indicates that 20.2% of the respondents strongly agreed, 32.3% agree, 24.2% somewhat, 21.2% disagree and 2% of them strongly disagree with a mean of 3.47 and a standard deviation of 1.1. These results indicate that majority of the procured materials matches with the procurement need plan but still there are materials that could not match with the plan.

Furthermore, the study also sought to assess whether procurement plan is prepared through the involvement and participation of all end users. The result indicates that 52.5% (sum of agree and strongly agree) of the respondents indicate that procurement planning is prepared with the involvement of all end users. 14.1% of the respondent's rate somewhat while 33.3% of the respondents (31.2% disagree and 2% strongly disagree) did not prepare procurement plan with the involvement and participation of all end users.

#### 4.3.2 Employee's Competence effect on public Procurement practices

Competent staff are effective, efficient and provide solutions to the procurement problems while incompetent staff would be ineffective and inefficient thus contributing to poor performance for the company (Kiage, 2013).

Table4.4 Employee's competency

No .	Statement	Scale	Frequency	%	Mean	SD
1	Procurement Staffs have recognized professional procurement qualifications or competency	Strongly disagree	4	4.0	3.45	1.13
		Disagree	18	18.2		
		Somewhat	26	26.3		
		Agree	31	31.3		

		Strongly agree	20	20.2		
		Total	99	100.0		
2	Procurement staffs have the skill to procure complex and special items	Strongly disagree	5	5.1	3.32	1.1
		Disagree	19	19.2		
		Somewhat	28	28.3		
		Agree	33	33.3		
		Strongly agree	14	14.1		
		Total	99	100.0		
3	Procurement staffs have the ability to understand users need, supply markets and suppliers	Strongly disagree	9	9.1	3.45	1.01
		Disagree	12	12.1		
		Somewhat	35	35.4		
		Agree	30	30.3		
		Strongly agree	13	13.1		
		Total	99	100.0		
4	Procurement staffs have the ability to negotiate with users and suppliers	Strongly disagree	6	6.1	3.3	1.09
		Disagree	17	17.2		
		Somewhat	30	30.3		
		Agree	33	33.3		
		Strongly agree	13	13.1		
		Total	99	100.0		
5	Procurement staffs have ability to apply public procurement principles and prepare tender and contract documents on time	Strongly disagree	9	9.1	3.26	1.12
		Disagree	12	12.1		
		Somewhat	35	35.4		
		Agree	30	30.3		
		Strongly agree	13	13.1		
		Total	99	100.0		

Source: Survey Result, 2021

The study sought to find out whether the procurement staff had the necessary skills and experience to carry out procurements effectively as these have great impact on the public procurement practice in DBU. The above table 4.4 shows the percentage and distribution of the respondents' reply for employee's competency factors of centralized procurement system effectiveness. From the findings, 51.5% of the respondents agree and strongly agree procurement staffs have recognized professional qualification or competence and 26.3% have somewhat while only 22.2% disagree and strongly disagree on the issue with a mean of 3.45 and a standard deviation of 1.13. The result indicated that more than half of the procurement staff had the necessary qualification and competence to carry out procurements effectively. Together with this there were assessments whether procurement staffs have the skill to procure complex and special items. The results indicated that 14.1% of the respondents strongly agree, 33.3% of the respondents agree, 28.3% somewhat, 19.2% of the respondents disagree and 5.1% of the respondents strongly disagree with a mean 3.32 and a standard deviation of 1.1. This shows that there is limitation in the skill of procurement staffs in the public procurement practice to procure complex and special items.

The study also tried see whether procurement staffs have the ability to understand users need, supply markets and suppliers and the result in the above table 4.4 indicated that 13.1% of the respondents strongly agree and 30.3% of the respondents agree that procurement staffs have the ability to understand users need, supply markets and suppliers while 35.4% somewhat, 12.1% disagree and 9.1% strongly disagree with a mean of 3.45 and a standard deviation of 1.01. Together with this respondent were asked to rate whether procurement staffs have the ability to negotiate with users and suppliers. The result of this indicated that 13.1% of the respondents strongly agree and 33.3% of the respondents agree that procurement staffs have the ability to negotiate with users and suppliers while 30.3% of the respondent rate somewhat, 17.2% of the respondents disagree and 6.1% of the respondents strongly disagree. This shows that 46.4% of the procurement staffs have the ability to understand users need, supply markets and suppliers. Furthermore, the study sought to find whether procurement staffs have ability to apply public procurement principles and prepare tender and contract documents on time. The results from the survey revealed that 13.1% of the respondents strongly agree, 30.3% of the respondents agree, 35.4% of the respondent's rate somewhat, 12.1% of the respondents disagree and 9.1% of the respondents strongly disagree with a

mean of 3.26 and a standard deviation of 1.12. This indicates that only 43.3% of the respondents agreed that procurement staffs have ability to apply public procurement principles and prepare tender and contract documents on time. This result indicated that there are limitations in applying procurement principles and in the preparation of tender and contract documents on time. These limitations would have their own effect on the effectiveness of centralized procurement system.

### 4.3.3 ICT adoption effect on Public Procurement Practice

ICT adoption is the process of capturing, transmitting and displays data and information technology and develop and communicating by using ICT instead of manual system for the procurement department (Muthuri, 2014).

Table4.5 ICT Adoption

No	Statement	Scale	Frequency	%	Mean	SD
1	The University use ICT to facilitate procurement process	Strongly disagree	6	6.1	3.07	1.19
		Disagree	32	32.3		
		Somewhat	26	26.3		
		Agree	19	19.2		
		Strongly agree	16	16.2		
		Total	99	100.0		
2	The procurement staffs have enough skill to use ICT for the procurement process	Strongly disagree	2	2.0	3.09	0.99
		Disagree	29	29.3		
		Somewhat	35	35.4		
		Agree	24	24.2		
		Strongly agree	9	9.1		
		Total	99	100.0		
3	ICT has increased the output of procurement officers	Strongly disagree	1	1.0	3.31	1.12
		Disagree	27	27.3		
		Somewhat	32	32.3		
		Agree	18	18.2		
		Strongly agree	21	21.2		
		Total	99	100.0		
4	There is easily assessable ICT	Strongly disagree			3.18	0.93

infrastructure that disclose the procurement	Disagree	27	27.3
	Somewhat	35	35.4
	Agree	29	29.3
	Strongly agree	8	8.1
	Total	99	100.0

Source: Survey Result, 2021

As one can see in the table 4.5 above a survey conducted to evaluate the effect of ICT on the public procurement practice. Respondents were asked to show their level of agreement whether the University use ICT to facilitate procurement process. The result of the survey indicates that 16.2% of the respondents strongly agree, 19.2% of the respondents agree, 26.3% of the respondent's rate somewhat, 32.3% of the respondents disagree and 6.1 % of the respondents strongly disagree. This shows that there is a limitation in DBU use of ICT to facilitate procurement process and this would have its own effect on the public procurement practice.

The respondents were also asked to rate whether the procurement staffs have enough skill to use ICT for the procurement process or not. The results for this assessment indicates that 9.1% of the respondents strongly agreed, 24.2% of the respondents agree, 35.4% of the respondent rate somewhat level, 29.3% of the respondents disagree and 2% of the respondents strongly disagree. The result shows that there are a considerable number of staffs that have not enough skill to use ICT for the procurement process. This will have its own impact on the effectiveness of public procurement practice.

The data obtained from the above table 4.5 about the question ICT has increased the output of procurement officers indicate 21.2% of the respondents strongly agreed, 18.2% of the respondents agree, 32.3% of the respondent rate somewhat level, 27.3% of the respondents disagree and 1% of the respondents strongly disagree. This result indicates that Information Communication Technology has not increased the output of procurement officers.

With regard to the question raise to respondents for their level of agreement on the availability of easily assessable ICT infrastructure that discloses the procurement information 8.1% of the respondents strongly agreed, 29.3% of the respondents agree, 35.4% of the respondent rate somewhat level, 27.3% of the respondents disagree and none of the respondents strongly disagree. This shows that less than half of the respondents agreed that

there is easily assessable information communication technology that supports the public procurement practice. From the analysis the above table we can see that majority of respondents agreed that the practice lacks information communication technology infrastructures. The university operates the service manually.

In general, from the analysis the university did not use ICT to facilitate the procurement process and the procurement staffs also have not the necessary skill to use the information communication technology. In addition, there is no easily assessable ICT infrastructure to support the procurement system. As a result, Information Communication Technology has not played its significant role to increase effectiveness of public procurement.

The above findings concur with Abebe (2017) study entitled that “Factors Affecting Public Procurement Performance in Ethiopia: The Case of Public Procurement and Property Disposal Services” shown that information communication technology is one of the factors affecting public procurement performance in the PPPDS.

#### **4.3.4 Operational Procedures effect on public Procurement practice**

Procurement begins with identifying a need and decided on its procurement requirement and continues through the processes of risk assessment, seeking and evaluating alternative solutions, contract award, delivery of and payment for the property and/or services and, where relevant, the ongoing management of a contract and consideration of options related to the contract (Waters, 2004).

Table4.6 Operational Procedures

No	Statement	Scale	Frequency	%	Mean	SD
1	There is proper contract management in the University	Strongly disagree	3	3.0	3.28	1.11
		Disagree	26	26.3		
		Somewhat	25	25.3		
		Agree	30	30.3		
		Strongly agree	15	15.2		
		Total	99	100.0		
2	There is appropriate file record management	Disagree	31	31.3	3.26	1.06
		Somewhat	25	25.3		
		Agree	29	29.3		
		Strongly agree	14	14.1		
		Total	99	100.0		
3	The organization avoids unnecessary bureaucratic procedures	Strongly disagree	1	1.0	3.09	1.01
		Disagree	33	33.3		
		Somewhat	31	31.3		
		Agree	24	24.2		
		Strongly agree	10	10.1		
		Total	99	100.0		
4	Procurement staffs are familiar with the rules and procedures of public procurement	Strongly disagree			3.42	0.93
		Disagree	20	20.2		
		Somewhat	27	27.3		
		Agree	42	42.4		
		Strongly agree	10	10.1		
		Total	99	100.0		

Source: Survey Result, 2021

45.5% of the respondents (15.2% strongly agreed and 30.3% agree) indicated that there is proper contract management in DBU while 29.3% (26.3% disagree and 3% strongly disagree) of the respondent did not accept. 25.3% of the respondent rate somewhat level. This indicates that there is limitation in proper contract management in the DBU on public procurement practice.

With regard to the question raise to respondents for their level of agreement on issues of availability of appropriate file record management 14.1% of the respondents strongly agreed,

29.3% of the respondents agree, 25.3% of the respondent rate somewhat level, 31.3% of the respondents disagree and none of the respondents strongly disagree. This result shows that only 46.4% of the respondents believe that there is appropriate file record management in BDU on public procurement practice.

As indicated in the above table 4.6 respondents were asked whether the University avoids unnecessary bureaucratic procedures or not. The result showed that 10.1% of the respondents strongly agreed, 24.2% of the respondents agree, 31.3% of the respondent rate somewhat level, 33.3% of the respondents disagree and 1% of the respondents strongly disagree. The results indicate that there is limitation in the University in avoiding unnecessary bureaucratic procedures.

As indicated in the above table procurement staffs are familiar with the rules and procedures of public procurement practice (10.1% of the respondents strongly agreed, 42.4% of the respondents agree) while 27.3% of the respondent rate somewhat level. Those only 20.2% of the respondents disagree and none of the respondents strongly disagree regarding having the knowledge of procurement rules and procedures. This indicates that the rules and procedures used for the public procurement practice are known by more than half of the procurement staffs.

**4.4 Evaluate Public procurement practice in DBU**

The study sought to investigate the extent to which public procurement practices in DBU.

Table 4.7 Evaluate public procurement practice related questions

No.	Statement	Scale	Frequency	%	Mean	SD
1	On time delivery	Strongly disagree	17	17.2	2.74	1.21
		Disagree	30	30.3		
		Somewhat	21	21.2		
		Agree	24	24.2		
		Strongly agree	7	7.1		
		Total	99	100.0		
2	The right Quality	Strongly disagree	18	18.2	2.7	1.17
		Disagree	27	27.3		
		Somewhat	27	27.3		

		Agree	21	21.2		
		Strongly agree	6	6.1		
		Total	99	100.0		
3	The right Quantity	Strongly disagree	13	13.1	2.84	1.19
		Disagree	29	29.3		
		Somewhat	29	29.3		
		Agree	17	17.2		
		Strongly agree	11	11.1		
		Total	99	100.0		
4	The Right source	Strongly disagree	4	4.0	2.96	1.08
		Disagree	37	37.4		
		Somewhat	27	27.3		
		Agree	21	21.2		
		Strongly agree	10	10.1		
		Total	99	100.0		
5	The right price	Strongly disagree	1	1.0	3.35	0.96
		Disagree	18	18.2		
		Somewhat	38	38.4		
		Agree	29	29.3		
		Strongly agree	13	13.1		
		Total	99	100.0		
6	Customer satisfaction	Strongly disagree	11	11.1	2.59	1.01
		Disagree	43	43.4		
		Somewhat	24	24.2		
		Agree	18	18.2		
		Strongly agree	3	3.0		
		Total	99	100.0		

Source: Survey Result, 2021

As indicated in the above descriptive statistics table 4.7, evaluation of public procurement practice in terms of on time delivery of goods and services 7.1% of the respondents strongly agreed, 24.2% of the respondents agree, 21.2% of the respondent rate somewhat level, 30.3% of the respondents disagree and 17.2% of the respondents strongly disagree with a mean value of 2.74 and a standard deviation of 1.21. The mean value 2.74 which is less than 3 indicates that there is limitation in the public procurement practice in providing the required

goods and services in the required time for the University and this have effects on the University operations.

Respondents were also requested to rate the level of public procurement practice in terms of delivering the required quality of goods and services. The result shows that 6.1% of the respondents strongly agreed, 21.2% of the respondents agree, 27.3% of the respondent rate somewhat level, 27.3% of the respondents disagree and 18.2% of the respondents strongly disagree with a mean of 2.7 and a standard deviation of 1.17. This indicates that there is a weakness of the public procurement practice in delivering the required quality of goods and services for the University.

The results sought in the above table 4.7 to analyze whether the public procurement practice in DBU provide the required quantity of goods and services indicate 11.1% of the respondents strongly agreed, 17.2% of them agree, 29.3% of the respondent rate somewhat level, 29.3% of the respondents disagree and 13.1% of the respondents strongly disagree with a mean value of 2.84 which is below medium level. This shows that there is a problem on delivering the required quantity of goods and services for the university with public procurement practice.

There is also limitation in terms of obtaining goods and services from the right source in public procurement practice of the DBU. This result is obtained from the respondents as 10.1% of the respondents strongly agreed, 21.2% of the respondents agree, 27.3% of the respondent rate somewhat level, 37.4% of the respondents disagree and 4% of the respondents strongly disagree with a mean value of 2.96 and a standard deviation of 1.08.

On the other hand, public procurement practice in terms of obtaining goods and services with the right price. This result is indicated in the above table 4.7 as 13.1% of the respondents strongly agreed, 29.3% of the respondents agree, 38.4% of the respondent rate somewhat level, 18.2% of the respondents disagree and 1% of the respondents strongly disagree with a mean value of 3.35 which is above the medium level with a standard deviation of 0.96.

With regard to evaluate public procurement in terms of maximizing customer satisfaction 3% of the respondents strongly agreed, 18.2% of the respondents agree, 24.2% of the respondent rate medium level, 43.4% of the respondents disagrees and 11.1% of the respondents strongly disagree with a mean of 2.59 and a standard deviation of 1.01. This result indicates

that more than half of the respondents are dissatisfied with public procurement practice in the university.

As indicated in the above descriptive statistics table, public procurement practice operated by DBU has limitation in terms of delivering of goods and services on the right time, providing the right quality and quantity goods and services from the right source. The relative advantage obtained from this procurement practice is obtaining goods and services with a right price. But the overall result indicates that there is dissatisfaction on the practice by the university. Therefore, from the result above, one can conclude that public procurement practice by DBU is not practice well.

**4.5 Tests and Statistical Analysis**

The inferential statistics used in this study was concerned with the various tests of significance for normality, autocorrelation and multi collinearity in order to determine the validity of data. The data was sorted to group questions according to applicable constructs under test. Finally, correlation and standard multiple regression analysis were performed. Tests and analysis of the data are presented below:

**4.5.1 Normality Test**

In a normal distribution, the values of Skewness are 0. If a distribution has values of skew above or below 0 then this indicates a deviation from normal (Field, 2009). As we have seen from the below table, the Skewness approaches or around to Zero and normal distribution figure 4.1 also show the data is almost normal. All variables were found to be normal.

Table4.8 Tests of Normality Framework Agreement Effectiveness

	<b>Procurement plan implementation</b>	<b>Employee’s competence</b>	<b>ICT adoption</b>	<b>Operational management</b>
<b>Skewness</b>	-0.143	-0.206	0.302	0.325
<b>Std. Error of Skewness</b>	.243	.243	.243	.243

Source: Survey Result, 2021

### 4.5.2 Correlation Relation

The correlation of the variable is measured by Pearson correlation coefficient. The result of the Pearson correlation is presented in the following table and interpreted by the guide line suggested by Field (2006); he mentioned that the Pearson correlation coefficient shows the relationship and direction between the predictor and outcome variable. Accordingly, if the relationship is measured in the range of 0.1 to 0.29 it is a weak relationship, 0.30 to 0.49 is moderate, above 0.50 shows strong relationship; while the positive and negative sign tell us the direction of their relationship

Table 4.9 Correlation Matrix table

Correlations						
		Procurement plan implementation	Employee's competence	ICT adoption	Operational management	Evaluation of public procurement
Procurement plan implementation	Correlation Coefficient	1.000	.558**	.318**	.631**	.687**
	Sig. (2-tailed)	.	.000	.001	.000	.000
	N	99	99	99	99	99
Employee's competence	Correlation Coefficient	.558**	1.000	.354**	.601**	.656**
	Sig. (2-tailed)	.000	.	.000	.000	.000
	N	99	99	99	99	99
ICT adoption	Correlation Coefficient	.318**	.354**	1.000	.415**	.487**
	Sig. (2-tailed)	.001	.000	.	.000	.000
	N	99	99	99	99	99
Operational management	Correlation Coefficient	.631**	.601**	.415**	1.000	.809**

	Sig. (2-tailed)	.000	.000	.000	.	.000
	N	99	99	99	99	99
Evaluation of public procurement	Correlation Coefficient	.687**	.656**	.487**	.809**	1.000
	Sig. (2-tailed)	.000	.000	.000	.000	.
	N	99	99	99	99	99
**. Correlation is significant at the 0.01 level (2-tailed).						

Source: Survey Result, 2021

The above correlation table shows that the correlation relationship between predictor variables (Procurement plan implementation, Employee's competence, ICT adoption and Operational management) and dependent variables (Public Procurement Practice).

Accordingly, public procurement practice has strong and positive correlation with all public procurement factors at Pearson correlation (r) value of 0.687, 0.656, 0.487 and 0.809 respectively as Procurement plan implementation, Employee's competence, ICT adoption and Operational management with significant value of  $P < 0.01$ .

#### 4.5.3 Multicollinearity Assumptions

Multicollinearity refers to the situation in which the independent variables are highly correlated in a way that has undesirable implication on the outcome of regression analysis. Multi collinearity exists when there is a strong correlation between two or more predictors in a regression model (Saunders *et al*, 2007). There should be no perfect linear relationship between two or more the predictors. So the predictor variables should not correlation too highly (Ho, 2006). According to Robert (2006), if collinearity is discovered then one can either remove one of the variables or create a new variable that combine the previous two that were highly inter correlated because when the predictor variables are highly correlated, they share essentially the same information and together, they may explain a great deal of the dependent variable, but may not individually contribute significantly to the model. Thus, the impact of multicollinearity is to reduce any individual independent variable's predictive power by the extent to which it is associated with the other independent variables (Beyan,

2014). This research data multicollinearity assumption is checked by the Spearman's correlation Coefficient and

**Collinearity Statistics:**

The first assumption is checking the value of Spearman's correlation coefficient among predictor's variables. If Spearman's correlation coefficient value among predictors are below <0.9, there is no substantial correlation between predictor variables so there is no multicollinearity problem (Field, 2006). As shown above table 4.9 all the Spearman's correlation coefficient values between predictors are below 0.90. Therefore, it is satisfied multicollinearity assumption and don't have collinearity problem so that it is able to obtain unique estimates of the regression coefficient.

Accordingly, Tolerance and Variance Inflation Factor (VIF) values were calculated to check multicollinearity and the result is presented on table 4.10 below. The Tolerance value is an indication of the percentage of variance in the predictor that cannot be accounted for by the other predictors implying the fact that very small values indicate overlap or sharing of predictive power (Robert, 2006). The Tolerance column value below 0.2 and VIF value above 10 pose a multicollinearity problem (Williams, 2015).

Table4.10 Multicollinearity Test

<b>Coefficients</b>			
<b>Model</b>		<b>Collinearity Statistics</b>	
		<b>Tolerance</b>	<b>VIF</b>
1	Procurement plan implementation	.575	1.741
	Employee's competence	.567	1.763
	ICT adoption	.766	1.306
	Operational management	.440	2.271
a. Dependent Variable: Public procurement practice			

Source: Survey Result, 2021

As shown on the table, the Tolerance value for all the independent variables are greater than 0.2 and the highest VIF is 2.271. Therefore, the model performed with no major multicollinearity problem among the explanatory variables. As implied by the Tolerance and VIF values, in this particular case, multicollinearity is not a serious problem.

### 4.5.4 Multiple Regression Results

Multiple linear regression analysis was conducted to determine how the dimensions of the independent variable predict the dependent variable. Multiple linear regression analysis is a method of estimating or predicting a value on some dependent variable given the values of one or more independent variables. Through the analysis of multiple linear regressions, an attempt has been made to determine the magnitude of the predicting power of the dimensions of the independent variable (procurement plan implementation, employee’s competence, ICT adoption and operation management) on the dependent variable (i.e. Public Procurement Practice).

#### I. Coefficient of Determination

Model summary table describes the overall model whether the model is successful in predicting dependent variables. It gives a value of R square, which measure of how much of the variability in the outcome is accounted for the predictors. In addition, this summary table tells us whether auto-correlation assumption is satisfied or not through Durbin Watson value (Field, 2006).

Table4.11 Model Summary

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.874 <sup>a</sup>	.763	.753	.45079	1.767
a. Predictors: (Constant), procurement plan implementation, Employee’s competence, ICT adoption, operation management					
b. Dependent Variable: Public Procurement Practice					

Source: Survey Result, 2021

In the above table 4.11, multiple correlation coefficient R of .874 indicates that the correlation among the independent variables cumulatively on the dependent variable is strong and positively correlated; as a result, working on those selected factors have positive impact on public procurement practice of DBU. The coefficient of determination, R square is interpreted as 76.3 % of the variation in the dependent variable public procurement practice is explained by the independent variables (Procurement plan implementation, Staff

Competence, adoption of ICT and operational management) and the remaining percent is explained by other dimensions. This means that other factors not studied in this study contribute 23.7% affecting public procurement practice in DBU.

Durbin- Watson test check the auto correlation of the data and if the value of Durbin-Watson test 1.5 to 2.5 shows that there is no auto-correlation in the data (Ayyanger, 2007). As a result, in this study the Durbin- Watson test result is 1.767 as a result there is no auto-correlation between the data.

**II. Analysis of Variance /ANOVA/ Test**

The study used ANOVA to establish the significance of the regression model. In testing the significance level, the statistical significance was considered significant if the p-value was less or equal to 0.05. The significance of the regression model is as shown in table 4.12 below with Pvalue of 0.00 which is less than 0.05. The results indicated that the overall model was statistically significant. The results further imply that the independent variables are good predictor of the dependent variable which was supported by an F-value of 75.810 is significant at p–value of 0.000.

Table4.12 Analysis of Variance (ANOVA)

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	61.622	4	15.406	75.810	.000 <sup>b</sup>
	Residual	19.102	94	.203		
	Total	80.724	98			
a. Dependent Variable: Public Procurement Practice						
b. Predictors: (Factors), Operational management, ICT adoption, Procurement plan implementation, Employee's competence						

Source: Survey Result, 2021

Therefore, from the result, it can be concluded that with 76.3% of the variance (R square) in public procurement practice is significant and the model appropriately measure the dependent variables. Furthermore, the significant value P is very low or less than 0.01 means that the coefficient value is unlikely to have occurred by chance alone.

### III. Regression Coefficients or Model

Standardized regression coefficient (Beta) is the estimated coefficient indicating the strength of relationship between an independent variable and dependent variable expressed on a standardized scale where higher absolute values indicate stronger relationships (range is from -1 to 1) (William & Barry, 2010).

Table4.13 Regression Coefficients

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Factors)	-1.091	.238		-4.590	.000
	Procurement plan implementation	.231	.066	.231	3.494	.001
	Employee's competence	.185	.071	.175	2.620	.010
	ICT adoption	.135	.062	.124	2.157	.034
	Operational management	.642	.095	.514	6.793	.000
a. Dependent Variable: Public Procurement Practice						

From the coefficient findings provided in the above table 4.13, procurement plan implementation and centralized procurement system effectiveness are positive and statistically significantly related at 0.231( $t = 3.494$ ) and a  $p$  – value of 0.001. This implies that procurement plan implementation significantly influences public procurement practice in DBU and thus have has a significant positive relationship with public procurement practice. In addition, employee’s competence and public procurement practice are positive and statistically significantly related at 0.175 ( $t = 2.620$ ) and a  $p$  significance level of 0.01 which implies employee’s competence significantly influences public procurement practice in DBU. ICT adoption and public procurement practice are also positive and statistically significantly related at 0.124( $t = 2.157$ ) and a  $p$  significance level of 0.034 which implies ICT adoption significantly influences practice of public procurement. As indicated in the above table it is clear that operational management has a major significant influence on the

public procurement practice in DBU as it gave a coefficient value of 0.514, ( $t = 6.793$ ) and a  $p$  – value of 0.000 which is less than 0.05.

In general, the above result indicates that operational management contribute more to public procurement practice at DBU followed by procurement plan implementation, employee's competence, while ICT adoption contributes the least relatively from the others to public procurement practice at DBU.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATION**

#### **5.1 Summary of Findings**

The study was conducted to assess factors that affect public procurement practice in case of Debre Berhan University. The effect of procurement plan implementation, employee's competence, ICT adoption and operational management on the public procurement practice in Debre Berhan University were examined from questionnaire responses of the respondents developed by the researcher. The status of public procurement practice has also been assessed. The following findings are obtained from the analysis.

##### **5.1.1 Procurement Plan Implementation**

The first objective was to examine the extent to which procurement plan implementation affects public procurement practice in DBU. More than 80% of the respondents argue that procurement plan can facilitate procurement activity according to user need.

From Spearman's correlation coefficient, it was found that procurement plan implementation is positively and strongly correlated with the public procurement practice with Spearman's correlation coefficient of  $r_s = .687$ ,  $P < 0.01$ .

From regression model, the result also indicates that procurement plan implementation and public procurement practice are positive and statistically significantly related at  $0.231$  ( $t = 3.494$ ) and a  $p$  significance level of  $0.001$ . Increase in the level of procurement plan implementation significantly increases public procurement practice by  $0.231$ . This implies that procurement plan implementation accounts for  $23.1\%$  of the variations in public procurement practice.

##### **5.1.2 Employee's Competence**

The second objective was to examine the extent to which competency of staffs influence the public procurement practice in DBU. The result shows that there were limitations of procurement staffs in having the skill to procure complex and special items; the ability to understand users need, supply markets and suppliers; the ability to negotiate with users and

suppliers; and ability to apply public procurement principles and prepare tender and contract documents on time.

The correlation matrix result from Spearman's correlation coefficient indicate there was a positive correlation and significant relation between employee's competency and public procurement practice shown by a correlation figure of  $r_s = .656$ ,  $P < 0.01$ .

From regression model, a result computed indicates that employee's competence and public procurement practice are positive and statistically significantly related at 0.175 ( $t = 2.620$ ) and a p significance level of 0.01 which implies increase in the level of employee's competence increases public procurement practice. This implies that staff competency accounts for 17.5% of variations in public procurement practice.

### **5.1.3 ICT Adoption**

The third objective was to assess the effect of ICT adoption on the public procurement practice in DBU. The results indicated that there is no easily assessable ICT infrastructure to support the system and procurement staffs have not enough skill to use ICT for the procurement process.

Regarding the relationship between the adoptions of ICT and public procurement practice the result of Spearman's correlation coefficient shows that there was positive correlation between ICT adoption and public procurement practice with Spearman's correlation coefficient of  $r_s = .487$ ,  $P < 0.01$ . This shows that ICT adoption impacted positively public procurement practice.

From the regression model, ICT adoption and public procurement practice are also positive and statistically significantly related at 0.135 and a p significance level of 0.034 implies increase in the level of ICT adoption increases public procurement practice.

### **5.1.4 Operation Management**

The other objective of this study was assessing the effect of operational procedures on the public procurement practice in DBU and the result indicate that there were problems of proper contract management and file record management. There were unnecessary bureaucratic procedures and procured items were not tested and inspected accordingly at the time of delivery.

From Spearman's correlation coefficient, it was clear that there is a positive correlation between operational management and public procurement practice with Spearman's correlation coefficient of  $r_s = .809$ ,  $P < 0.01$  that indicated a strong relationship between the two variables.

From regression model, the coefficient findings indicate that operational management has a major effect on public procurement practice as it gave a coefficient value of 0.514, ( $t = 6.793$ ) and a  $p$  – value of 0.000. This implies that increase in operational management results in increase in public procurement practice in DBU. This implies that procurement operation management accounts for 51.4% of variations in public procurement practice.

In general operation management has strongest impact on public procurement practice with  $\beta = 0.514$  followed by procurement plan implementation with  $\beta = 0.231$  and the third is employee's competence with  $\beta = 0.175$  and the least impact relatively from the other factors are ICT adoption with  $\beta = 0.124$ . As the multiple correlation coefficients  $R$  of .874 indicates that the correlation among the independent variables cumulatively on the dependent variable is strong and positively correlated; as a result, working on those selected factors have positive impact on public procurement practice by DBU. The coefficient of determination,  $R$  square also indicates 76.3 % of the variation in the dependent variable is explained by the independent variables and the remaining percent is explained by other dimensions.

Finally, the result of the study indicates that public procurement practice was not effective (aggregate mean-2.9) in terms of delivery of goods and services in the right time, at the right quality and quantity from the right source. Relatively the public procurement practice has provided goods and services with a right price. As a result, Debre Berhan University were not satisfied by the public procurement practice.

## **5.2 Conclusions**

Based on the findings presented in previous sections, the study drawn the following conclusions.

- The study result indicates that procurement plan implementation and public procurement practice has positive and strong relationship. Planning influences positively and significantly the public procurement practice. There were problems of planning the procurement need with full specification and submit on time for the

procuring unit and a considerable number of staffs did not take training about procurement need planning.

- Employee's competence also has strong and positive relation and influence positively and significantly the public procurement practice. There was limitation in the skill of procurement staffs to procure complex and special items and in applying procurement principles and in the preparation of tender and contract documents on time.
- Furthermore, it can be concluding ICT adoption has positive correlation and influences positively and significantly the public procurement practice by DBU. The study identified that the system lacked easily assessable ICT infrastructure and the procurement staffs have limitation of skill to use ICT which might affect the role of ICT to increase public procurement practice.
- The result of the study implied that operational management has also positive and strong correlation and influence to a large extent among the independent variables the public procurement practice. The study concludes that there was limitation in proper contract management, appropriate file record management, problem of avoiding unnecessary bureaucratic procedures and limitation in inspection and test when the procured items are delivered for the beneficiaries.
- From the assessment result public procurement practice was not effective in delivering goods and services on time, with right quality and right quantity from the right source for Debre Berhan University. The university were dissatisfied by the poor performance and inefficient services provided by the Public procurement practice

### **5.3 Recommendations**

According to the findings, hereafter, the researcher forwarded the following recommendations as improvement interventions for future improvements:

- DBU must provide continuous training how to prepare the procurement need plan to procurement staffs continuously to improve the quality of the plan.
- Continuous capacity building through training and experience sharing for procurement staffs should be given to equip them with the necessary skills required

to handle dynamic changes of procurement systems and improve ability to apply public procurement practice and prepare tender and contract documents on time.

- The DBU must establish well organized and integrated, easily assessable ICT infrastructure systems that support the system and disclose the relevant current procurement information to the stakeholders. In addition, training to improve the skill of utilization of ICT must be provided for procurement staffs for the purpose of enhancing public procurement practice.
- DBU must design and implement proper contract management system to increase the performance levels of public procurement practice. In addition, the contract management should be administered by qualified and experienced procurement professionals.
- Procurement unit should develop appropriate file record system supported by ICT which is easily accessible and operable to any users.
- Sample quality checkup must be made by relevant professional before receiving materials from supplies to have right quality goods.
- DBU should make regular assessment on the public procurement practice to identify and solve basic problems that affect the effectiveness of the system.

#### **5.4. Suggestion for further Study**

The scope of this research was attempted to assess factors affecting public procurement practice in the case of Debre Birhan University. The study found that the variables considered; procurement plan implementation, employee's competence, ICT adoption and operation management accounted for 76.3% variability in Debre Berhan University public procurement practice; implying that the 23.7% could be due to other factors beyond the scope of this study. Further research is recommended on other factors such as, duration of framework agreement, supplier related factors, ethics of participants, market dynamism and etc

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## Questionnaires

### Debre Birhan University Business and economics faculty Department of Logistics and Supply Chain Management

Dear respondent,

My name is Deneke Nesibu and I am carrying out an academic research on the factors affecting public procurement practice in the case of Debre Birhan University.

The validation of the research objectives depends on your genuine and timely response by completing the attached demographic and procurement related questionnaires. Please be assured that the information acquired shall be used purely for academic purpose only and will be kept strictly confidential. Please indicate your level of agreement or disagreement by using (√ or x) mark on the appropriate box given corresponding to each statement, please state your opinion on the space provided for open question and no need of writing your name.

Your co-operation and assistance will be highly appreciated. If you need any clarification or information: **Mob.0935001422**

#### Part One: Demographic data

1. Gender    Male     Female
2. Age    Less than 25     25- 30     31- 35     36 - 40     Above 41
3. Educational level?    Certificate     Diploma     Degree     Masters and above
4. Your working experience in DBU    0-2 year     3-5years     6-10 years     more than 10 years

**PART II.** Please read each statement and put (√) on the item that suits you as best alternative.

**1. Procurement plan implementation Assessment**

<b>No.</b>	<b>Statement</b>	<b>Strongly Agree(5)</b>	<b>Agree (4)</b>	<b>Somewhat (3)</b>	<b>Disagree (2)</b>	<b>Strongly Disagree(1)</b>
1	Procurement plan can facilitate procurement activity according to user need					
2	Procurement need is planned with full specification and submit to procurement unit on time					
3	Materials procured matches with your plan and specifications					
4	Training about how to prepare procurement plan is provided					
5	Procurement plan is prepared through the involvement and participating of all end users					

**2. Employee's Competence Assessment**

<b>No.</b>	<b>Statement</b>	<b>Strongly Agree(5)</b>	<b>Agree (4)</b>	<b>Somewhat (3)</b>	<b>Disagree (2)</b>	<b>Strongly Disagree(1)</b>
1	Procurement Staffs have recognized professional procurement qualifications or competency					
2	Procurement staffs have skills to procure complex or special items					
3	Procurement staffs have the ability to understand users need, supply markets and suppliers					
4	Procurement staffs have the ability to negotiate with users					

5	Procurement staffs have ability to apply public procurement principles and prepare tender and contract documents on time					
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### 3. ICT Adoption Assessment

No.	Statement	Strongly Agree(5)	Agree (4)	Somewhat (3)	Disagree (2)	Strongly Disagree (1)
1	The University use ICT to facilitates procurement process					
2	The procurement staffs have enough skill to use ICT for the procurement process.					
3	Information Communication Technology has increased the output of procurement officers					
4	There is easily assessable ICT infrastructure that disclose the procurement information					

### 4. Operational procedures/management Assessment

No.	Statement	Strongly Agree(5)	Agree (4)	Somewhat (3)	Disagree (2)	Strongly Disagree(1)
1	There is proper contract management in the University					
2	There is appropriate file record management					
3	The University avoiding unnecessary bureaucratic procedure					
4	Procurement staffs are familiar with the rules and procedures of public procurement					

**5. Evaluation of public procurement practice**

No.	Statement	Strongly Agree(5)	Agree (4)	Somewhat (3)	Disagree (2)	Strongly Disagree (1)
1	With Right Quality					
2	At Right Time					
3	At Right Price					
4	From the Right Source					
5	Right Quantity					
6	Customer satisfaction of government University					

**If you want to add, please specify.....**  
 .....  
 .....

-----**Thanks a lot for your valuable time**-----