

***Assessment of the Effectiveness of JU Procurement System & its  
Challenges***

*A Thesis Submitted to the School of Graduate Studies of Jimma University in  
Partial Fulfillment of the Requirements for the Award of the Degree of Master  
of Business Administration (MBA)*

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*Jimma, Ethiopia*

## CERTIFICATE

*This is to certify that the thesis entitled “Assessment of the Effectiveness of JU Procurement System & Its Challenges” , Submitted to Jimma University for the award of the Degree of Master of Business Administration (MBA) and is a record of Valuable research work carried out by Mr. Abebe Wolie , under our guidance and supervision.*

*Therefore we hereby declare that no part of this thesis has been submitted to any other university or institutions for the award of any degree of diploma.*

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## ***DECLARATION***

This is to certify that the thesis entitled “Assessment of the Effectiveness of JU Procurement System & Its Challenges”, has been Carried out by me under the guidance and supervision of Mr. Mekonnen Bogale and Mr. Mohamed Yasin.

The thesis is original and has not been submitted for the award of degree of diploma to any other university or instructions.

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## **ABSTRACT**

*This study was triggered by the fact that many institutions including public universities cost a great deal of money as a result of ineffective procurement system. The ineffectiveness might be the result of poor quality, delays, improper quantity and non-cost effective delivery of goods or services. The aim of this study is to assess the effectiveness of JU procurement system and to identify the challenging parameters associated with procurement system in JU. The study focused on how much planning process, tendering process, contracting performance, IT adoption, operating procedures and supplier's commitment challenging the JU's procurement system. This objective was achieved through exploratory and conclusive research design. The study used structured questionnaires and interviews as primary tools for data collection with the support of field survey. A total of 72 respondents out of the expected 93 respondents returned the survey instruments. The finding from descriptive statistics indicates that the weak contracting performance, absence of IT adoption, absence of operating guide lines and low suppliers commitments were the bottlenecks to set up effective procurement system in JU. Even though the planning and tendering stages were not the challenges, some of the specific determinants those are timely approval of procurement plan to the colleges/institutes, publishing process of procurement in the website and local newspapers, on time provision of procurement requirements to the procurement department, verification of successful bidder's price to the market prices and advertisement in approved media were challenged the JU's procurement system. Furthermore multiple linear regression result revealed that ICT adoption, operating procedure, contracting performance stage and suppliers' commitment in procurement process have a positive association and statistically significant impact on effectiveness of JU's procurement system. This study recommends that Jimma University and Ministry of Education should enhance the implementation of contracting performance stage, ICT adoption to procurement activity, prepare procurement operating guide lines and follow its implementation, enhance cooperation between procurement Department and suppliers.*

**Key Words:** *procurement, effectiveness, challenges & bottlenecks*

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## ABBREVIATIONS/ACRONYMS

ANOVA	Analysis Of Variance
BECO	Business and Economics Collage
BS	Behavioral Science
CSSH	College of Social Science & Humanity
EDI	Electronic Data Interchange
EPC	European Policy Committee of European Commission
ERP	Enterprise resource planning
EFPPD	Ethiopian Federal Public Procurement Disposal
GOJ	Government of Jamaica
GPN	General Procurement Notices
HR	Human Resource
ICT	Information Communication Technology
IS	Information System
IT	Information Technology
JIT	Jimma Institute of Technology
JU	Jimma University
JUAVMC	Jimma University Agriculture and Veterinary Medicine Collage
KM	Kilo Metter
PE	Procuring Entities
PLC	Programmable logic Controller
PPA	Public Procurement Act
PP	Public Procurement
SPSS	Statistical Package for Social Science
PS	Procurement System
PSI	Pre-shipment inspection
STD	Standard Tender Documents
USAID	United States Agency for International Development
VfM	Value for Money
VIF	Variance Inflation Factor

# CHAPTER ONE

## 1. INTRODUCTION

This chapter introduces the study on the assessment of the JU's procurement system & its challenges. In this part assessment of the JU procurement system whether effective or ineffective and the major bottlenecks in JU procurement system have been discussed. Furthermore, this chapter deals with a brief overview on the background of the study, statements of the problem, research questions and hypothesis, goal of the study, significance of the study, scope of the study and research layout.

### 1.1. Background of the Study

Procurement has a wide scope than purchasing and it is defined as the purchase of materials and services from outside organization to support the firm's operations from production to marketing sales and logistics (Robbins, 2001). Procurement activities endeavor at anticipating needs, sourcing and obtaining supplies, transporting supplies into an organization, and evaluating the status of the supplies as a current asset (Hardaker and Graham, (2000), McCue and Gianakis (2001)).

An ideal procurement system should focus on effectiveness, where procuring entities should meet the commercial, regulatory and socio-economic goals of government in a way that is proper to the procurement need. Furthermore, a good procurement practice should embrace efficiency which requires that procurement processes can be carried out as cost effectively as possible, fair-dealing, where suppliers treated fairly, without discrimination or prejudice including protection of commercial confidentiality where necessary (Agere, 2001). However, procurement is an area that might be disposed to mismanagement, corruption, and merchant's schemes. Challenges affecting procurement performance has been attracting attention from researchers due to poor performance resulting from disobedience to proper processes.

According to Musanzikwa (2013) the three steps of procurement procedures were need identification, planning and specification of goods or services required, and sourcing, awarding, and supplier management that facilitate timely delivery.

According to Saul, Getuno, Osoro and Mburu (2013) the common challenges in the public procurement process in Kenya are the choice of procurement methods, record keeping, data and documentation controls, contract management processes, follow-up mechanism, levels of ethics, ICT adoption and buyer-supplier relationship.

Every organization, weather it is a service or production buys materials, services and supplies to support operations. Therefore, Public Universities in Ethiopia are service organizations that have purchased goods and services to support academic, research, and public service programs. They also buy goods and services to support activities such as operations and maintenance, student housing, food services, and bookstore operations. Items purchased include scientific equipment, laboratory machines, medical equipment, classroom and office furniture and supplies, chemicals, building construction and repair, maintenance services, and professional services. Jimma University (JU) is one of the first generation Universities in Ethiopia, which has its own procurement practices to satisfy its need of goods and services. It is found in Jimma City, in South Western Ethiopia, 355 KM farther from Addis Ababa. Even though JU has its own and centrally budgeting procurement practice, some indicators such as customers' satisfaction survey reports, strategic plans, new but not functioned machineries, etc. might be the result of weak procurement system.

The JU procurement system may have internal goals such as price, quality, quantity and timely delivery of goods or services. However it may suffer from huge losses due to poor management in the procurement processes, absence of ICT adoption, absence of regulations and low suppliers commitment (Shirima (2009) and Saul (2013)). The procurement process mainly encompasses procurement planning, tendering and contract management (OECD, (2010) and USAID | Deliver Project, (2013)).

The procurement planning and tendering processes had impact on duration taken to execute works, services or goods delivered as well as quality and cost of the acquired goods, works or services. The contract management phase enables JU to get desired quality of deliverables, at the targeted time and within budget. It needs attention to procurement processes such as procurement planning, tendering and contract management, and needs holistic approach. Procurement planning and tendering processes play a pivotal role of the procurement process for having smooth contract management and ultimately delivering expected

outputs. Thus, to check the effectiveness of JU's procurement system, planning, tendering, contract management, ICT adoption, operating regulations and suppliers' commitment is of paramount importance.

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

Many institutions including public universities experience difficulties during pre-qualifications, staging competitive procurement process, warehousing supplies, carrying out quality assurance, clearing at customs, over and under invoicing in imports and local procurements and availing adequate finances equal to sourced resources to carry out the Act. These difficulties would make the Organization for unnecessary costs and make it ineffective (Kimaiyo, 2012).

The same to that, some indicators in JU such as JU's five years strategic plan for research, innovation and community service, customers' satisfaction survey reports, improper and inoperative new machineries, etc. indicates as the JU procurement system seems weak. According to Jimma University strategic plan for research, innovation and community services, 2016-2020; poor, delayed and rigid purchasing system considered as weakness and non-productive purchasing system for laboratory based researches, considered as threats to make the research, innovation and community services. In addition to that the 2017 JU's customers' satisfaction survey report revealed that 42.2 percent of the respondents dissatisfied by educational facility. The detailed satisfaction level figures of some colleges/institutes as indicated in the survey report shows that the Law School 8 percent, JIT 30 percent, BECO 38.2 percent, BS 46.2 percent and CSSH 63 percent. This dissatisfaction by educational facility implies that there was a gap in the outcome of the primary objective of the University those are quality education and community based research. This might be the result of weak procurement system.

On the other hand, there are machineries in JU offices, laboratories and student cafeterias which are not functional from the beginning until now. Sample photographic pictures of the machineries taken in the field survey are shown in the appendix III of this study. The survey picture including four steam tea cooking machines, three steam wet cooking machines & one cafeteria materials washing machine which bought about 5 million birr in JIT students

cafeteria, air flow turbine machine, rolling machine and Hydraulic Shrink machine in school of mechanical engineering, Programmable logic Controller (PLC) machine in school of Electrical Engineering and other laboratory and workshop materials in different schools and departments are not functioning from starting until now for more than four years. Under the field survey of proposal development phase for this study; the researcher observed KYOCERA and Canon photocopy machines in the same office. Using two machineries in one office is not cost effective. In addition to that there are two and more Brother Printers in the same office. Based on the feedback from some staff members, in case of shortage of toner office holders preferred to replace another printer machine. This process adds another cost for the organization and for the country.

The case of such problems like low customers' satisfaction, fear of strategic plan developer, improper and inoperative new machineries in the University expected as weak procurement system. If weak ineffective procurement system was the cause, it costs the millions of birr. Therefore, the major concern here is evaluating the effectiveness of JU's procurement system. This is one of the concerns of this thesis.

Based on the evaluation result of JU's procurement system and the problems explained above that is better to find and check the procurement challenge for JU procurement system. Many studies findings approved different procurement challenges. According to Saul & Getuno (2013) the most prevalent challenges in the public procurement process are choice of procurement methods, record keeping, data and documentation controls, contract management processes, follow-up mechanism, levels of ethics, ICT adoption and buyer-supplier relationship. Some other literatures also investigate procurement problems as lack of competent procurement workforce, competency, relationship, management, communication skills and ability to think laterally (Guinipero, 2000; Thai, 2011).

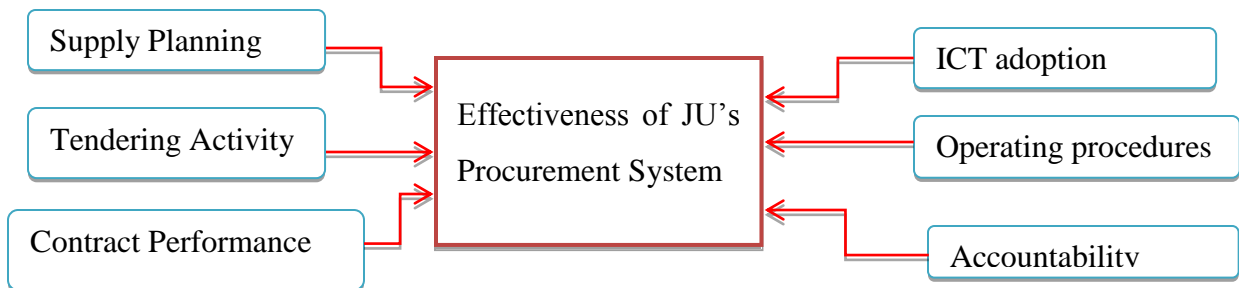
On the other investigations typical IS procurement challenges in the Norwegian public sector were divided into 13 categories. Those categories are requirements specification, change management, cooperation among stakeholders, competence, competition, contracting, inter-municipal cooperation, governmental management, procurement process, rules & regulations, technology & infrastructure, vendors and ICT governance (Erik & Paivarinta,

2013). USAID | Deliver Project, (2013) also points out three major variables which manipulate the procurement activities in service or business organization are supply planning, tendering activity and contract performance. Therefore, if this process perform insufficiently, procurement activity will be ineffective.

The challenges found by the above and other researchers might be the challenges or bottlenecks in Jimma University. Thus, this study intended to shed more light on procurement process, ICT adoption, procurement operating guidelines and accountability (suppliers' commitment) challenges in JU guided by the following question:

1. Is JU's procurement system effective?
2. To what extent the planning stage of procurement process challenges (influence) JU's procurement system?
3. To what extent the Tendering (purchasing) stage of procurement process challenges JU's procurement system?
4. Does contracting performance stage influence (challenges) JU's procurement system?
5. Does ICT usage in procurement influence effectiveness of procurement system in JU?
6. How much JU's procurement system used operating procedures (regulations)?
7. To what extent suppliers' commitment challenges (influence) JU's procurement system?

### 1.3. Hypotheses



*Figure 1.1: Proposed research frame work*

The study pursued to test the following hypotheses:

H<sub>1</sub>: JU's procurement system is effective.

H<sub>2</sub>: Planning stage has no significant effect on effectiveness of JU's procurement.



H<sub>3</sub>: Tendering stage has no significant effect on effectiveness of JU's procurement.

H<sub>4</sub>: Contracting performance leads to embark on effective procurement system in JU.

H<sub>5</sub>: JU procurement system is effective as a result of ICT usage in procurement process.

H<sub>6</sub>: Jimma University embarks on ineffective procurement system since the procurement activity done without well prepared operating procedures (regulations).

H<sub>7</sub>: Accountability (suppliers' commitment) does not significantly influence effectiveness of JU procurement system.

## **1.4. Objectives of the Study**

### **1.4.1. General Objective**

The main objective of this study is to assess the effectiveness of JU procurement system and to identify the challenges associated with procurement system.

### **1.4.2. Specific Objectives**

The specific objectives of this study are:

1. To assess and explain whether Jimma university had an effective procurement system or not.
2. To identify and explain whether the planning process was the basic bottleneck (challenge) to perform effective procurement system in Jimma University or not.
3. To identify and explain whether the tendering/purchasing process was the basic bottleneck (challenge) to performed effective procurement system in or not.
4. To identify whether the contract performance process was the basic bottleneck (challenge) to perform effective procurement system in Jimma University or not.
5. To identify and explain whether ICT adoption, operating procedures and /or supplier's commitments was the basic challenges to perform effective procurement system in Jimma University or not.

## **1.5. Significance of the Study**

This study aided directly or indirectly for Jimma University, Ministry of Education, other researchers and Universities in Ethiopia and abroad.

Jimma University will obtain details assessment evaluation of the procurement system and they will know their level of effectiveness. The procurement department and plan office of Jimma University will identify the gap in their procurement stage and they will improve the gap to make their procurement system effective. It will provide the importance of making strong relationship with suppliers, use of technologies and last users' involvement in the procurement system and to adjust themselves accordingly.

Ministry of Education in Ethiopia will get source of information on how the Universities procurement system was going and for what challenges they exposed. In addition it will help them to develop proper policies that may guide and encourage harmonized procurement guidelines for all universities in the country.

This study may be valuable source of information for other Universities in Ethiopia that face similar challenges. They would make use of this study, as it will provide complementary knowledge useful in formulation of regulatory policy on procurement management.

Researchers and scholars can use this information to add to their understanding of procurement policy in the public universities in Ethiopia. The findings of this study will provide other researchers with required literature for their study. It will further lead to the generation of new knowledge and hence bridge the gap. The study will provide foundation and material for further related research.

## **1.6. Scope of the Study**

The focus of this study is mainly about identification of challenges (bottleneck process; whether planning, tendering and/or contracting) for procurement Practice in Jimma University. The data for this study has been collected from JU staff members those are procurement staffs, procurement committees, tendering committees and inspection and acceptance committees. The study is to identify the procurement process which is the

bottleneck to performing effective procurement in JU. To identify the bottlenecks, first evaluation of the effectiveness of JU procurement has been done.

## 1.7. Structure of the Thesis

The study is structured in five chapters. Chapter One presents the introduction part of the

This study is structured in five chapters. Chapter One presents the introduction part of the study which covers the background, statement of problem, research objectives, specific objectives, research questions, significance of the study and its limitations. Chapter Two presents the literature review on theoretical analysis and empirical studies. Chapter two presents the literature review which specifically presents definitions of key concepts, procurement processes, procurement challenges, competitive procurement methods, the theoretical framework, and empirical literature review.

Chapter Three presents a brief description of the research design and method used for undertaking this study. Chapter Four presents the data analyses and discussion of the key findings of the study on the procurement processes. Chapter Five presents a last part of the study. It provides conclusions and recommendations. Also, it presents recommended areas for future studies. Generally, the outline of the study is illustrated in Figure 1.1 below.



*Figure 1.2: Structure of the study*

## **CHAPTER TWO**

### **2. REVIEW OF RELATED LITERATURES**

#### **2.1. Introduction**

This chapter presents the literature review related to the topic under the study. It attempts to define different concepts as used in the study. It also reviews both theoretical and empirical studies conducted by other professionals in the context of procurement processes, principles of procurement system and challenges (bottlenecks) in the procurement practice.

#### **2.2. Definition of Terms**

##### **2.2.1. Procurement**

According to Musanzikwa (2013) procurement is a process of identifying and obtaining goods and services which includes sourcing, purchasing and covers all activities from identifying potential suppliers through to delivery from supplier to the users or beneficiary. It is favorable that the goods/services are appropriate and that they are procured at the best possible cost to meet the needs of the purchaser in terms of quality and quantity, time, and location. Procurement is a strategic, systematic process of ensuring that maximum value is delivered to the organization, through the identification and selection of suitable and competent suppliers, negotiating, contracting, conducting supply market research, fostering supplier measurement and systems development (Handfield et al., 2011:8). According to PPA (2011) refer to procurement as buying, purchasing, renting, leasing or otherwise acquiring any goods, works or services by a procuring entity and includes all functions that pertain to the obtaining of any goods, works or services, including description of requirements, selection and invitation of tenderers, preparation and award of contracts.

Public procurement constitutes a large part of the market in many countries, and it has the potential of playing an important role in stimulating communities and serving policy goals (Erik and Päivärinta (2013)). A very large proportion of the total spend in most organizations is funded for procurement and it should be managed effectively to achieve optimum value. The procurement function is critical in service delivery and largely

determines costs of public utilities. With this in mind the governments have to set regulations for public procurement.

### **2.2.2. Procurement department**

Procurement Department is the office responsible for the acquisition of supplies, services, and construction in support of the Authority's business. In this study procurement department will mean an entity within the organization which has the control over the procurement function.

### **2.2.3. Challenges**

According to Webster's New Students Dictionary (1964), Challenge means to question the legality or qualifications of something. Challenge can also be defined as questioning the qualification or validity. Generally challenges can be defined as a problem that impedes the operation of something. With regard to public procurement, challenges are problems that hinder the smooth practices of public procurement. Thus, for the purpose of this study the last definition is suitable.

### **2.2.4. Bottlenecks**

Bottlenecks are defined as a constraint or obstacle that limits throughput or the utilization of capacity (CSCMP 2010), resulting in the limited performance of the entire system. In the procurement cycle, bottlenecks often appear as delays, which vary in length, depending on the step in the procurement cycle where the bottleneck occurs. And also sometimes bottlenecks result from personnel shortages, limited access to a designated signatory, or lack of clarity around who is authorized to provide approvals.

### **2.2.5. Purchasing**

According to Handfield *et al.* (2011), purchasing is a functional group (a formal entity on the organizational chart) as well as activity (acquiring goods and services). The purchasing activity is performed in all organizations and businesses (Hugo and Badenhorst-Weiss, 2011). Burt *et al.*, (2010) describe purchasing as a systematic process of acquiring goods, services and equipment that are used in the daily operations of the organization from the

supplier in a legal and ethical manner. This is a simple process of deciding what, when and how much to purchase.

### **2.3. Principles of Public Procurement System**

According to the World Bank (2000), the 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.

Maximizing economy and efficiency in procurement process 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 (VfM). 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 refers to minimizing the costs of resources used without compromising quality. Efficiency refers to maximizing the output for a given level of input, and effectiveness refers to actual outcomes compared to anticipated outcomes (Bucharest, 2003). Secondly, it refers to promoting and encouraging competition among eligible suppliers, contractors or service providers in acquisition of goods, works and services by PEs 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.

Thirdly, ensuring fairness and equity in procurement proceedings is an important pillar in public procurement. This is attained by PEs 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).

The Act requires that 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. Where not suppliers or contractors not paid on time interests must be charged for compensation of loss of value and the same is applied to suppliers or contractors delaying delivery of works or goods by imposing liquidated damages. Fourthly, the importance of integrity, accountability, and transparency in procurement process forms other basic principles of public procurement.

The principle of transparency is concerned with the legality, openness and publicity of public procurement awarding procedures adopted by PE. 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). 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 integrity requires that the procurement process are 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 PE and the public at large (Ibid). 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 PEs 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).

## **2.4. Procurement Challenges**

Many study findings approved different procurement challenges. The changes are impacting pressure on how the procurement function performs its internal and external mandate, processes and procedures in order to achieve its objectives. Interactions between various elements, professionalism, staffing levels and budget resources, procurement organizational structure whether centralized or decentralized, procurement regulations, rules and guidance and internal control policies, all need attention and influence the performance of the procurement function. In addition, procurement is faced by challenges imposed by a variety of environment factors (external factors) such as market, legal environment, political environment, organizational and socio-economic environmental factors (Musanzikwa, 2013; Matthews, 2005).

As one of the study in Kenya Saul, Getuno, Osoro and Mburu (2013) concluded as common challenges in the public procurement process in Kenya are the selection of procurement methods, record keeping, data and documentation controls, contract management processes, follow up mechanism, levels of ethics, ICT adoption and buyer-supplier relationship. Some other literatures also investigate procurement problems as lack of competent procurement workforce, competency, relationship, management, communication skills and ability to think laterally (Guinipero, 2000; Thai, 2011).



In the same manner; incompetent people tasked with the responsibility to procure resources, inadequate market enquiry in the awarding of most tenders and high level of corruption activities in the public procurement are challenges of procurement investigated by Musanzikwa (2013).

Even though the Erik and Paivarinta (2013) study defined 98 revealed typical challenges for IS procurement in the Norwegian public sector by dividing in to 13 categories from Dulphi study, the most highly ranked procurement challenges are too much focus on costs from vendor side, finding and using good assessment criteria, integration & compatibility, Change of work processes and benefits realization, clear requirements specification.

From different study's findings determined above this study will investigate the bottleneck in JU procurement practice weather the above listed challenges or not.

## **2.5. Procurement Process**

Performing operational procurement activities in daily activities used to secure the actual availability of goods and services in the Organization (McCue and Gianakis (2001)).

Sollish & Semanik, (2012) determined as procurement process includes the identification of the need, through to the end of a service contract or the end of the useful life of an asset. Musanzikwa (2013) also points out three steps of procurement procedures which are need identification, planning and specification of goods or services required, and sourcing, awarding, and supplier management to facilitate timely delivery.

According to McCue and Gianakis (2001) operational procurement activities are ordering goods and services, monitoring orders and receiving goods and services, inventory management (just-in-time), and controlling and administration, including paying and solving operational problems.

According to USAID | DELIVER PROJECT (2013) the three major variables which manipulate the procurement activities in service or business organization are Supply Planning, Purchasing Activity and Contract Performance.

In this study the three major variables; supply planning, purchasing/tendering activity and contract performance which manipulate the procurement activities are considered. Under supply planning the variables of supply requirements, budgeting and approval process,

submit procurement requisitions and specifications and release funds to procuring units are included. Whereas Purchasing Activity includes Plan the purchasing work (Assess procurement options, plan contract groupings and schedule purchasing work), Prepare bidding documents, obtain approvals, Invite offers (Advertise opportunity; provide bidding documents; hold pre-bid meeting; respond to questions by potential bidders), Select suppliers and obtain approvals (Open bids; prepare preliminary examination worksheet; bid evaluation committee deliberates and make decisions; submit decisions for required approvals), award contracts (Notify successful bidder; publish results; negotiate minor points; process acceptance and signatures; obtain performance security), Arrange payment guarantee ( Make down payment, issue letter of credit). Contract Performance categorized under Perform pre-shipment inspection/testing, clear goods through customs and Perform post-shipment inspection/testing.

## **2.6. Research Frame work**

For the purpose of this study, integrity of the procurement processes in JU's procurement system, accountability (supplier's commitment), ICT adoption and procurement regulation was a major concern. The extent to which these procurement processes adhere to the hallmarks of JU procurement aforementioned has a vital role in attaining the effectiveness of JU procurement system. The procurement system operations depend on legal framework which includes policy, law, regulation, complaints review and institutional set of procurement functions.

The procurement processes which have been considered for this study are three major variables; supply planning, purchasing/tendering activity and contract performance which manipulate the procurement activities.

Under supply planning the variables of supply requirements, submit procurement requisitions and specifications, release funds to procuring units, announcement for general Procurement Notice are included. Whereas Purchasing Activity includes prepare bidding documents, obtain approvals, invite offers (advertise opportunity; provide bidding documents; hold pre-bid meeting; respond to questions by potential bidders), select suppliers and obtain approvals (Open bids; prepare preliminary examination worksheet; bid

evaluation committee deliberates and make decisions; submit decisions for required approvals), award contracts (Notify successful bidder; publish results; negotiate minor points; process acceptance and signatures; obtain performance security), arrange payment guarantee ( make down payment, issue letter of credit).

Contract Performance categorized under Perform pre-shipment inspection/testing, clear goods through customs and Perform post-shipment inspection/testing, facilitate training for new machineries.

Accountability, ICT adoption and operating regulations also play great impact in effectiveness of procurement system.

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 and Olaya, 2006). Therefore, in this study accountability focused only on the suppliers commitments such as the quality consistency, delivery time, cost per quality appropriateness and the intention to satisfy their customers need.

According to Bell (2001) changes must take place in procurement process if electronic solutions are to become predominant and companies are to remain competitive in the new era. Therefore ICT is critical in procurement process. Rankin et al (2006) published a study into drivers and barriers for e-procurement in Canada. This was the first piece of research to investigate drivers and barriers in e-Procurement. This confirmed that the drivers and barriers identified from the goods and Services industries could be applied to the construction industry. With a stationary product and a production line that changes locations, greater complexity and economic value. This study focused to evaluate level of usage of ICT in procurement system and its influence in effectiveness of JU's procurement System. Process procurement orders with computer, electronic data interchange with suppliers and ICT supported procurement communication included in this category.

Operating procedure used to guide and show the way, steps and process that should be follow in procurement activities. This study included how much the formally written

guideline and long-range procurement plan prepared and has been operational, PPA 2009 implementation and usefulness of centralized purchasing system.

Effectiveness is the ability of a person, function or organization to accomplish a given goal, purpose or mission [Kothari K. (2004)]. According to Kothari K. (2004) effectiveness of the procurement process is measured through achievement of key performance parameters notably: the timeliness, quality and quantity of the purchase. The PEs through Contract Manager are responsible for effective management and monitoring of scope, quality and timely delivery of goods or services, process and timely completion of works at acceptable quality in accordance with the terms and conditions of each contract (RTT, 2005). An effective public procurement system allows suppliers to provide satisfactory quality, service and price within a timely delivery schedule. The basic tenet of procurement is straightforward: acquire the right item at the right time, and at the right price, to support determined actions. Although the formula is simple - it involves questions of accountability, integrity and value with effects far beyond the actual buyer/seller transactions at its center. A serious and sustained review of such decisions is needed to properly manage the public procurement function (Kipchilat, 2006).

In this study high quality, proper quantity, moderate pricing, delivery time and raw materials accessibility for machineries considered as the determinant of effectiveness of procurement system which is the dependent variable for this study. People have found many ways to define what quality mean. Some of the most popular definitions for quality are listed below. A key element of what quality means to users of products and services. The term quality for this study is expressed in the following terms. Quality is a degree of excellence, conformance to requirements, totality of characteristics which act to satisfy a need, fitness for use, fitness for purpose, freedom from defects and delighting customers.

According to USAID | DELIVER PROJECT (2013) issues with the quality of product procured may result in a bottleneck: the need to repeat the procurement process should the goods not meet established quality standards or not pass quality testing requirements. This type of bottleneck can be linked to steps in all three phases of procurement, including

defining product specifications during the supply planning phase; supplier selection during the purchasing phase; and inspection and testing in the contract performance phase.

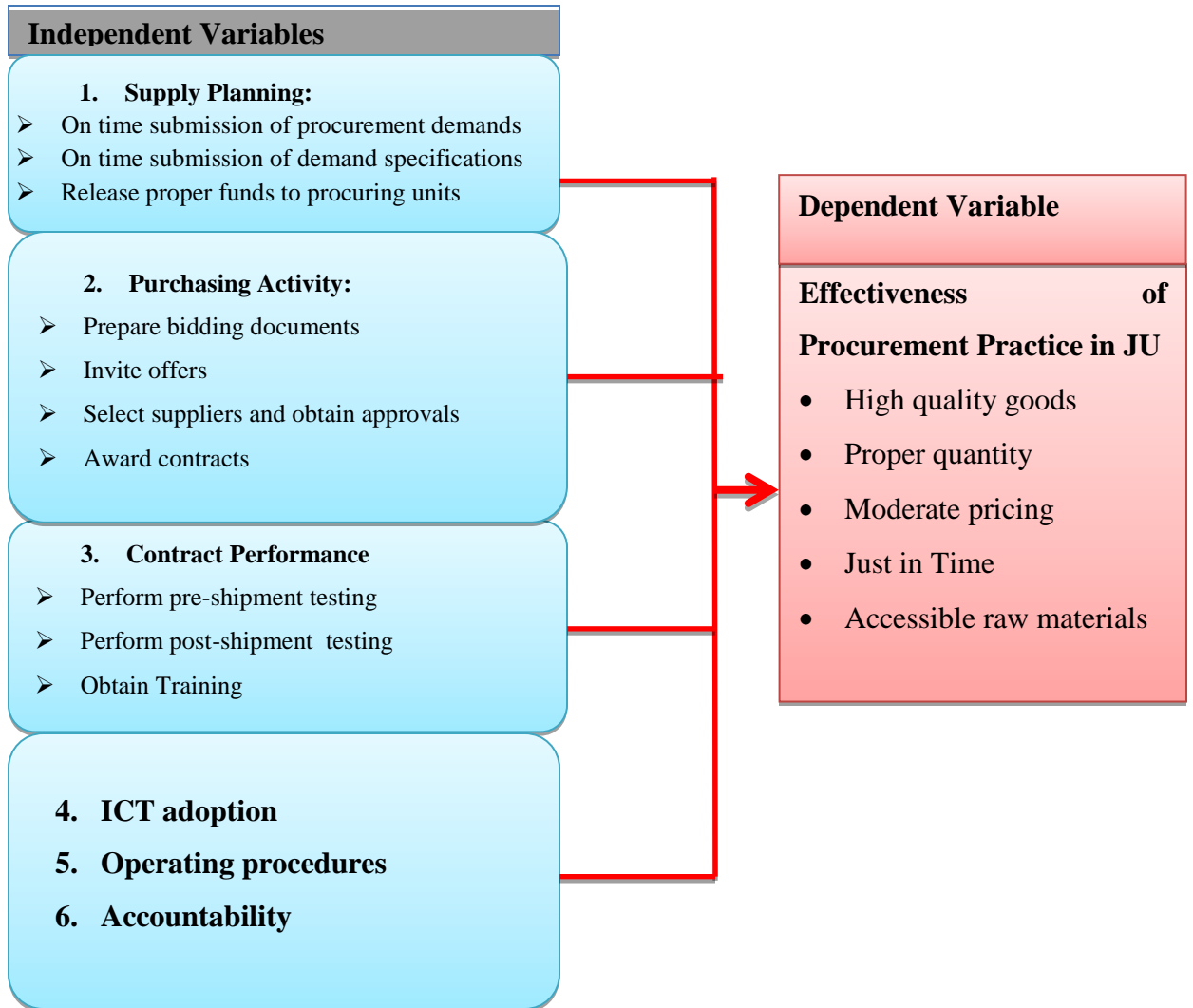


Figure 2.1: Research Framework

## 2.7. Public Procurement in Ethiopia

According to Getnet A. & Tilahun A. (2014) prior to public procurement reform in Ethiopia, noncompliance with the country's public procurement rules and regulations was observed. These include inefficiency, non-transparent procurement processes, and lack of knowledge of rules and regulations. Their findings indicate that as familiarity in public procurement, rules and regulations, transparency in public procurement processes, ethics in public procurement and efficiency in public procurement processes have a positive and statistically significant impact on effective public procurement implementation. The accountability in public procurement, though have positive associations with effective public procurement implementation, did not have a significant impact on effective public procurement implementation.

In 2009, the Government of Ethiopia enacted procurement and property administration proclamation No 649/2009 and it has established the Public Procurement and Property Administration Agency (PPA) accountable to the Ministry of Finance and Economic Development to manage the public procurement activities.

**Table 1.0.1: Legal Framework of public procurement in Ethiopia Proclamation No. 649/2009**

No.	Legal Framework	Details
1	Public Procurement proclamation No 649/2009	Provide a comprehensive legal regime to harmonize and safeguard public procurement
2	Public Procurement Manual	Provides practical guidance and step-by-step procedures for undertaking procurement in accordance with the proclamation.
3	Standard Tender Documents (STD)	They comprise standard invitation and contract documents for procurement of all values. There are separate standard tender documents for goods, works and services.
4	Public Procurement Regulations	They contain detailed rules and procedures for all aspects of the procurement system, the operations of Public Procurement Authority (PPA) and procurement entities and the conduct of procurement activities.
5	Guidelines	issued by the Public Procurement Authority (PPA) which provides supplementary guidance on disposal, single source procurement, margins of preference, framework contract agreements, sustainable public procurement etc.

Source: PPA Regulations (2010) and Getnet Amdework, Tilahun Aemiro (2014)

# CHAPTER THREE

## 3. RESEARCH DESIGN AND METHODOLOGY

### 3.1. Introduction

This chapter provides the roadmap of the research adopted to meet the objectives of the study as described in chapter one. A brief description of the research process and approaches in collecting and analyzing data and the reasons in selecting particular methods are presented. Therefore, the chapter provides the research design, sampling technique and sampling size, methods of data collection as well as data processing and analysis. The procedures adopted to attain acceptable validity of the research is also explained.

### 3.2. Research Design

Conclusive research approaches were adopted in this study. The conclusive research approach in this study observed in forms of descriptive and explanatory. Descriptive survey is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals (Oyuke and Shale, 2014). The study applied descriptive study approach in analyzing events in the study statistics, which helped in revealing answers to the study questions.

The explanatory research aimed at formulating a problem for more precise investigation or developing the working hypothesis from an operational point of view. Its major emphasis is on the discovery of ideas and insights (Kothari, 2004). The field survey observation and the analysis result explained by explanatory method of design to strength the findings of the outcome in this study.

### **3.3. Sampling Design**

#### **3.3.1. Population**

According to Sekaran, (2005), population is a group of persons, objects or items which samples have been taken for measurement or it is an entire group of persons, or elements that have at least one thing in common. The study targeted the staff members involved in procurement activities and procurement department of JU. This study included Department heads, academic staffs, administrative staffs, laboratory assistances involved in procurement committee, purchasers, procurement department, etc. All these staffs, in one way or another, influence or are influenced by the procurement activities. This population was sought to be included due to limited empirical study on the challenges of the organization on the effectiveness of procurement performance.

#### **3.3.2. Sample Size**

Mugenda (2003) asserts that sampling is the part of the statistical practice concerned with the selection of individual or observations intended to yield some knowledge about a population of concern, especially for the purposes of statistical inferences. He advises that the researchers have to use 30% and above of the total target population as a sample size for it to be accepted as a good representative sample.

There are eight colleges and institutes in Jimma University as listed in table 3.1 below. This study used proportional sampling procedures to each college (50 percent of the population from procurement participants in each college) & random sampling technique from 50 percent proportion respondents in college. The researcher selected 93 respondents randomly from the total of 187 procurement staffs and the procurement committees of the department in all colleges/institutes as the key respondents to respond for prepared questions. Finally 72 respondents which are 39% percent of the total population filled the questioners. Therefore the sample population for this study was 72 respondents which selected with proportional sampling procedures and random sampling techniques. Thus this sample is reasonable to its representation based on Mugenda's observation.



**Table 3.1:** *Distribution Population and the Sample taken from each Collage:*

No.	Colleges/ Institutes	Active staffs involved in procurement Activities	Sample taken respondents (Questioners distributed)	Questioners filled and collected
1	JIT	30	15	13
2	JUAVMC	12	6	4
3	IHS	22	11	10
4	BECO	10	5	4
5	Natural Science	18	9	8
6	CSSH	16	8	6
7	Low and Governance	8	4	3
8	Behavioral Science	7	3	3
9	JU procurement Department	64	32	22
<b>Total</b>		<b>187</b>	<b>93</b>	<b>72</b>

### 3.4. Data Collection Instruments

Both primary and secondary data was adopted for this study. Primary data is the data which will be collected for the first time, and regarded as origin in character (Kothari, 2004). Thus, the study used structured questionnaires as primary tools for data collection.

The structured questionnaire as the main tool assisted & guided for the respondents to answer the research questions of the study with introduction of the researcher. This approach has advantage of being clarified about the content of the questionnaire. Even though, the open ended comment asked to gather hidden factors at the end of the questionnaire, close ended questions were used to standardize the responses and took least time for respondents to attend the questions. The questionnaires were designed and distributed to workers during the work hours and were collected later so that they can have a plenty of time to answer the questions accurately.

Secondary data was collected from literature review of published documents, online references, website provided source for current policies guiding procurement processes, university's internal self-assessment reports, journal articles highlighting general issues that arise in public universities as well as books.

The two important concepts to be built into the research design are validity and reliability (White, 2000). In this regard, validity concerned with the idea that all the research design fully addresses the research questions and objectives thus requiring much efforts on planning prior to conducting the research. To ensure validity of measures, data will gather from the respondents. Questionnaires and interviews will apply to clear any ambiguity that would have arisen. The unity ensure adequate representation. On the other hand, reliability concerned with consistency. One of the most commonly used indicators of internal consistency is Cronbach's alpha coefficient. The Cronbach alpha coefficient of a scale must be above 0.7 (DeVellis 2003 & SPSS Survival Manual 4<sup>th</sup> edit).

In this study the Cronbach Alpha's simulation output result from SPSS result is 0.79 for all questions which is more than 0.7. Therefore, according to DeVellis 2003 the questioners in this study are reliable. On the other hand some of the questionnaires were taken from literatures which published from acceptable journals.

In this study questions will asked to different respondents and data will be compared to get concrete information.

### **3.5. Data Analysis Method**

According to Mugenda A. & Mugenda O. (2003), data analysis is the process of bringing order, structure and meaning to the mass of information collected. Part of data collected was analyzed and responses from collected questionnaires were analyzed using quantitative method. Quantitative data was analyzed by descriptive statistics and explain by explanatory methods. The study adopted a descriptive analysis by using descriptive statistics such as means, standard deviations, and multiple linear regressions.

The support of computer programs such as Microsoft Excel and Statistical Package for Social Science (SPSS) employed to analyze the collected data and to help for interpret the findings. SPSS Version 20 has got descriptive statistical features that assist in variable response comparison and gave a clear indication of response frequencies (Mugenda & Mugenda, 2003).

Based on the descriptive statistics (frequency and Mean) value, the challenges (bottlenecks) of procurement practices of JU have been assessed. Multiple linear regression was used as a model for this study.

The Likert Scale was adopted for analyzing procurement processes:

1= Strongly Disagree; 2 = Disagree; 3 = Uncertain; 4 = Agree, 5 = Strongly Agree.

### **3.6. Ethical Consideration**

This study considered ethical consideration of plagiarism and presentation of others' idea as once own. Plagiarism is wrongful appropriation of others' idea, thoughts, expression, close imitation etc. as if it were our own original work. The researcher was aware of the danger of being bias. Therefore, the researcher tried to be impartial and working without bias (Kothari, 2010). Generally, this study was conducted in accordance with the ethics requirements and the rights of individuals as stipulated in Ethiopian Constitution.

# CHAPTER FOUR

## 4. RESULT AND DISCUSSION

### 4.1. Introduction

This chapter reports the major findings of the study which collected using questionnaires. It includes the approval of the ineffectiveness of the procurement system, identification of the main problematic areas in the procurement processes under different stages of the procurement cycle and their effects towards effectiveness of JU procurement system.

A total of 93 questionnaires administered to JU staffs that involved in procurement activities. Out of those, 72 questionnaires (78.3%) returned dully filled and were valid for analysis. According to Mugenda (2003) a response rate above 70% is preferable. Therefore, 78.3 % response rate in this study is good enough to generalize the findings to the whole population.

### 4.2. Characteristics of the Respondents

The distribution of the staff members by the number of years worked is presented in Table 4.1 below.

**Table 4.1:** *Distribution of the Respondents' Years of Experience*

		Frequency	Percent
Valid	Less than 2 years	6	8.3
	2-5years	8	11.1
	5-10 years	28	38.9
	Over 10 years	30	41.7
	Total	72	100.0

Table 4.1 shows that the least number of respondents have worked in Jimma University for less than 5 years representing 8.3 percent of the respondents for less than two years & 11.1 percent of the respondents have worked for two to five years. 38.9 percent of the total respondents have worked for five to ten years and the remaining 41.7 percent respondents have worked over ten years. Thus, the majority of the respondents have worked in Jimma University over five years representing 80.6 percent of the total

respondents surveyed. These findings show that the respondents have worked with their respective colleges in JU for long enough to understand the procurement process and how much effective it was. Hence they provided reliable data for the study.

Procurement services subdivided into several areas and this section sought to find out the area of procurement that the respondents were involved in. The results are shown in Table 4.2 below.

**Table 4.2:** Areas in which the respondents were involved in

		Frequency	Percent
Valid	Tender Committee	9	12.5
	Procurement Committee	17	23.6
	Inspection and Acceptance Committee	24	33.3
	Procurement Staff	22	30.6
	Total	72	100.0

Table 4.2 above reveals that majority of the respondents were inspection and acceptance committees represented by 33.3 percent. About 30.6 percent of the respondents were in the procurement staff, 23.6 percent were in procurement committees while 12.5 percent were tender committees. These findings confirm that the respondents were drawn from different procurement activities hence more representative of the experience on procurement process at the colleges/institutes because different designations feel different challenges in the procurement processes.

### 4.3. Level of Effectiveness in JU Procurement System

**Table 4.3:** Ineffectiveness of JU's Procurement System in terms of Frequency and Mean

		Frequency	Percent
Valid	Disagree	4	5.6
	Uncertain	12	16.7
	Agree	53	73.6
	Strongly	3	4.2
	Agree	3	4.2
	Total	72	100.0

#### Descriptive Statistics

	N	Mean	Std. Deviation
Ineffectiveness of JU's Procurement system	72	3.7639	.61651

Notes: Descriptive statistics based on 5 point scale ranging from “Strongly Disagreed” to “Strongly agreed.”

Table 4.3 shows that 77.8% of the respondents agreed about the ineffectiveness of JU's procurement system where as 16.7 % respondents uncertain and 5.6 % of the respondents disagreed the ineffectiveness of the JU procurement system. On the other hand, the mean value for the response of stationaries and machineries procured in JU in terms of low quality, improper quantity, not in optimal (moderate) price, absence of raw materials, just not in time has the value of 3.76 which indicates the Agreed one. Therefore, this implies that Jimma University procurement system was not effective.

According to Jimma University strategic plan for research, innovation and community services, 2016-2020; poor, delayed and rigid purchasing system in JU considered as weakness and non-productive purchasing system for laboratory based researches, considered as threats to implement the research, innovation and community services. On the other hand the 2017 JU's customers' satisfaction survey report revealed that 42.2% of the respondents dissatisfied by educational facility. To show the figures which indicating the satisfaction level of some colleges/institutes in JU; the law school, JIT, BECO, PH and CSSH has the level of satisfaction of 8%,30%, 38.2%, 46.2% and 63% respectively. This dissatisfaction by educational facility implies that there was a gap in the outcome of the primary objective of the organization (quality education) and this could be fulfilled by the procurement system. Thus, it indicates that there was the gap in procurement system.

On the other hand four steam tea cooking machines, three steam wet cooking machines & one cafeteria material washing machine which bought more than 5 million birr in JIT students cafeteria; air- flow turbine machine, rolling machine and Hydraulic Shrink machine in school of mechanical engineering and other Laboratory and workshop materials in different schools and departments that cost in millions but that are not functioning from starting until now for more than four years. In addition some stationary materials are low quality like pens, marker, chock, etc. were not properly working. Some of the photographical pictures of those indicators shown in the appendix III of this paper. In most of Jimma university offices, there are Canon photocopy machine and KYOCERA photocopy machine in the same office. Using two machineries in one office adds other cost in the organization. There are two and more Brother Printers in the same office because of the shortage of toner for brother printers. At the time of shortage of tonner,

they preferred to replace another printer machine rather replacing the toner. This is the result of weak (ineffective) procurement system.

Generally, according to the respondents response listed above about **78%** of the respondents agreed on the ineffectiveness of JU's procurement system. The fears from strategic plan developers generated from the expectation of the previous weak JU's procurement system. Low satisfaction level of customers and staffs in education facility is the indicator of weakness of procurement system. Thus, based on the above listed justification, JU's procurement system was ineffective. To make procurement system effective that is better to identify the bottlenecks (challenges) in the procurement process of JU and that is better to check about what extent JU's procurement system tried to use procurement supporting mechanisms and facilities.

#### 4.4. Contribution of Procurement Stages for Effectiveness of JU's Procurement System

**Table 4.4:** *Procurement Stages' Contribution for Effectiveness of JU Procurement:*

<b>Planning process for effectiveness of JU's Procurement System</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Rank</b>
Timely approval of procurement plan and issuance to the public	2.53	1.256	6
Procurement is published in the website and Local Newspapers.	2.59	1.276	7
Provision of procurement requirements to the Procurement department	2.69	1.075	8
Budget had been released for every procurement requirements	3.50	.949	10
Supply & demand clearly defined & appeared in the Annual Procurement Plan	3.58	1.007	
specifications of demands clearly determined	3.67	.987	
<b>Total Average Procurement Planning</b>	<b>3.075</b>	<b>.51</b>	
<b>Purchasing process for effectiveness of JU's Procurement System</b>			
Verification of successful bidder's price to the market prices prior to award of tender	2.47	1.007	5
Advertisements in approved media & provide bidding documents	2.79	1.266	9
Completion of Tender Evaluation on time	3.50	.964	11
Evaluation based on criteria stipulated in the bidding document issued	3.60	.974	
Diligence to prospective successful bidder before award of tender	3.68	.802	
Arrange payment guarantee	3.74	.731	
Prepared bidding documents for each procuring phase	3.75	.707	
Select suppliers and obtain approvals	3.83	.934	
<b>Total Average Procurement Tendering</b>	<b>3.42</b>	<b>.597</b>	
<b>Contracting process for effectiveness of JU's Procurement System</b>			
Pre-shipment testing has performed for machineries, devices & equipment	1.60	.68290	1
Post-shipment testing is carefully performed	1.84	.78111	2
Post-shipment testing & receiving activities done by last users	1.90	.69525	3
Suppliers gave the training for users	1.95	.59191	4
<b>Total Average Procurement Contracting</b>	<b>1.79</b>	<b>.46</b>	

Notes: Descriptive statistics based on 5 point scale ranging from "Strongly Disagreed" to "Strongly agreed."

##### 4.4.1. Procurement Planning Stage

It should be noted that the second study objective was to examine procurement planning process towards ineffectiveness of JU's procurement system. The findings and discussion are presented in the context of preparation of supply & demand clearly in the Annual Procurement Plan, clear determination of specifications of demands, release budget for



every procurement requirements, timely approval of procurement plan, and publishing of general procurement notices in appropriate media. Since the enactment of the Ethiopian FPPD 2010, there is emphasis on the preparation of the procurement plan for achieving effective procurement process.

The study in this category sought to find out whether or not procurement planning is the challenges that the JU procurement practices face to achieve envisaged goals. Depending on the result, the study identified the particular challenges to achieve envisaged procurement goals.

**Table 4.5:** *Contribution of Procurement Planning Stage for JU Procurement System*

<b>Planning process in ineffectiveness of JU's Procurement System</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Rank</b>
Timely approval of procurement plan and issuance to the public	2.53	1.256	6
Procurement is published in the website and Local Newspapers.	2.59	1.276	7
Provision of procurement requirements to the Procurement department	2.69	1.075	8
Budget had been released for every procurement requirements	3.50	.949	
Supply & demand clearly defined & appeared in the Annual Procurement Plan	3.58	1.007	
Specifications of demands clearly determined	3.67	.987	
<b>Procurement Planning Stage</b>	<b>3.08</b>	<b>.51</b>	

Notes: Descriptive statistics based on 5 point scale ranging from “Strongly Disagreed” to “Strongly agreed.”

According to Public Procurement Regulatory Authority, the main objective of the General Procurement Notices (GPN) is to alert the public on various procurement opportunities available for each PE on particular financial year (time). This enables the private sector to forecast and prepare themselves on where to establish their business or trade with the public entities. The advertisement of the GPN to the public encourage competition as many suppliers, contractors or service providers become aware of the opportunities available hence improving the effectiveness of the procurement system.

It is customary under the Public Procurement Act, all procurement opportunities been advertised in the local newspapers, website, and journal for ensuring transparency, fairness

and adequate competition on a particular procurement need. This ensured the JU in achieving competitive bidding process and thus enabling the JU selecting service providers or suppliers with competitive prices.

Failure to obtain actual prices through market survey has negative impact on the performance of the contract as well as tendering process. Such impacts are cancellation of tender process due to inadequate budget, excessive variation orders and failure to achieve anticipated quality of services or goods.

Table 4.5 above shows that the responses in this category indicate that the effect of procurement planning in JU's procurement system was not the challenge for effective procurement system. This indicated by the mean value for procurement planning which is 3.08. This indicates that respondents do not consider planning as major challenge for JU procurement activities.

As the respondents feedback shows the positive contribution of planning for effectiveness of JU's procurement system is the result of the required budget released for every procurement requirements by ministry of education, colleges/Departments in JU have made clearly defined demand requirements in the Annual Procurement Plan and they determined clear specifications of demands as indicated by means of 3.50, 3.58 and 3.67 respectively.

Even though, the planning stage was not much the challenge for JU's procurement system, the following three respective specific determinants of the planning stage has negative impact on JU's procurement system and they need some improvement to make the system effective;

- ✚ Timely approval of procurement plan and issuance to the respective College which indicated by a mean 2.53,
- ✚ Publishing process of procurement in the website and Local Newspapers which indicated by a mean 2.59 and
- ✚ Provision of procurement requirements to the procurement department as indicted by a mean 2.69.

## Summary of Parts:

The planning stage was not the challenge to make effective procurement system in JU. Even though, the planning was not much the challenge for JU's procurement system, the following specific determinants of the planning stage had negative contribution to make effective procurement system in JU. The first is timely approval of procurement plan and issuance to the respective College. The second is publishing process of procurement in the website and Local Newspapers and the third is provision of procurement requirements to the procurement department.

### 4.4.2. Purchasing/Tendering Stage

The third objective of this study was to measure the extent to which purchasing process contributed to the effectiveness of JU's procurement system. The analysis, finding and discussion in this part focused on preparation of bidding documents, advertisements of tender opportunities, selection and approval of suppliers, timely tender evaluation based on the criteria stipulated, conducting due diligence on successful bidder, verification of successful bid price to market prices and arrangement of payment guarantee.

**Table 4.6:** Respondents' Opinions on Contribution of Tendering Stage for JU Procurement System

<b>Tendering stage for effectiveness of JU's Procurement System</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Rank</b>
Verification of successful bidder's price to the market prices prior to award of tender	2.47	1.007	5
Advertisements in approved media & provide bidding documents	2.79	1.266	9
Completion of Tender Evaluation on time	3.50	.964	
Evaluation based on criteria stipulated in the bidding document issued	3.60	.974	
Diligence to prospective successful bidder before award of tender	3.68	.802	
Arrange payment guarantee	3.74	.731	
Prepared bidding documents for each procuring phase	3.75	.707	
Select suppliers and obtain approvals	3.83	.934	
<b>The Tendering Process</b>	<b>3.420</b>	<b>.5979</b>	

Notes: Descriptive statistics based on 5 point scale ranging from "Strongly Disagreed" to "Strongly agreed."

**Verification of successful bidder's price against market prices:** the expectation of the buyers is that cost incurred by the procurement entities for acquiring or purchasing of goods or services do not have substantial difference on prices from different procurement entities on procurement of the same or similar nature and type. This part verifies the cost of the successful bidders against the market prices.

As table 4.6 shows that the respondents disagreed that bid prices are verified prior to award to the successful bidder in JU procurement system as indicated by a mean of 2.47. Thus, it revealed that bid prices were not verified prior to award to the successful bidder. This may results to uneconomical contract awards particularly excessive higher prices than the market prices, though their contract prices are within the budget.

**Advertisements of tender opportunities:** According to PPA (2004), the Public Procurement regulations of Government Notice requires every Procurement Entities to advertise approved tender notices at least twice in one or more newspapers of national circulation. The essence of adequate publication is to provide equal opportunity by all eligible suppliers or contractors and attract as many numbers of economic operators as possible to ensure high competition, hence attaining value for money. The opposite of this practice is to deny access to public procurement opportunities and encourage malpractice in the procurement process.

The results presented in the table 4.6 above shows that JU did not advertised the procurement performed in approved media & they did not provide bidding documents as indicated by a mean of 2.79.

**Completion of Tender Evaluation On time:** Evaluation of bids submitted to the Procurement Entity is a major critical activity as it is one of the determining factors for selection of the best supplier or service provider. It provides assurance of the goods, services or works to be delivered by successful bidder. Therefore, on time & quality evaluation in the respective procurement requirement has significant impact to the effectiveness and quality of anticipated deliverables. According to the findings, the respondents agreed that tender evaluation was completed on time in the purchasing process as indicated by a mean of 3.50. This implies that on time tender evaluation in purchasing process was not the challenge to performed effective procurement JU.

**Tender evaluation based on the criteria stipulated in the bidding document issued:**

Evaluation process is a key step towards successful selection of the qualified supplier or service provider for a particular procurement. According to PPA (2004), evaluation has to be conducted according to the criteria set forth in the solicitation document. The study was interested to look at this, and whether or not Procurement in JU carried out evaluation work in accordance with the tender evaluation criteria.

As table 4.6 shows that the respondents agreed that evaluation of tender was done based on the criteria stipulated in the bidding document as indicated by a mean of 3.60. This implies that evaluating of tender based on the criteria in purchasing process was not the challenge to performed effective procurement in JU.

**Diligence to prospective successful bidder before award of tender:** The issues of forgery of documents and deception can be well established under this process. The importance of this exercise is that, it provides assurance and safeguards the public entity from non-performance of the suppliers or service providers and any other illegal acts. This process ensures that successful bidders have legal capacity required to execute the procurement contract without illegal acts, unnecessary delays and poor quality of deliverables. It eliminates the chance of awarding tender to pocket companies which ensure that the procurement processes are efficient and effective resulting to effective procurement system.

The findings of the study in table 4.6 revealed that the respondents agreed that diligence to prospective successful bidder taking place before award of tender in JU as indicated by a mean of 3.68. Thus, the majority of the respondents revealed that diligence to prospective successful bidder taking place before award of tender.

**Arrangement of payment guarantee:** Arrange payment guarantee does mean that issue letter of credit and make down payment. The suppliers and service providers motivate and initiate themselves to fulfill the pre-condition and acquire the payment based on the arranged guarantee if the guarantee setting in the tendering process of the institution.

According to the findings, the respondents agreed that the arrangement of payment guarantee involved in the purchasing process of JU as indicated by a mean of 3.74. Thus,

arrangement of payment guarantee was not the challenge for JU effective procurement system.

**Preparation of appropriate bidding documents:** The solicitation document is a determining factor for the future performance of the contract delivery. The quality and time for delivery of goods or works will solely depend on adequacy of the bidding documents issued to prospective bidders. According to Larasati and Watanabe (2010), unclear bidding document is one of the major risks in procurement process experienced by the public sector. The poorly prepared bidding documents may result to submission of non-responsive bids, selection of incompetent suppliers or contractors and complaints by some bidders which also may delay the whole tendering process. Moreover, the poorly prepared bidding documents have impact on contract management such as cost escalation, delays, disputes, poor quality of deliverables and excessive variations.

According to the findings, the respondents agreed that bidding documents were prepared adequately in JU procurement system as indicated by a mean of 3.75. Therefore, appropriate bidding document was prepared in JU's procurement system and it was not the case for JU's ineffective procurement system. In other words, preparation of appropriate bidding documents was not the challenge to made JU's procurement an effective.

**Select suppliers and obtain approvals:** As table 4.6 shows the respondents agreed that the task of obtaining approvals and supplier selection in JU's procurement system was done as required as possible as indicated by a mean of 3.83. Therefore, from the above findings the result shows the task of obtaining approvals and supplier selection in JU was not the challenge for JU's procurement system.

### **Summary of Parts:**

As table 4.6 shows in this category, the mean for tendering process is 3.42. This indicates that respondents have not considered tendering process as major bottleneck (challenge) of their procurement system. If tendering stage compared to the planning stages, tendering seems rather insignificant (not the challenge).

Although, the tendering stage was not the case for JU's ineffective procurement system, the particular determinants those are verification of successful bidder's price to the market

prices prior to award of tender and advertisement in approved media were challenged the JU's procurement system as indicated by the means 2.47 and 2.79 respectively.

Generally in this category (in tendering process), the results presented in the table above revealed that the first two determinants mean that "verification of successful bidder's price against market prices" and "advertisements of tender opportunities" were not done as required as possible and they had negative contribution however the remaining components of tendering process had positive contribution for JU's procurement system effectiveness. This implies that the negatively contributing components were the challenges (bottlenecks) to made JU's procurement system effective.

#### **4.4.3. Contracting Performance Stage**

The fourth objective of this study was to assess and evaluate the contribution of contract performance for effectiveness of JU procurement system. The analysis and discussion of findings on contract performance are summarized on issues related to pre-shipment inspection, post-shipment inspection, last user involvement in inspection and receiving post-shipment activities, and prepare training for users when supply new machineries. The contract performance ensures that goods or services delivered conforms to the terms and conditions of the contract in the specified quality, on agreed time and cost, thus achieving effectiveness of the public procurement system.

Pre-shipment and Post-shipment Inspections are key factors for supply chain management and a reliable quality assurance tool for validating the quality of goods purchased from suppliers within the country or from various parts of the world.

**Table 4.7:** Respondents' Opinion on the Contribution of Procurement Contract performance Stage for JU Procurement System

		Standard Disagree	Disagree	Uncertain	Agree	S. Agree	Mean	Std. Dev.	Rank
Pre-shipment testing has performed for machineries, devices & equipment	Frequency	33	36	2	0	1	1.61	.68	1
	Percent	45.8	50	2.8	0	1.4			
Post-shipment testing is carefully performed	Frequency	22	44	2	3	1	1.84	.78	2
	Percent	30.6	61.1	2.8	4.2	1.4			
Post-shipment testing & receiving activities done by last users	Frequency	17	49	2	4	0	1.90	.69	3
	Percent	23.6	68.1	2.8	5.6	0			
Suppliers gave the training for users	Frequency	11	56	2	3	0	1.95	.59	4
	Percent	15.3	77.8	2.8	4.2	0			
<b>Contracting Performance</b>							<b>1.79</b>	<b>.46</b>	<b>First</b>

Notes: Descriptive statistics based on 5 point scale ranging from “Strongly Disagreed” to “Strongly agreed.”

The results presented in the table 4.7 indicated that contracting performance stage challenging the effectiveness of JU’s procurement system in a great extent as indicated by a mean of 1.79. In this category the respondents indicated that pre-shipment testing has not performed for machineries, devices & equipment which had a mean of 1.61. The respondents also disagreed that post-shipment testing is carefully performed as indicated by a mean 1.84 and post-shipment testing & receiving activities done by last users in the procurement system as indicated by a mean 1.9. The study further revealed that suppliers did not gave the training for users as shown by a mean of 1.95 which indicates that one of the causes of JU’s ineffective procurement system was absence of training from suppliers when selling new machineries.

### **Perform pre-shipment inspection**

Pre-shipment inspection (PSI) is a part of supply chain management and an important quality control method for checking the quality of goods and clients buy from suppliers.

PSI ensures that production complies with specifications of the buyer and/or the terms of a purchase order or letter of credit. A final random inspection (FRI), checks finished products



when at least some considerable (example 80%) of an order has been produced. PSI can diminish risks. PSI can be agreed upon between a buyer and a supplier, and it can be used to initiate payment for a letter of credit. Thus, this process could make JU more confidential about the stationaries and machineries consumed.

From the data findings in this study, the majority 95.8 % of the respondents disagreed that pre-shipment inspection for machineries, devices & equipment performed in JU's procurement system, while 1.4 percent of respondents agreed and 2.8 percent were uncertain. On the other hand as the mean value 1.61 indicates the disagreement of respondents on pre-shipment inspection for machineries, devices & equipment performed in JU's procurement system.

This Data shows that almost all of the respondents indicate as the JU's procurement system could not perform pre-shipment inspection, so that it was the cause of the ineffective procurement system.

### **Perform post-shipment inspection**

According to Advanced Ontrade.com a post-shipment inspections can be defined as activities which are relating to the verification of the quality, the quantity, the price including financial terms and/or the customs classification of goods, which is conducted in order to understand whether or not the quality and quantity of the goods are in conformity with the specifications stated on the sales contract, is performed upon arrival of the goods at the part of discharge or place of final destination.

Post-shipment inspections can eliminate the risk of disputes regarding the quantity and quality of goods received by consumers. Such inspections can also potentially uncover fraudulent activities by suppliers, and even serve as a deterrent.

From the data findings in table 4.7, the majority of the respondents disagreed that post-shipment inspection for machineries, devices & equipment performed in JU's procurement system as shown by a mean of 1.84. On the other way as table 4.7 shows the majority 91.7 percent of the respondents disagreed that post-shipment inspection for machineries, devices & equipment performed in JU's procurement system, while 5.7 percent of respondents agreed and 2.8 percent were uncertain. This implies that the post-shipment test was not

performed in JU's procurement system. Thus it was the bottleneck to establish an effective procurement system in JU.

### **Post-shipment testing & receiving activities done by last user**

The result for post-shipment inspections shows that JU did not performed post-shipment inspections, and similarly if there were not post-shipment inspections, the task might not be done by the user of goods as shown by a mean of 1.90. On the other way as table 4.7 shows the respondents disagreed that post-shipment testing & receiving activities done by last user in JU's PS by 91.7 percent, while 5.6 percent of respondents agreed and 2.8 percent were uncertain. This implies that in JU's procurement system there were not post-shipment inspections which were done by the last users.

### **Taking training from Suppliers for new machineries**

Users need training, particularly in how to resolve dilemmas and to be brief. According to Thomson & Jackson, (2007), the actions of public officials must be above suspicion and not give rise to any actual or potential conflict of interest and their dealings with commercial and other interests should bear the closest possible scrutiny. It is not possible to operate with manuals for every conceivable situation that may arise but if a doubt arises about a particular task be consulted. Depending upon the agreement and the relationship between buyer and sellers some suppliers could to give a training for their customers, when they sale new machineries. The training used the users to be brief and friendly to the new machineries and the institute will be effective with the machineries they bought. From the data findings in table 4.7 shows, the majority of the respondents disagreed that the training given by suppliers when they sale new machineries which shown by a mean of 1.95. In the other way table 4.7 indicates that 93.1 % of the respondents disagreed that the training given by suppliers when they sale new machineries, while 4.2 percent of respondents agreed and 2.8 percent were uncertain.

### **Summary of Parts:**

The contracting performance stage challenging the effectiveness of JU's procurement system in a great extent as indicated by a mean of 1.79. All variables in this section; pre-shipment inspection, post- shipment inspection, last users involvement in testing and

receiving activities, and training for users have negative impact on effectiveness of JU's procurement system as indicated by the means 1.61, 1.84, 1.90 and 1.95 respectively. This implies that contracting performance stage of the procurement process was the main challenge (bottleneck) to achieve effective procurement system in JU.

#### 4.5. Accountability, ICT adoption and operating regulation for JU's Procurement System

**Table 4.8:** Respondents' Opinions on Accountability, ICT adoption and operating regulation for JU's Procurement systems

	Mean	Std. Deviation	Rank
<b>ICT Adoption</b>			
Procurement communication channel is supported with IT	1.86	.485	<b>1</b>
We use electronic data interchange (EDI) with suppliers	1.89	.602	<b>2</b>
We use computers to process orders to suppliers	2.46	.731	<b>9</b>
<b>ICT Adoption</b>	<b>2.07</b>	<b>0.46</b>	<b>Second</b>
<b>Follow Operating Procedure &amp; regulation</b>			
The purchasing function has a formally written long-range procurement plan and Guideline	1.98	.839	<b>3</b>
Exchange of information with suppliers takes place frequently	2.02	.560	<b>6</b>
The public procurement and Disposal Act 2009 made our procurement effective	2.11	.453	<b>7</b>
Centralized purchasing system made our procurement document based and effective	2.26	.507	<b>8</b>
<b>Operating Regulation</b>	<b>2.12</b>	<b>0.46</b>	<b>Third</b>
<b>Accountability or Suppliers commitment</b>			
We have been able to obtain products from suppliers with shorter lead times	1.99	.569	<b>4</b>
Our suppliers produce materials with consistent quality	2.00	.581	<b>5</b>
Our suppliers consistently meet our requirements	2.35	1.009	<b>10</b>
<b>Supplier Commitment</b>	<b>2.11</b>	<b>0.588</b>	<b>Fourth</b>

Notes: Descriptive statistics based on 5 point scale ranging from "Strongly Disagreed" to "Strongly agreed."

### **4.5.1. ICT Adoption**

The old way of doing business consists of buyers managing forecasts and communicating requirements to suppliers via phone, fax and e-mail. Spreadsheets and manual reports are passed between the trading partners. These manual processes are slow and cumbersome. They cannot support today's demand-driven enterprises. Supply chain procurement professionals spend too much time "putting out fires" and reacting to daily problems (Thomson and Jackson, 2007). They cannot seem to find the time to develop strategic relationships with suppliers and deploy improved business processes that eliminate shortages. On the effects of ICT adoption on procurement of supplies in the procurement system, in order to meet today's operating challenges, organizations should turn to ICT to enhance the services by lowering costs and increasing productivity. Thus, ICT adoption has the ability to enhance procurement services and making the organization more effective.

From the data findings in table 4.8, the majority of the respondents disagreed that there were not exercise and practice of ICT Adoption in JU's procurement system as shown by a mean of 2.07.

Specifically, JU's Procurement communication channel was not supported with ICT to process orders to suppliers which indicated by a mean value of 1.86, they did not used electronic data interchange such as email, Skype, fax, etc. to facilitate their procurement system as shown by a mean 1.89 and they could not use computer to process order as indicated by a mean of 2.45 as shown in table 4.8 above. This implies that since the ICT did not enhance the procurement activities, it might be the challenge to JU's effective procurement system or it might the cause of weak PS in JU.

### **4.5.2. Follow Operating Procedure & regulation**

As table 4.8 shows that the respondents disagreed that there was prepared and operating procedure and regulations to procured stationaries and machineries in JU procurement system as indicated by a mean of 2.12. In this category the respondents' response indicated that the purchasing function had not a formally written long-range procurement plan and guideline as shown by a mean of 1.98, public procurement and Disposal Act 2009 had not positive contribution to make their procurement system effective as indicated by a mean

2.11. The respondents also disagreed for a great extent that exchange of information with suppliers takes place frequently as indicated by a mean 2.02 and they disagreed for a great extent that centralized purchasing system made JU's procurement document based and effective as indicated by a mean 2.26.

### **4.5.3. Accountability or Suppliers commitment**

As Thai (2001) noted, good procurement process should include accountability and integrity where effective mechanisms are in place in order to ensure all procurement undertakings are done according to the laid down processes.

Accountability can be explained as the process of holding an individual or an organization fully responsible for all aspects of the procurement process over which they exert authority. The essence of accountability is to strengthen the perception of transparency and fairness (Public Procurement Board Training Module 3, 2007).

Supplier commitment is a very important factor in the procurement process. This study sought to investigate whether the suppliers are committed to the procurement services.

The results presented in the table 4.8 indicated that supplier commitment challenging the effectiveness of JU's procurement system in a great extent as indicated by a mean 2.11. In this category the respondents response indicated that the products could not obtained from suppliers with shorter lead times as shown by a mean of 1.99. The respondents also disagreed for a great extent that the suppliers produce materials with consistent quality as indicated by a mean 2.00 and they disagreed for a great extent that suppliers consistently meet their procurement requirements as indicated by a mean 2.35.

#### **Summary of Parts:**

Weak ICT adoption, absence of operating procedure and absence of suppliers' commitment challenged JU's procurement system in a great extent as indicated by the means of 2.07, 2.12 and 2.11 respectively. Similarly all the variables in the category of ICT adoption, operating regulation and suppliers' commitment made JU's procurement system ineffective. This implies that weak ICT adoption, absence of operating procedure and absence of suppliers' commitment were the challenges (bottlenecks) for JU's procurement system effectiveness.

## 4.6. Regression Analysis

In addition to the descriptive analysis discussed in this study, a multiple regression analysis conducted to test relationship among variables on the Procurement process. This study applied the statistical package for social sciences (SPSS) to code, enter and compute the measurements of the multiple regressions for the study.

The first thing that has be done in the regression analysis is checking the assumptions of multi-collinearity which includes correlations which expressed in Pearson Correlation and collinearity diagnostics which expressed in terms of tolerance and VIF (Variance inflation factor). The other assumptions are outliers, normality, linearity, homoscedasticity and independence of residuals; these assumptions can be checked by inspecting the Normal Probability Plot (P-P) of the Regression Standardized Residual and the Scatterplot that were requested as part of the analysis.

As SPSS result in this study shows that when checking the correlation (relationship) between the independent variables (Planning process, Tendering process, Contracting, ICT Adoption, Operating Procedure and Supplier Commitment) with the dependent variable (Effectiveness of JU's Procurement System), all of the cases correlate substantially with the value of -0.118, -0.073, 0.334, 0.408, 0.426 and 0.450 respectively as indicated in table 4.9. Thus there is a relationship between independent and dependent variables in this study. Specially, the four cases those are Contracting, ICT Adoption, Operating Procedure and Supplier Commitment have preferable relationship with the dependent variable since they had correlation value above 0.3.

On the other hand table 4.9 shows that when checking the correlation between each independent variables, the maximum relationship between them is 4.39 which is the relationship between planning and tendering stages. This result is not 0.7 or more; therefore, all variables had been retained (used in the study) since they have correlation result less than 0.7.

**Table 4.9: Pearson Correlation:**

		Effectiveness of JU's Procurement System	Planning	Tendering	Contracting	ICT Adoption	Operating Procedure	Supplier Commitment
Pearson Correlation	Effectiveness of JU's Procurement System	1.000	<b>-.118</b>	<b>-.073</b>	<b>.334</b>	<b>.408</b>	<b>.426</b>	<b>.450</b>
	Planning	-.118	1.000	<b>.439</b>	<b>.065</b>	<b>-.091</b>	<b>-.014</b>	<b>-.131</b>
	Tendering	-.073	.439	1.000	<b>.041</b>	<b>.021</b>	<b>.153</b>	<b>-.044</b>
	Contracting	.334	.065	.041	1.000	<b>.122</b>	<b>.303</b>	<b>.121</b>
	ICT Adoption	.408	-.091	.021	.122	1.000	<b>.220</b>	<b>.348</b>
	Operating Procedure	.426	-.014	.153	.303	.220	1.000	<b>.351</b>
	Supplier Commitment	.450	-.131	-.044	.121	.348	.351	1.000

The collinearity diagnostics in the SPSS result of table 4.10 below presented in terms of Tolerance and VIF. Tolerance is an indicator of how much of the variability of the specified independent is not explained by the other independent variables in the model and it could be calculated for each variable by using the formula “1-R squared”. The other value given is the VIF, which is just the inverse of the Tolerance value (1 divided by Tolerance). Generally that is possible to used cut-off points for determining the presence of multicollinearity by tolerance value of greater than 0.10 or a VIF value of less than 10. In this study the tolerance value for independent variables are 0.898, 0.860, 0.786, 0.783, 777 and 0.774, which are not less than 0.10; therefore, it could not violated the multicollinearity assumption. This is also supported by the VIF value, which are 1.114, 1.163, 1.272, 1.277, 1.287 and 1.300, which is well below the cut-off of 10.

Table 4.10: *Collinearity Diagnostics:*

Model		Collinearity Statistics	
		Tolerance	VIF
1	Planning	.783	1.277
	Tendering	.777	1.287
	Contracting Performance	.898	1.114
	ICT Adoption	.860	1.163
	Operating Procedure	.774	1.291
	Supplier Commitment	.786	1.272

Table 4.11: *Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.626 <sup>a</sup>	.392	.336	.36675

The Model Summary box shown in table 4.11 above has the value of R Square which explains how much of the variance in the dependent variable (effective procurement process) is explained by the model (by all the six independent variables Planning, Tendering/purchasing, contracting, ICT adaption, operating procedure and accountability).

In this study the value of R Square is 0.392 as shown in table 4.11 above. This means that the model or six independent variables that included in this study, explain only 39.2 % of the internal factors affecting effectiveness of procurement system in JU. This therefore means that there are other factors which did not included in this study. Therefore, further research could be conducted to investigate the other factors that affect effectiveness of JU's procurement system. This is quite a respectable result particularly when compared it to some of the results that reported in the journals like Getnet Amdework and Tilahun Aemiro (2014) European Journal of Business and Management, Vol.6, No.23, 2014 presented R Square was 33.8 percent.



**Table 4.12: ANOVA**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	5.648	6	.941	6.498	.000 <sup>b</sup>
Residual	8.743	65	.135		
Total	14.391	71			

ANOVA is used to assess the statistical significance of the result as shown in table 4.12.

The significance value in this study is 0.000 which is less than 0.05. Thus the model is statistically significance in predicting how the planning process, tendering process, ICT adoption, Operating regulations and accountability affect the effectiveness of JU's procurement process of stationaries and machineries.

In other words, overall goodness of fit of the model was assessed using the F-value and was found to be statistically significant at  $p < 0.05$  ( $F(6, 65) = 6.498, p < 0.05$ ).

**Table 4.13: Coefficient of determination**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	Constant ( $\beta_0$ )	1.002	.413		2.425	.018
	Planning ( $\beta_6$ )	<b>-.027</b>	.097	-.030	-.278	.782
	Tendering ( $\beta_5$ )	<b>-.074</b>	.083	-.098	-.895	.374
	Contracting ( $\beta_4, \beta_3$ )	<b>.206</b>	.101	.209	2.045	<b>.045</b>
	ICT Adoption ( $\beta_1$ )	<b>.240</b>	.103	.243	2.328	<b>.023</b>
	Operating Procedure ( $\beta_2$ )	<b>.214</b>	.099	.237	2.157	<b>.035</b>
	Supplier Commitment ( $\beta_4$ )	<b>.190</b>	.083	.249	2.282	<b>.026</b>

To compare the contribution of each independent variable in the model for the prediction of the dependent variable or to constructing a regression equation, that is better to use the unstandardized coefficient values listed as B in table 4.13 above.

In this study, the contribution of independent variables in the model to explain the effectiveness of JU's procurement system from strongest unique contribution to slightly less unique contribution is 0.240, 0.214, 0.206, 0.190, 0.074 and 0.027 which are the coefficients

of the dependent variables ICT adoption ( $X_1$ ), Operating Procedure ( $X_2$ ), Contracting performance ( $X_3$ ), Supplier Commitment ( $X_4$ ), Tendering process ( $X_5$ ) and Planning process ( $X_6$ ) respectively. In this case any negative signs have been ignored (SPSS SURVIVAL MANUAL).

A statistically significant *unique* contribution of the independent variables to the equation is determined by the value of sig. As table 4.13 above shows that contracting process, ICT adoption, operating procedure and suppliers commitment made a *unique statically* significant contribution to the prediction or effectiveness of JU's procurement system expressed as Y in equation 1 below since the Sig. value less than .05 (0.045, 0.023, 0.035 and 0.026). On the other hand, planning process and tendering process were not made a significant unique contribution to the prediction of ineffective procurement system in JU since sig. greater than .05 that are 0.782 and 0.374 respectively.

This study conducted a multiple regression analysis so as to determine the relationship between effectiveness of JU's procurement system and the six independent variables. This analysis has to be determined by regression equation.

The general regression equation to be constructed for this model seems as shown below:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon$$

Based on the discussion and the SPSS generated table 4.13 above, the regression equation or the general model for this study becomes as follow ( Since  $\beta_0 = 1.002$  ,  $\beta_1 = 0.24$ ,  $\beta_2 = 0.214$ ,  $\beta_3 = -0.206$ ,  $\beta_4 = -0.190$ ,  $\beta_5 = -0.074$  and  $\beta_6 = -0.027$ ):

$$Y = 1.002 + 0.24X_1 + 0.214X_2 + 0.206X_3 + 0.190X_4 + 0.074X_5 + 0.027X_6 + \varepsilon \dots\dots\dots 1$$

- Where;
- $\beta_0$  = constant = 1.002
  - Y = Effectiveness of JU's Procurement System
  - $X_1$  = ICT adoption
  - $X_2$  = Operating Procedure
  - $X_3$  = Contracting performance
  - $X_4$  = Supplier Commitment
  - $X_5$  = Tendering process

$X_6$ = Planning process

$\varepsilon$  = the error, the error is calculated as

$\varepsilon$ = constant- Std. Error at constant =1.002-0.413=0.589

ICT adoption is the most significant variable and the coefficient for most significant variable is  $(\beta_1) = 0.240$ , operating procedure is the second most significant variable and the coefficient is  $(\beta_2) = 0.214$ , contracting process is the third and its coefficient  $(\beta_3) = 0.2.6$ , supplier commitment is the fourth and it's coefficient  $(\beta_4) = 0.190$ ,  $X_5$  is tendering process and  $X_6$  is Planning process.

According to the regression equation established, taking all factors into account (ICT adoption, operating procedure, contracting performance, supplier commitment, tendering process and planning process) constant at zero, effectiveness of JU procurement will be **1.002**.

The data findings analyzed also showed that taking all other independent variables at zero, a unit increase in ICT adoption will lead to a 0.24 increase in procurement system; a unit increase in operating procedure will lead to a 0.214 increase in procurement system, a unit increase in contracting performance will lead to a 0.206 increase in procurement system, supplier commitment will lead to a 0.19 increase in procurement system, tendering process will lead to a 0.074 increase in procurement system and a unit increase in planning process will lead to a 0.027 increase in procurement process. This infers that ICT adoption, operating procedure, contracting performance and supplier commitment contribute more to the ineffectiveness of JU procurement system respectively.

## 4.7. Summary of the Findings

This study analyzed, identified and determined the challenging procurement processes and procurement facilitating activities to make effective procurement system in JU. After in-depth review and analysis of the materials related to procurement processes of JU procurement system, the study found a number of issues related to the study.

Majority of respondents in this study worked in Jimma University over five years representing 80.6 percent of the total respondents surveyed. These findings show that the respondents have worked with their colleges in JU for long enough to understand the procurement process and how effective it was. In addition to that respondents have involved in inspection and acceptance committees represented by 33.3 percent, procurement committees represented by 23.6 percent, procurement staff represented by 30.6 percent and tender committees represented by 12.5 percent. This shows that the respondents were from different procurement activities hence more representative of the experience on procurement process at the colleges/institutes because different designations feel different challenges in the procurement processes.

The mean value for the response of stationary and machineries procured in JU in terms of low quality, improper quantity, not in right (moderate) price, absence of raw materials, not just in time have the value of **3.76** which indicates the Agreed scale.

On the other hand, according to Jimma University strategic plan for research, innovation and community services, 2016-2020; poor, delayed and rigid purchasing system in JU considered as weakness and non-productive purchasing system for laboratory based researches, considered as threats to implement the research, innovation and community services. On the other hand the 2017 JU's customers' satisfaction survey report revealed that 42.2% of the respondents dissatisfied by educational facility. To show the figures which indicating the satisfaction level of some colleges/institutes in JU; the law school, JIT, BECO, PH and CSSH has the level of satisfaction of 8%,30%, 38.2%, 46.2% and 63% respectively. This dissatisfaction by educational facility implies that there was a gap in the outcome of the primary objective of the organization (quality education) and this could be fulfilled by the procurement system. Thus, it indicates that there was the gap in procurement system.

The mean value for procurement planning stage in procurement system is 3.08. This implies that procurement planning process in JU's procurement system was not the challenge for JU's procurement system.

Even though, the planning was not much the challenge for JU's procurement system, the following three specific determinants of the planning stage has negative impact on JU's PS and they need some improvement to make the system effective;

- ✚ Timely approval of procurement plan and issuance to the respective College which indicated by a mean 2.53,
- ✚ Publishing process of procurement in the website and Local Newspapers which indicated by a mean 2.59 and
- ✚ Provision of procurement requirements to the procurement department as indicted by a mean 2.69.

The mean value for tendering process is 3.42. This indicates that tendering process was not the challenge to involved effective procurement system in JU. But the particular determinants in tendering process those are verification of successful bidder's price to the market prices before award of tender and advertisement in approved media challenged the JU's procurement system as indicated by the means 2.47 and 2.79 respectively.

The contracting performance stage challenging the effectiveness of JU's procurement system in a great extent as indicated by a mean of 1.79. In this category the respondents indicated that pre-shipment testing has not performed for machineries, devices & equipment which had a mean of 1.61. The respondents also disagreed that post-shipment testing is carefully performed that indicated by a mean 1.84 and post-shipment testing & receiving activities done by last users as indicated by a mean 1.9. The study further revealed that suppliers did not gave the training for users as shown by a mean of 1.95 which indicates that one of the causes of JU's ineffective procurement system was absence of training from suppliers when selling new machineries.

Weak ICT adoption, absence of operating procedure and absence of suppliers' commitment challenged JU's procurement system in a great extent as indicated by the means of 2.07, 2.12 and 2.11 respectively. Similarly all the variables in the category of ICT adoption, operating regulation and suppliers' commitment made JU's procurement system ineffective.

This implies that weak ICT adoption, absence of operating procedure and absence of suppliers' commitment were the challenges (bottlenecks) for JU's procurement system effectiveness.

The model or six independent variables (ICT adoption, Operating Procedure, Contracting performance stage, Supplier Commitment, Tendering process and Planning process) that included in this study, explain only 39.2 % of the internal factors affecting effectiveness of procurement system in JU. This therefore means that there are other factors which did not included in this study.

The regression results in this study also revealed that contribution of the independent variables in the model to explain the effectiveness of JU's procurement system from strongest unique contribution to slightly less unique contribution is 0.240, 0.214, 0.206, 0.190, 0.074 and 0.027 which are the coefficients of the independent variables ICT adoption, operating procedure, contracting performance, supplier commitment, tendering process and planning process respectively.

The contracting process, ICT adoption, operating procedure and suppliers commitment made a unique statically significant contribution to the prediction of ineffective procurement system in JU since their Sig. value less than .05 (0.045, 0.023, 0.035 and 0.026 respectively). On the other hand, planning process and tendering process were not made a significant unique contribution to the prediction of ineffective procurement system in JU since sig. greater than .05 that are 0.782 and 0.374 respectively.

This indicates that pre-shipment inspection, post-shipment inspection, the last users involvement in inspection and receiving activity, the training given to user, using computer to process order, using electronic data interchange, supporting the communication channel with information technology, prepare their own procurement operating procedures and guide lines to guide and lead the procurement process and controlling implimentation of prepared guide lines in the university's procurement, forming strong relationship to identified key suppliers in order to be committed for the machineries and stationaries they will deliver mean that to deliver consistent quality product within shorter lead times to satisfy the requirements will have a great contribution to ensure ineffective procurement system in JU.

Finally, the findings tell us that the independent variables planning stage and tendering stage of the procurement were not statistically significant predictor of ineffective procurement system in JU.

# CHAPTER FIVE

## 5. CONCLUSION AND RECOMMENDATIONS

### 5.1. Conclusion

This study sought to find out whether procurement planning stage, tendering stage, contracting performance stage, ICT adoption, operating procedure and suppliers' commitment in the procurement process challenged and associated an effectiveness of JU's procurement system.

The findings in this study show that the respondents have worked with their respective colleges in JU for long enough to understand the procurement process and how much effective it was. Hence they provided reliable data for the study.

These findings confirm that the respondents drawn from different procurement activities hence more representative of the experience on procurement process because different designations feel different challenges in the procurement processes.

The respondents agreed to a great extent that the ineffectiveness of JU's procurement system as indicated by a mean of 3.76. On the other hand the fear from strategic plan developers generated from earlier experience of JU's procurement system. Similarly, low satisfaction level of customers and staffs in education facility from JU customers' satisfaction survey was the result of weak procurement system. This therefore implies that, Jimma University procurement system was ineffective.

Procurement planning process in JU's procurement system was not the challenge to achieve effective procurement system. But some of the specific determinants of the planning stage in the procurement process were the challenges for effectiveness of JU's procurement system. Those challenges are; approval of procurement plan and issuance to the colleges/institutes was not in timely, weak publishing process of procurement in the website and local newspapers and the weak on time provision of procurement requirements to the procurement department.

Based on the result and data analyzed in the descriptive part tendering process was not the challenge (bottleneck) of JU's procurement system. But the particular determinants in



tendering process those are no verification of successful bidder's price to the market prices before award of tender and no advertisement in approved media challenged the JU's procurement system.

Contracting performance stage of the procurement process challenged the effectiveness of JU's procurement system in a great extent as indicated by a mean 1.79. Similarly all the variables in this category made JU's procurement system ineffective. This implies that contracting performance stage of the procurement process was the main challenge (bottleneck) for JU's procurement system effectiveness.

Low adoption of ICT, absence of suppliers' commitment, absence of operating procedure, absence of regulation and guide lines were the challenges (bottlenecks) for JU's procurement system.

The multiple linear regression result revealed that ICT in procurement is a highly significant predictor of effectiveness of JU's procurement system. In addition, operating procedure, contracting performance stage and suppliers' commitment in procurement are significant predictors for effectiveness of JU's procurement system. The findings also showed that the independent variables planning stage and tendering stage of procurement process for JU's procurement were not relatively statistical significant predictor of effectiveness of JU's procurement system. Finally, the study revealed that there is a positive association between contracting performance, suppliers' commitment, ICT adoption, operating procedure and effectiveness of JU procurement system.

## **5.2. Recommendations**

### **5.2.1. For Jimma University**

From the above summary of the findings and conclusions, the following recommendations used to improve the effectiveness of JU procurement system through improvement of procurement processes, ICT adoption, relationship to suppliers and preparation and implementation of guide lines and operating procedures in the University.

Contracting performance stage in procurement process should be performed by the last users who develop the specification of supply at planning stage and they must be responsible for the faults happened on the machineries and goods received. This means that the pre-shipment inspection and post-shipment inspection should be done and checked by the last users. The procurement department should agreed with the suppliers to give training when they supply new machineries.

The study further recommends JU to adopt ICT adoption. This will enhance the process of effective procurement through using computer to process order, using electronic data interchange, supporting the communication channel with information technology.

JU's top managers should prepare their own procurement operating procedures and guide lines to guide and lead the procurement process and controlling implementation of prepared guide lines in the university's procurement.

The procurement department must form strong relationship to key suppliers to deliver consistent quality product within shorter lead times to satisfy the requirements.

### **5.2.2. For JU Procurement Department**

The procurement department and plan office of Jimma University should confirm the approved procurement plan and issuance to the colleges/institutes on time, and that is better if they published process of procurement in the website and local newspapers. On the other hand the department should give the procurement requirements on time to the procurement department.

The pre-forma should not be done for formality it should be for select the optimal price for proper quality. Therefore the procurement department in JU should to verify the successful

bidder's price against market prices before to award of tender and that is better if they advertise the opportunities of tender in approved media to invite offers. This might save unnecessary cost.

### **5.2.3. For Ministry of Education**

This study further recommends Ministry of Education to adopt ICT adoption. This will enhance the process of effective procurement through using computer to process order, using electronic data interchange, supporting the communication channel with information technology.

Ministry of Education should prepare centrally following policies, guides and procedures that should support guide and control all Universities procurement system.

### **5.2.4. For other Researchers**

The statistical model in this study explained 39.2% of the variation in effectiveness of JU's procurement system. This implies that other factors that explain the variation in effectiveness of JU's procurement system were not accounted in this study. In other words since procurement has many factors to affect its effectiveness, that is not possible to include all factors in this study such as corruption, familiarity, transparency, records management, etc. Therefore, further research might be conducted to account for the other factors as well that lead to effective procurement system in JU and other universities in Ethiopia.

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# APPENDICES

## Appendix I: Structured Questionnaire for Procuring Entities in Jimma University

**Subject: The effect of planning, purchasing, contracting, IT adoption, operating procedures and supplier's commitment on the effectiveness of Jimma University Procurement system.**

Dear Respondent,

The researcher would like to request your genuine opinion and comments on this study with respect to the subject mentioned above. This questionnaire will be used by the student to collect direct data from Jimma University staff members who involved directly in procurement functions within sampled procuring entities (stationaries and machineries).

It should be noted that maximum confidentiality will be exercised on the information provided and it will be exclusively used only for the fulfillment of master in Business Administrative with in Jimma University, BECO.

**Date:** \_\_\_\_\_

1. What is your highest level of education attained so far? (Tick as applicable)

Diploma  BSc/BA/BED

MSc/MA/MED  PHD

Others-specify\_\_\_\_\_

2. Your years of service in JU/Work Experience Duration : (Tick as applicable)

Less than 2 year  2 - 5 years  5-10 Years  Over 10 years

3. In which of the following procurement activities in your collage or institution you involved?

Negotiation Committee  Tender Committee  Disposal Committee


Procurement committee  Inspection and Acceptance  Evaluation Committee

Procurement Staff

**A. Quality, Quantity, Price, Delivery time & raw material accessibility for machineries & stationary goods to embark effective procurement system in Jimma University**

The following are identified as the main attributes that made the procurement system effective in Jimma University procured entities (stationaries and machineries). Please rate the degree of attributes basing on the scale provided in the table:


**(1- Strongly Disagree; 2- Disagree; 3- Uncertain; 4- Agree; 5- Strongly Agree):**

S.No.	Attributes	Scale				
						
		1	2	3	4	5
A1	Stationaries and machineries procured in JU are low quality					
A2	Stationaries and machineries procured in JU are improper quantity it might be too much or small volume.					
A3	Stationaries and machineries procured in JU are not in right(moderate) price.					
A4	More of Machineries procured in JU has no raw materials such as Brother & canon printer has no toner.					
A5	Stationaries and machineries procured in JU are not just in time. It might be late or fast.					

**B. Procurement planning process on effectiveness of JU’s procurement system.**

The following are identified as main attributes in procurement planning that affects the procurement system in actual practice of carrying out procurement functions in Jimma University when trading with procuring entities (stationaries and machineries). Please rate the degree of attributes basing on the scale provided in the table:

**(1- Strongly Disagree; 2- Disagree; 3- Uncertain; 4- Agree; 5- Strongly Agree):**

S.No.	Attributes	Scale				
						
		1	2	3	4	5
B1	Supply & demands requirements clearly defined and appeared in the Annual Procurement Plan					
B2	All the necessary specifications of required demands clearly determined in Procurement Plan of each department					
B3	Provision of timely and appropriate procurement requirements to the Procurement department (Specification, drawings, schedule of requirements/Bills of Quantities and technical evaluation criteria) by User departments					
B4	Estimated Budget had been released for every procurement requirements					
B5	Timely approval of annual procurement plan and issuance of general procurement notice to the public					
B6	General Procurement Notice is published in the website and Local Newspapers for public access.					

### C. Purchasing process on the effectiveness of JU's procurement system

The following are identified as main attributes in purchasing (tendering process) that affects the effective procurement system in actual practice of carrying out procurement functions in Jimma University when trading with procuring entities (stationaries and machineries). Please rate the degree of attributes application on effectiveness of JU procurement system basing on the scale provided in the table:

(1 - Strongly Disagree; 2- Disagree; 3 - Uncertain; 4 - Agree; 5- Strongly Agree)

S. No.	Attributes	Scale				
		1	2	3	4	5
C1	Appropriately prepared bidding documents for each procuring phase					
C2	Invite offers by advertisements in approved media & provide bidding documents					
C3	Select suppliers and obtain approvals (Open bids, Bid evaluation committee deliberates and make decisions, Submit decisions for required approvals)					
C4	Completion of Tender Evaluation on time					
C5	Conducting due diligence to prospective successful bidder and documented before award of tender					
C6	Evaluation report are based only on criteria stipulated in the bidding document issued					
C7	Verification of successful bidder's price to the market prices prior to award of tender					
C8	Arrange payment guarantee (Make down payment, issue letter of credit)					

### D. Contract performance process on the effectiveness of JU's procurement system

The following are identified as main attributes in **contracting process** that affects the effective procurement system in actual practice of carrying out procurement functions in Jimma University when trading with procuring entities (stationaries and machineries). Please rate the degree of attributes application on effectiveness of JU procurement system basing on the scale provided in the table:

(1 - Strongly Disagree; 2- Disagree; 3 - Uncertain; 4 - Agree; 5- Strongly Agree)

S. No.	Attributes	Scale				
		—————→				
		1	2	3	4	5
D1	Carefully performing pre-shipment inspection/testing for machineries, devices & equipment.					
D2	Carefully performing post-shipment inspection/testing for stationaries, machineries, devices & equipment by last users.					
D3	All post-shipment inspection/testing and receiving activities of goods, machineries, devices & equipment exactly done by last users					
D4	All suppliers give the training for users when they supply new machineries, devices & equipment.					

**E. IT adoption, operating procedures (PPA) & Ethics (supplier’s commitment) on effectiveness of JU’s procurement system**

The following are identified as main attributes in IT adoption, operating procedures (PPA) & Ethics (supplier’s commitment) that affects the effective procurement system in actual practice of carrying out procurement functions in Jimma University when trading with procuring entities (stationaries and machineries). Please rate the degree of attributes application on effectiveness of JU procurement system basing on the scale provided in the table:

**(1 - Strongly Disagree; 2- Disagree; 3 - Uncertain; 4 - Agree; 5- Strongly Agree)**

S. No.	Attributes	Scale				
		—————→				
		1	2	3	4	5
E1	IT adoption					
	1.1. We use computers to process orders to suppliers					
	1.2. We use electronic data interchange (EDI) with suppliers					
	1.3. Procurement communication channel is supported with IT (like skype, email, etc) and make our procurement effective					
E2	Operating Procedures (PPA)					
	2.1. The public procurement and Disposal Act, 2009 made our procurement effective					
	2.2. The purchasing function has a formally written long-range procurement plan and Guideline					
	2.3. Exchange of information with suppliers takes place frequently, in formally and/or in a timely manner based on guide line.					
	2.4. Centralized purchasing system made our procurement document based and effective					
E3	Ethics (supplier's commitment)					
	3.1. Our suppliers consistently meet our requirements					
	3.2. Our suppliers produce materials with consistent quality					
	3.3. We have been able to obtain products from suppliers with shorter lead times					

**F. Comment or Suggestions on the Study for Improvement**

Please if you have additional information with regard procurement system in JU you can share .....

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Thank you for your contribution!

## Appendix II

### SPSS simulation Output for Linear Multiple regression:

#### Descriptive Statistics:

	Mean	Std. Deviation	N
Effectiveness of JU's Procurement System	2.3889	.45021	72
Planning	3.0754	.50940	72
Tendering	3.4201	.59794	72
Contracting	1.7917	.45695	72
IT Adoption	2.0736	.45622	72
Operating Procedure	2.1222	.49950	72
Supplier Commitment	2.1194	.58856	72

#### Pearson Correlation

		Effectiveness of JU's Procurement System	Planning	Tendering	Contracting	IT Adoption	Operating Procedure	Supplier Commitment
Pearson Correlation	Effectiveness of JU's Procurement System	1.000	-.118	-.073	.334	.408	.426	.450
	Planning	-.118	1.000	.439	.065	-.091	-.014	-.131
	Tendering	-.073	.439	1.000	.041	.021	.153	-.044
	Contracting	.334	.065	.041	1.000	.122	.303	.121
	IT Adoption	.408	-.091	.021	.122	1.000	.220	.348
	Operating Procedure	.426	-.014	.153	.303	.220	1.000	.351
	Supplier Commitment	.450	-.131	-.044	.121	.348	.351	1.000

#### Variables Entered/Removed<sup>a</sup>:

Model	Variables Entered	Variables Removed	Method
1	Supplier Commitment Tendering Contracting IT Adoption Planning Operating Procedure <sup>b</sup>		. Enter

a. Dependent Variable: Effectiveness of JU's Procurement System

b. All requested variables entered.

**Model Summary<sup>b</sup>:**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.626 <sup>a</sup>	.392	.336	.36675	.392	6.998	6	65	.000

a. Predictors: (Constant), Supplier Commitment, Tendering, Contracting, IT Adoption, Planning Operating Procedure

b. Dependent Variable: Effectiveness of JU's Procurement System

**ANOVA<sup>a</sup>:**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.648	6	.941	6.498	.000 <sup>b</sup>
	Residual	8.743	65	.135		
	Total	14.391	71			

a. Dependent Variable: Effectiveness of JU's Procurement System

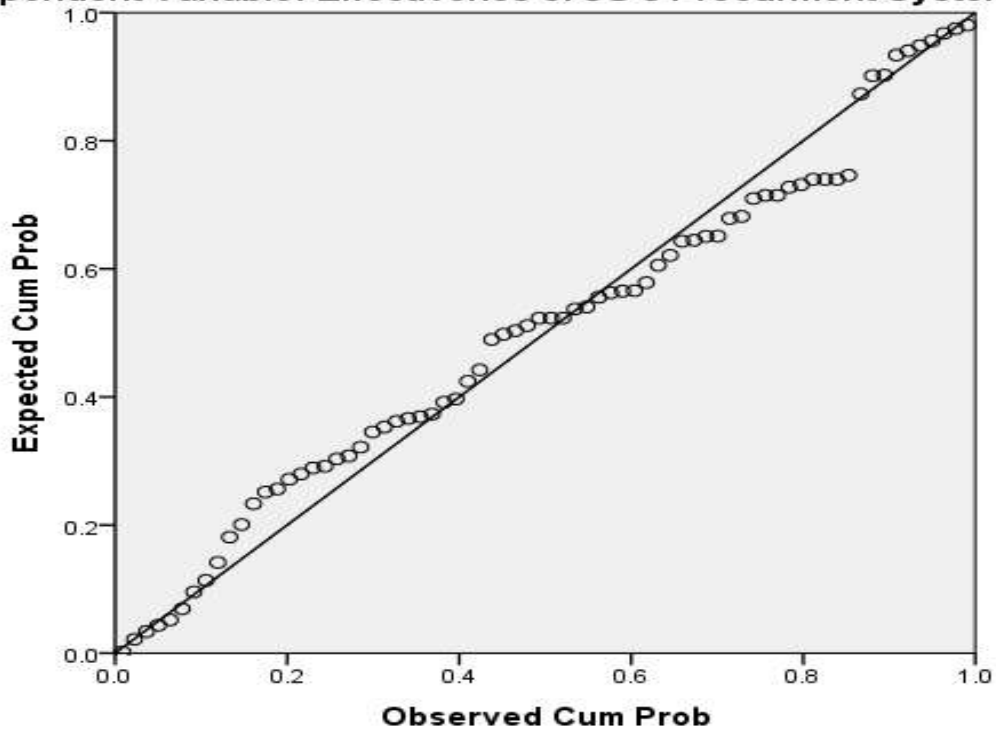
b. Predictors: (Constant), Supplier Commitment, Tendering, Contracting, IT Adoption, Operating Procedure, Planning

**Coefficients<sup>a</sup>:**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error				Beta	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance
1	(Constant)	1.002	.413		2.425	.018	.177	1.828					
	Planning	-.027	.097	-.030	-.278	.782	-.220	.166	-.118	-.034	-.027	.783	1.277
	Tendering	-.074	.083	-.098	-.895	.374	-.239	.091	-.073	-.110	-.086	.777	1.287
	Contracting	.206	.101	.209	2.045	.045	.005	.406	.334	.246	.198	.898	1.114
	ITAdoption	.240	.103	.243	2.328	.023	.034	.445	.408	.277	.225	.860	1.163
	Operating Procedure	.214	.099	.237	2.157	.035	.016	.411	.426	.258	.209	.774	1.291
	Supplier Commitment	.190	.083	.249	2.282	.026	.024	.357	.450	.272	.221	.786	1.272

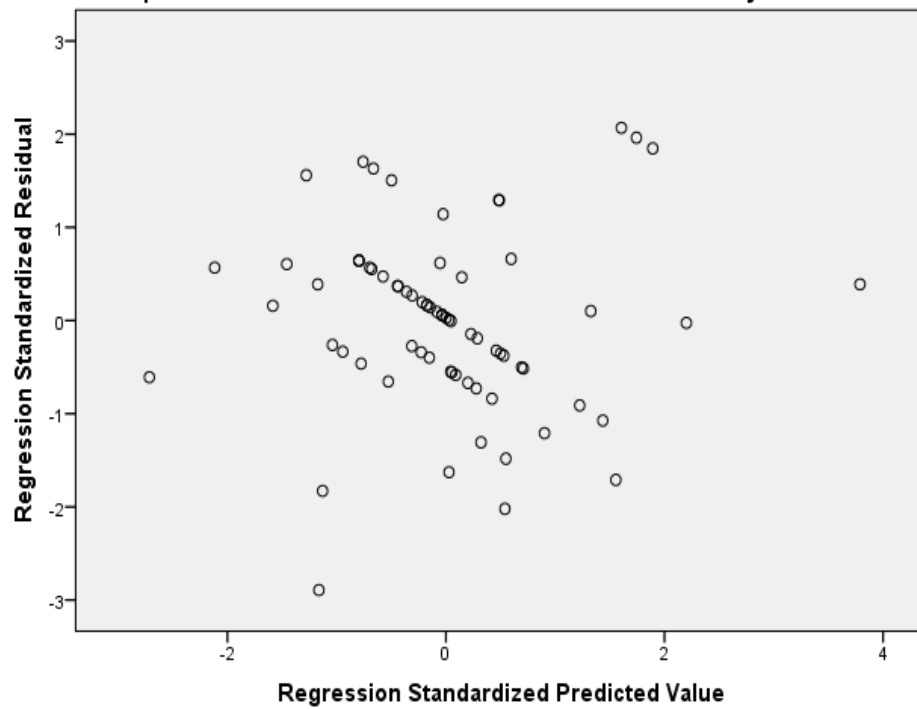
a. Dependent Variable: Effectiveness of JU's Procurement System

**Normal P-P Plot of Regression Standardized Residual**  
Dependent Variable: Effectiveness of JU's Procurement System



**Scatterplot**

Dependent Variable: Effectiveness of JU's Procurement System





### Appendix III

Photographical pictures that show procured machineries in JU that are not working:



Figure 1: Washing machine & steam wet cooking machine in JiT students' cafeteria



Figure 2: Steam tea cooking machines under the veranda of JU purchasing office.



Figure 3: Steam wet cooking machine in JiT students' cafeteria



Figure 4: Air-flow turbine machine in mechanical engineering laboratory



Figure 5: Sample picture for Fixed Phones distributed for health Science College for the 3<sup>rd</sup> time but not working.