



**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  
Masters of business Administration (MBA)**

***Determinants of Pharmaceuticals Material Procurement  
Performance in Jimma University Medical Center***

**BY:**

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**JIMMA UNIVERSITY**

**COLLEGE OF BUSSINESSAND ECONOMICS**

**MBA PROGRAM**

**JIMMA, ETHIOPIA**

**SEPTEMBER, 2018**

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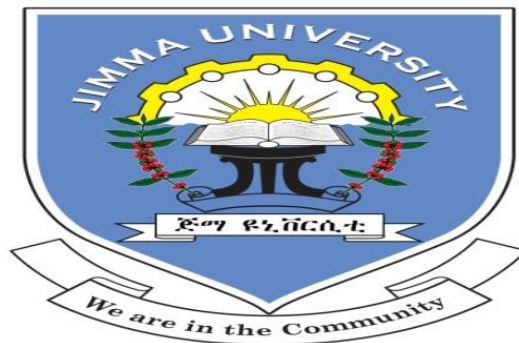
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**Under the guidance of**

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**And**

**Mr. Belay Chekol**



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## CERTIFICATE

This is to certify that the research thesis entitles “*Determinants of Pharmaceuticals Material Procurement Performance in Jimma University Medical Center*” 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. Abdissa Ararsa, 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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Mr. Belay Chekol

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## DECLARATION

I hereby declare that this thesis entitled “*Determinants of Pharmaceuticals Material Procurement Performance in Jimma University Medical Center*” has been carried out by me under the guidance and supervision of Dr. Reta Megerssa and Mr. Belay Chekol.

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

Researcher’s Name

Date

Signature

Abdissa Ararsa

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## **ACKNOWLEDGEMENTS**

First and foremost, my sincere gratitude goes to my Main Advisor Dr. Reta Megersa and Co Advisor Mr. Belay Chekol for their guidance, enthusiastic encouragement, and useful critiques of this paper. They have also helped and assisted me in keeping my progress on schedule.

I would also like to acknowledge the cooperation and assistance provided by technical and managerial staffs of Jimma University Medical Center and Jimma University College of Business and Economics Department of Management who facilitated our studies in the various courses.

My final word of thanks goes to my brother, colleagues at work and a very important friend for the encouragement and support throughout the entire duration of this project and who shared my burden and makes my task smooth.

Last but not least, I would like to appreciate all those friends of mine who showed me their concern for my success, whose assistance have proved to be worthwhile during my project work that helped me in the achievement of this piece of work.

# Table of Contents

CERTIFICATE .....	I
DECLARATION .....	II
ACKNOWLEDGEMENTS .....	III
Table of Contents .....	IV
LIST OF TABLE AND FIGURE .....	VIII
ACRONYMS/ABRIVATIONS .....	X
<i>ABSTRACT</i> .....	XI
CHAPTER ONE .....	1
INTRODUCTION .....	1
1.1 Background of the Study .....	1
1.2 Background of the Organization .....	3
1.3 Statements of the Problem .....	4
1.4 Objective .....	5
1.4.1 General Objective .....	5
1.4.2 Specific Objectives .....	5
1.5 Significance of the Study .....	6
1.6 Scope of the Study .....	6
1.7 Limitations of the Study .....	6
1.8 Organization of the Paper .....	7
1.9 Operational Definitions and Concepts .....	7
CHAPTER TWO .....	9
RELATED LITERATURE REVIEW .....	9

Introduction.....	9
2.1. Theoretical Framework.....	9
2.1.1 Meaning of Procurement.....	9
2.1.2 Public Procurement.....	9
2.1.3 Objectives of Procurement.....	10
2.1.4 Procurement Performance.....	11
2.1.5 Procurement Planning.....	12
2.1.6 Procurement Process.....	12
2.1.7 Resource Allocation.....	13
2.1.8 Information Technology.....	13
2.2 Empirical Review.....	14
2.3 Conceptual framework.....	17
CHAPTER THREE.....	18
3. METHODOLOGY OF THE STUDY.....	18
Introduction.....	18
3.1 Descriptions of the study area.....	18
3.2 Research Design.....	18
3.3 Data Source and Collection Method.....	19
3.4 Target Population.....	19
3.5 Sample size.....	19
3.6 Method of data collection.....	20
3.6.1 Primary data.....	20
3.6.2 Secondary data.....	21
3.7 Validity and Reliability.....	22

3.8 Data Processing and Analysis.....	22
3.8.1 Descriptive Analysis .....	23
3.8.2 Inferential Analysis.....	23
3.9 Model Specification and Study Variables.....	24
3.10 Ethical Consideration.....	24
CHAPTER FOUR.....	26
Result and discussion.....	26
4.1 Introduction.....	26
4.1.1: Individual response rate by Category .....	27
4.2 Demographic Characteristics of the Respondents .....	27
4.2.1 Gender of the Respondents .....	27
4.2.3 Respondent Martial status.....	28
4.2.4 Respondents' Educational Qualifications .....	28
4.2.5 Respondent's working experience in JUMC .....	29
4.3 Determinants of pharmaceutical material procurement performance / Current phenomena. .....	29
4.4 Inferential Analysis.....	35
4.4.1 Correlation Analysis .....	35
4.4.2 Regression Analysis.....	36
4.4.3 Assumptions of Multiple Linear Regressions.....	37
4.4.4 Model Summary.....	40
4.4.5 ANOVA Analysis .....	41
4.4.6 Discussion .....	43
CHAPTER FIVE .....	46



CONCLUSIONS AND RECOMMENDATIONS .....	46
Introduction.....	46
5.1 Conclusion .....	46
5.2 Recommendations.....	48
5.3 Further research .....	49
REFERENCE.....	50
APPENDIX I .....	i
APPENDIX B .....	v

## LIST OF TABLE AND FIGURE

### LIST OF TABLE

TABLE 1: TOTAL POPULATION AMONG THE CATEGORY /STRATA.....	20
TABLE 2: INDIVIDUAL RESPONSE RATE BY CATEGORY.....	27
TABLE 3 : AGE (YEARS).....	28
TABLE 4: MARITAL STATUS.....	28
TABLE 5: RESPONDENT’S EDUCATIONAL QUALIFICATION.....	29
TABLE 6: HOW LONG YOU HAVE BEEN WORKING WITHIN JUMC.....	29
TABLE 7: PROCUREMENT PLANNING.....	30
TABLE 8: PROCUREMENT PROCESS.....	31
TABLE 9: RESOURCE ALLOCATION.....	32
TABLE 10: INFORMATION COMMUNICATION TECHNOLOGY.....	33
TABLE 11: PROCUREMENT PERFORMANCE.....	34
TABLE 12: CORRELATION ANALYSIS OF THE MODEL.....	36
TABLE 13: COLLINEARITY STATISTICS.....	38
TABLE 14: OVERALL MODEL SUMMARY.....	41
TABLE 15: ANOVA.....	41
TABLE 16: COEFFICIENT OF DETERMINATION.....	42

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## List of Figure

FIGURE 1: CONCEPTUAL FRAME WORK.....	17
FIGURE 2: RESPONSE RATE .....	26
FIGURE 3: GENDER .....	27
FIGURE 4: HISTOGRAM .....	39
FIGURE 5: <i>NORMAL P-P PLOT</i> .....	39
FIGURE 6: SCATTERPLOT.....	40

## **ACRONYMS/ABRIVATIONS**

EPPA	Ethiopia Procurement and Property Administration
FMOH	Federal Ministry of Health
JUMC	Jimma University Medical Center
ICT	Information Communication Technology
MOH	Ministry of Health
PFSA	Pharmaceuticals Fund and Supply Agency
PPA	Public Procurement and Property Administration Agency
SPSS	Statistical Package of Social Science
USAID	United States Agency for International Development
WHO	World Health Organization
UN	United Nations

## **ABSTRACT**

*Public procurement is a key tool to the overall achievements of reducing poverty and providing health, development of infrastructure, education and other services. The purpose of this study was to assess the determinants of pharmaceutical material procurement performance in Jimma University Medical Center. The study adopted a descriptive and explanatory research design to assess determinants relating to the procurement performance for it requires deeper investigation. The study involved 113 employees. Mixed research methods were used. The sample was drawn using stratified sampling method. Primary and secondary source of data were used. Both descriptive and inferential data analysis methods were used using the statistical package for social science (SPSS) 20 versions. The study revealed that there is poor trend of giving training on procurement planning for pharmaceuticals, Poor Procurement process to support timely procurement of pharmaceuticals, low level of ICT utilization of pharmaceuticals procurement and had poor budget policies that monitor budget spending in Jimma University Medical Center. The study found out that procurement performance has strong positive correlation and significant associated with the determinants of pharmaceutical procurement. The model depicts that Planning accounts for 16.2% of variations in procurement performance, procurement process accounts for 26.2%, resource allocation accounts for 19% and lastly information technology accounts for 38.2% of variations in procurement performance. Finally it was recommended that pharmaceuticals procurement function at Jimma University Medical Center needs, good culture of developing pharmaceuticals procurement planning and implementations, reduces internal red tapes through improving communication and information exchange; Participatory budgeting enhance Culture of budget policies that monitor budget spending and adopting of information technology.*

**Key Words:** *Procurement planning, Procurement process, Resource allocation, Information Communication technology and Procurement performance.*

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

This section covers the following sub sections: background of the study, the study Area, Statement of the problem, objective, Significance of the Study, limitations of the Study, Scope of Study, organization of Paper, operational definition and concept.

Procurement, being the process of obtaining services, supplies, and equipment in conformance with applicable laws and regulations takes place locally, nationally, and internationally among a number of public, private, national, and local entities. (Antony & Josphat ,2016 ). Developing countries have not been limited to regulations only, included public procurement process, methods, procurement organizational structure, and the workforce. Many procurement activities still suffer from neglect, lack of proper direction, poor co-ordination, slow with a lot of bureaucracy, lack of open competition and transparency, differing levels of corruption, have not trained and qualified procurement specialists, who are competent to conduct and manage the procurement process in a professional, timely and cost effective manner

In low-income countries, procurement process is often constrained by limited human resources, inadequate financing, and absence of information on prices and suppliers. Other factors include lack of awareness of government and donor regulations, overlapping procurement systems and processes, and unsynchronized or outdated rules and guideline (Kakwezi & Nyeko, 2010).

Procurement performance was characterized by cost/productivity, time or speed, operations flexibility and quality (Wolfe, 2012). To achieve procurement performance, firms must consider all resources at its disposal for instance through employees, the organization must consider them as assets and they must be treated with great attention so that the employees become motivated and productive. Procurement performance is important to an organization since an organization's ability to perform financially is critical and must be monitored both in the short and in the long run. Performance is a concept that is context-based and does not have a single means of measurement (Gompers & Metrick, 2013).

The public entities largely responsible for the procurement of essential medicines often lack the technical capacity to efficiently and strategically carry out the procurement process; inadequate

planning and forecasting and the use of archaic methods of procurement contribute to high drug costs and commodity insecurity. The procurement of essential medicines and health commodities takes place within the larger framework of a national public procurement system. A general shift toward decentralization of public procurement has been observed in many developing countries, prompted by legislative reforms aimed to increase local involvement, accountability and availability of products and services shortages in Health facilities (Arney & Yada, 2014).

In Kenya, to manage effectively and more efficiently the procurement process, procuring entities through the existing legal framework are required to firstly consolidate departmental procurement plans to provide the entity's corporate procurement plan which before its implementation must get the accounting officer's approval (Japheth, 2013). Also, In Nigeria poor planning and forecasting, insufficient information about consumption and current stock levels, funding and capacity constraints and a poor infrastructure are reasons for inappropriate stock levels (Transaid, 2010).

Pharmaceutical procurement process is inherently complex because it involves the coordination of MOH agencies, funding sources, suppliers, and manufacturers. In low-income countries, the process is often constrained by limited human resources, inadequate financing, an absence of information on prices and suppliers, lack of awareness of government and donor regulations, overlapping systems, and outdated rules and guidelines (WHO, 2006).

WHO advocates procurement should take place against a list of essential medicines. The selection of medicines that are available for procurement in the public healthcare sector takes place through the National Essential Medicines List (Bada & Jacqui, 2013).

The Federal Ministry of Health (FMOH) of Ethiopia has been working to ensure an efficient and high performing health care supply chain that ensures an equitable access to affordable medicines for all Ethiopia. Significant progress has been made although various challenges including wastage, stock outs, and poor health outcomes remain. According to health sector performance report form Delivery project 2013 and 2014 health institutions are ailing from shortage of drugs or holding on expired drugs. Health centers and dispensaries are hardly stocked with the recommended medicines. It indicates that high rate of expired drugs in dispensaries and other public hospitals indicates poor planning and high wastage of public resources and this affects efficient delivery of quality services. Procurement is an important part of efficient management and critical for all of level health care institutions.

## **1.2 Background of the Organization**

Jimma University Medical center is one of the oldest public hospitals in the country. It was established in 1930 E.C by Italian invaders for the service of their soldiers. Though old for its age, it had not made remarkable physical facility improvement for years. However in the later times it became evident that some side-wing buildings were constructed by different stakeholders at different times to respond to the ever-growing pressure of service demand and clinical teaching need derived from the public and Jimma University respectively. Especially, after transfer of its ownership to Jimma University, the university has made relentless efforts in extensive renovation and expansion work to make the Medical center conducive for service, teaching and research.

Currently it is the only teaching and referral Medical center in the southwestern part of the country, providing services for approximately 15,000 inpatient, 160,000 outpatient attendants, 11,000 emergency cases and 500 deliveries in a year coming to the hospital from the catchment population of about 15 million people. Cognizant of the fast growing service and teaching role of the Medical Center, best 600 bedded which was functional ([Jimma](#) university webpage).

During the year 2016/2017 (2009 E.C) the total budget allocated for Jimma University Medical Center is 107,910,802.00 birr and from this allocated government budget 60% of the birr is for procurement of goods and works and from this about half (50%) of birr is used for procurement of pharmaceutical products (2009 JUSH budget document ). This shows that the procurement section of the hospital is running huge government resources.



### **1.3 Statements of the Problem**

Most developing countries are facing a problem of rapid changes in public pharmaceutical procurement (Kakwezi.P & Nyeko, 2010). Many procurement activities still suffer from neglect, lack of proper direction, poor co-ordination, slow with a lot of bureaucracy, lack of open competition and transparency, differing levels of corruption and not having a cadre of trained and qualified procurement specialists who are competent to conduct and manage the procurement process in a professional, timely and cost effective manner (Mburu, 2014). Statistics from World Procurement show that Retirement Benefit Authority continues to lose Billions of money related to procurement scandals (World Procurement, 2014).

One of the major setbacks in public procurement is poor procurement planning and management of the procurement process which include needs that are not well identified and estimated, unrealistic budgets (Mamiro, 2010). Pharmaceuticals represent a large portion of the costs in the healthcare system. They account for 20–60% of health spending in developing and transitional countries (Cameron et al., 2009).

The annual report from Supply chain and pharmaceutical services section of the Jimma University Medical center showed there was delay in procurements of pharmaceuticals. The procurement process for pharmaceuticals was time consuming and labor intensive. In the same manner the reports from the office showed that many rules, regulations and directives that had not simply avoided and looked over. In addition, they were time that cancels surgeries due to stock out of pharmaceuticals for surgery and provided insufficient Pharmaceuticals quantities.

There are international and local empirical studies on determinants of procurement performance, but a lot of studies not focused on the determinants of procurement planning, Organizational resource, information technology, and procurement procedure on pharmaceuticals procurement performance. Furthermore, Jimma University Medical Center had been experiencing time-to-time shortages of pharmaceuticals material. Therefore, it's not in the position to deliver better health care to patients. The focus of this study was to assess the determinants of pharmaceuticals procurement performance and effect with regards to procurement planning, procurement process; resource allocation and Information Communication Technology in JUMC. The studies conducted on procurement of pharmaceutical in Nigeria and Kenya were varying in contexts of demographics, economic, political and environmental factors and institutional settings than Ethiopian public health institutions.

Hence, their findings couldn't be generalized to the subject of the study. This study sought to fill this research gap by critically examining determinants of pharmaceuticals procurement performance in Jimma University Medical Center.

To this end the investigation attempted to answer the following research questions.

1. What is the relationship between Pharmaceuticals procurement planning and procurement performance in Jimma University Medical Center?
2. What is the effect of procurement process on procurement performance of Pharmaceuticals in Jimma University Medical Center?
3. To what extent does allocation of resources affect the performance of Pharmaceuticals procurement at Jimma University Medical Center?
4. What is the effect of information technology (ICT) on procurement performance of Pharmaceuticals in Jimma University Medical Center?

## **1.4 Objective**

### **1.4.1 General Objective**

To assess determinants of pharmaceutical material procurement performance in public health institutions in case of Jimma University Medical Center .

### **1.4.2 Specific Objectives**

- ✓ To explain the relationship between procurement planning and procurement performance of Pharmaceuticals in Jimma University Medical Center.
- ✓ To explain the effect of procurement process on procurement performance of Pharmaceuticals in Jimma University Medical Center
- ✓ To identify the extent of the resource allocation on procurement performance of Pharmaceuticals in Jimma University Medical Center.
- ✓ To explain the effect of information technology (ICT) on procurement performance of Pharmaceuticals in Jimma University Medical Center.

## **1.5 Significance of the Study**

This study could provide a chance of broadening the skill of analyzing, interpreting and come up with a clear understanding the determinants of pharmaceuticals material procurement performance in Jimma University medical center.

The findings and recommendations of the study will be useful to the government, all pharmaceutical procurement units in public Health institutions and interested stake holders for guidance in coming upon with a comprehensive policy that is supportive to effective management of the procurement performance.

The study is critical and improves pharmaceutical material procurement performance in terms of improving access to essential medicines and improving health outcomes by applying the recommendations which help to save significant amount of public resource.

Finally the findings may also be useful as reference materials guiding future studies and encourage other researchers to conduct similar researches on the subjects.

## **1.6 Scope of the Study**

Due to the nature, resource, data manageability, time and cost constraints, this study intend to look only at Jimma University Medical Center and due to the different determinants in pharmaceuticals procurement performance, only focused with regards to procurement planning, Procurement process, budget allocation and Information communication technology of pharmaceuticals materials. Hence due to the above mentioned constraints the study has been limited to specified public health institution.

## **1.7 Limitations of the Study**

Unavailability of enough literature and concrete research on the subject made was only limited to Jimma University Medical Center. Furthermore the study is constrained by lack of clear and wide range of previous empirical studies on determinants of pharmaceutical materials procurement performance clear indicators for its measurements and also only covers with regards to pharmaceuticals procurement planning, procurement process, budget allocation, and Information communication Technology.

## 1.8 Organization of the Paper

This research paper have the following organization: The introductory chapter dealt with the background of study, background of the organizations, statement of the problem, research questions, Objectives of the study, significance and scope of the study, Limitations of the Study and definition of terms. Chapter two discussed the review of related theoretical and empirical literatures on basic concepts. Chapter three described research design and methodology, sample and sampling methods, tools, procedures and sources of data collection and data analysis. Chapter four covered the findings of the study, result and discussion of the findings by comparing with the existing literature and best practices. Chapter five summarized the findings, drawn conclusions and also presented the limitations and recommendations from the study.

## 1.9 Operational Definitions and Concepts

**Procurement:** is a wider term than purchasing, which implies the acquisition of goods /service in return for a monetary or equivalent payment. Procurement is the acquisition of goods and/or services at the best possible total cost of ownership, in the right quality and quantity, at the right time, in the right place and from the right source for the direct benefit or users.

**Pharmaceuticals:** means any substance or mixture of substances used in the diagnosis, treatment, mitigation or prevention of a disease, and includes medical instruments and medical supplies (Federal Negarit Gazeta, proclamation no: 553/2007)

**Medical supplies:** means any Article that may be used on the inner or outer part of the human body for diagnosis or treatment of disease, and includes' Suture materials , syringes, needles, bandages, gauze, cotton and similar products, chemicals and x'-ray films; (Federal Negarit Gazeta, proclamation no: 553/2007)

**Medical instrument:** means any instrument that may be 'used on the) inner or other part of the human body for diagnosis or treatment of a disease, and include, various -diagnostic, laboratory, surgery and dental instruments: (Federal Negarit Gazeta, proclamation no: 553/2007)

**Procurement Performance:** The holistic process of managing and increasing the added value of procurement using those five “R” in procurement.

**Procurement Planning:** is an annual event integrates procurement proposal with the budget estimates in the context of long-term strategic development plans and multi-year demand planning.

**Procurement process:** is each step followed or undertaken to procure items starting from the request of items till delivery of items.

**Resource Allocation:** Resource allocation is the process of assigning and managing budget in a manner that supports an organization's strategic goals. Resource allocation involves balancing competing needs and priorities and determining the most effective course of action in order to maximize the effective use of limited resources.

**Information Communication Technology:** Tools and resources used to communicate and to Create, disseminate, store, manage information and this enhances procurement processes.

# **CHAPTER TWO**

## **RELATED LITERATURE REVIEW**

### **Introduction**

This chapter presents a review of available literature related to the determinants of procurement performance in an organization. The purpose of the literature review was to create a deeper understanding of the issues under research.

### **2.1. Theoretical Framework**

#### **2.1.1 Meaning of Procurement**

It defined as “the acquisition of property, plant or equipment, goods, works or services through purchase, hire, lease, rental or exchange” and is taken to include all actions from planning and forecasting, identification of needs, sourcing and solicitation of offers, evaluation of offers, review and award of contracts, contracting and all phases of contract administration until delivery of the goods, the end of a contract, or the useful life of an asset (UN, 2006).

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

Procurement commonly involves purchase, planning, standards determination, specifications development, supplier research and selection, value analysis, financing, price negotiation, making the purchase, supply contract administration, inventory control and stores, and disposal and other related functions (Corsten, 2009).

#### **2.1.2 Public Procurement**

Public procurement is an important function of government, aiming to satisfy requirements for goods, works, systems, and services in a timely manner. Ideally, public procurement should meet the basic principles of good governance: transparency, accountability, and moreover, should ensure value for money (Wittig, 2003).

### 2.1.3 Objectives of Procurement

The overall objective of procurement function is that it to obtain the right materials in the right quantity, for delivery at the right time and place, from the right source with the right service and the right price. An effective public procurement system allows suppliers to provide satisfactory quality, service and price within a timely delivery schedule. The basic tenet of public procurement is contained in what are described as the “five rights”: the right product or service of the right quality and right price, and the right quantity, at the right place and time. Bailey (1994)

To obtain the right product or service, a generic description within a clear specification is required.

**I. Right quality**-The right description and specifications, with the appropriate quality inspections that set the minimum standard acceptable, unambiguous, generic, and are not suited or aligned to one particular firm or group of firms. All tender respondents have equal opportunity in obtaining all relevant details. Specifications avoid stating that items will be procured “as per sample”, to ensure transparency.

**II. Right quantity**-Right quantity for procurement is justified, taking into consideration all the stocks available. As many requirements for the same item as possible are consolidated, taking into account the shelf-life of items and the lead time for procurement. No major change to the tendered quantity occurs after submission, because this raises suspicion and creates a lack of transparency. There is vigilance when it is necessary to distribute quantities among more than one tender respondent

**III. Right price**-Rate estimation or justification is based on tangible factors; for example, last purchased rates, published maximum retail price, raw material cost, prices of similar or alternative products, or prevalent industry unit rate price. Due diligence is exerted to look at all pages of all the offers received, to ensure that any price implications in the offer are identified. Vigilance is maintained, especially in cases of closely competitive tenders and unhealthy, cartel-type situations. Anti-fraud or anti-corruption software is applied when available. Protocols exist for declaring conflicts of interest and tracing accountability for all decisions. Negotiations or counter offers are rare and, if used, have specific guidelines, criteria and precautions. The tender system aims to obtain the best possible price, and not an unreasonably low price.

**IV. Right time**-The delivery of the contracted item to the right place at the right time is an important procurement function. Proper buying enhances production schedules without loading warehouse with excessive inventory and also minimizes the unfavorable effects of price changes. In case of regularly used or procuring' items, right time may mean the time when the stock reaches the minimum level adhering the responsibility shared both by the purchasing unit, and the approving body.

**V. Right supplier**-the right source is fundamental component or the major purchasing objectives. Basic information about the number and location of potential suppliers, the nature of products, prices charged and forecasts of the economic condition can be acquired if we are to analyze the supply market effectively rather than simply buy from traditional sources which may not be competitive. But there are problems faced by the purchasing units emending securing right and permanent source of supply. The first problem is identifying potential source of supply, then selecting the right reliable supplier is also challenging. The most difficult challenge is to secure long-term relationship with the right supplier because of the dynamic nature of the business environment and continuous attempt of businesses to make better profit relationship with the right suppliers might not last long. Hence periodic revision of the status of the relationship and making the necessary amendments in agreements is required.

### **2.1.4 Procurement Performance**

The main objectives of performance measurement are to improve efficiency and effectiveness so improving the ability of the firm to deliver goods or services and retain customer satisfaction (Lin, 2011). For decade procurement performance has been attracting great attention from practitioners due to poor performance resulting from non-adherence to power processes and procedures especially in physical distribution management of enterprises. This could be deliberate or sheer ignorance on the value the supply chain function could contribute to any organization (Thomas & Neeson, 2014). Transparency provides the procurement processes are fair and accurately documented.

Accountability and it points out that there is need for accountability to financiers, who may require certain rules to be followed when using the money they have provided. Finally, there is the principle of efficiency and cost effectiveness and this principle is about meeting the 'six rights' of supply (right price, right time, right quantity, quality services, and delivery to the required places and from the most cost effective source (Caldwell, 2009). There is a link between procurement process, efficiency, effectiveness and performance.

Procurement performance starts from purchasing efficiency and effectiveness in the procurement function in order to change from being reactive to being proactive to attain set performance levels in an entity. Performance provides the basis for an organization to assess how well it is progressing towards its predetermined objectives, identifies areas of strengths and weaknesses and decides on future initiatives with the goal of how to initiate performance improvements. Procurement performance is not an end in itself but a means to control and monitor the procurement function (Van Weele, 2006).



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### **2.1.5 Procurement Planning**

Vital components of the procurement process in the preparation of procurement plan. Procurement plan give a clearer picture of how could be organized. Procurement planning is one of the primary functions of procurement with a potential to contribute to the success of public institution's operations and improved service delivery (Mamiro, 2010).

The contribution of procurement planning in facilitating an efficient and effective service delivery in public sector organizations is generally undisputed in both developed and developing countries (Kavua & Ngugi, 2014). Organizations need to adopt procurement planning by developing a strategic plan that enables their procurement departments to align programs, goals, activities and resources with overall organization mission. In addition, they need to determine how they are going to accomplish set targets as laid in procurement strategic plans. The adoption of strategic procurement planning activities is to enhance the operational processes, organizational culture and systems so as to attain positive change (Kakwezi & Nyeko, 2010). Procurement plans serve as road maps and their main goal should be to efficiently use of available resources (Rotich, 2011).

Procurement planning is the process that strives to determine both the procurement needs as well as timing of the acquisition and funding in order to ensure that entire operations are met in an efficient way as required. Performance provides the basis to assess how well public entities are progressing towards predetermined objectives and decides on future initiatives with the goal of initiating performance improvements (Gelderman et al., 2006).

### **2.1.6 Procurement Process**

Pharmaceutical procurement process is inherently complex because it involves the coordination of MOH agencies, funding sources, suppliers, and manufacturers. In low-income countries, the process is

often constrained by limited human resources, inadequate financing, an absence of information on prices and suppliers, lack of awareness of government and donor regulations, overlapping systems, and unsynchronized or outdated rules and guidelines. These constraints can contribute to delayed shipments, high prices, and, ultimately, reduced access to essential medicines for consumers. The lack of capacity to select, forecast, and quantify product requirements, and to manage the procurement process, disrupts the distribution of health commodities to the client. In this context, commodity security cannot be strengthened unless procurement functions are made more effective (DELIVER project, 2006). The procurement process is one of several critical, interrelated components of the public sector health-care supply system. These components include product manufacturing, product selection, product quantification, financing, regulatory control, quality assurance, distribution and service provision (DELIVER project, 2005).

### **2.1.7 Resource Allocation**

Resource allocation is the process of determining the best way to use available assets or resources in the execution of a given project. Companies attempt to allocate resources by minimizing costs and maximizing profits using strategic planning methods, operational guidelines and implement policies and procedures that move the business toward the achievement of its goals (Shantanu et al., 2012). Budget to be one of the most widely used and highest rated cost management tools for cost reduction and control. One of the usefulness of budgeting to the users, the process of budgeting forces manager to become a better administrator and puts planning in the fore-front of managers (Horngren et al.,2008). To implement any strategy, necessary adequate resources must be available whether financial, physical, human or technological (Thompson & Strickland, 2007). If adequate resources are not allocated to motivate and direct the efforts and behavior of employees towards strategy implementation, the strategy may fail (Johnson & Scholes, 2002).

Procurement performance was affected by resource allocation and also have a significant influence on procurement performance, the organization should enhance resource allocation systems in order enhance the performance (Antony & Josphat, 2016).

### **2.1.8 Information Technology**

Due to advancement in technology, business entities have been involving IT system in the procurement process. This is a means of streamlining and automating their purchasing and other processes; current

competitive business environment have recorded IT system as a means of enhancing the purchasing process (Kishor, 2006). Online advertising, communication and computerized tendering process influences performance of the procurement function. IT offers smoother and faster process flow, efficient distribution of information, decentralization of tasks and decisions, increased transparency and better control (Mburu & Njeru, 2014). ICT provides new ways to store, process, distribute and exchange key information with customers and suppliers in the entire procurement system (Simatupang & Sridharan, 2005).

## **2.2 Empirical Review**

This section reviewed the relevant literature on the variables under study to establish the research gaps and therefore provide a guideline along which this study was conducted.

Mamiro (2010) in his findings underscores these facts and concludes that one of the major setbacks in public procurement is poor procurement planning and management of the procurement process which include needs that are not well identified and estimated, unrealistic budgets and inadequacy of skills of procurement staff responsible for procurement. Japheth (2013) also shows in his finding planning have positively effects on procurement performance to a large extent. The study recommends that plans are not static and that preparation of annual procurement plans should be participatory.

Oyamo and Mburu (2014) established that in his finding procurement planning affects distribution of pharmaceutical drug to a great extent. It was also revealed that planning ensures transportation of drugs is done promptly. Further, the study revealed that planning distribution systems maximize service while minimizing total cost. In addition, planning leads to improvement in distribution system. Additionally, the study established that planning enhance availability of drugs in public hospitals. It was also revealed that inventory costs are reduced through procurement planning.

Evans (2016) support in his finding procurement planning secures the provision of right services to clients and reduces disputes during various purchasing evaluation phases, fraud hampers optimal performance of the procurement department, and aggregation of procurement influences the performance of procurement functions. Teresa and Dr. Makori (2017) based on their findings the concluded that procurement performance among pharmaceutical manufacturing firms was affected by purchasing process and financial capacity, the major factors that mostly affected procurement performance among pharmaceutical manufacturing firms in Kenya. The study concluded that

purchasing process was the first important factor that affected procurement performance among pharmaceutical manufacturing firms.

Biruk (2006) conducted a research entitled evaluating the purchasing procedure in Ethiopian grain trade enterprise. Objective of the study was to analyze the purchasing procedures and understanding the relationship between purchasing and other units of the organization. The findings indicated that poor quality of grain is attributable to the fact that no technical specifications are given to purchasers and disloyal act of suppliers. The paper discusses unreliable suppliers are causes of inefficient purchasing since the enterprise has no permanent source of supply. Further the problem of unclear purchasing procedure was mentioned as a research finding. The study recommended developing a clear purchasing procedure for speedy purchasing process. Also development of specification for purchases and training the purchasers on the application of specification is recommended. However, the investigation gives viable information about not only the need to have purchasing procedure but also the importance of communicating it to the concerned staff to enhance efficient purchasing practice.

Mark and Mike (2015) their finding strengthen that Procurement process affects efficiency of supply chain of drugs in their health facility and explain procurement process affects efficiency of supply chain of drugs in their health facility, most of the respondents reported lateness of supplies and some complained of the length of the whole procurement process while a few were concerned with the tedious process in addition to that the procurement process takes at the County level done in two weeks to a month.

Japheth (2013) in his finding support that the funds allocated to the departments for procurement was largely inadequate with the rest 13% indicating that they were not adequate by indicated that funds allocation for procurement influence procurement performance to a large extent.

Antony and Josphat (2016) their finding shows that budgetary allocations were implemented strictly and without external interference and that tenders were awarded based on resource availability. Further, if the resources were not allocated on time thereby did not enhance procurement performance. Since resource allocation was found to have significant influence on procurement performance, it was indicate that the organization should enhance resource allocation systems in order to enhance procurement function performance.

Even though there was inadequacy of funds allocated to the departments for procurement, resource confirmation and resource allocation helps make procurement effective when carried out appropriately.

Julius (2016) Resource confirmation and resource allocation helps, make procurement effective when carried out appropriately. Public institutions need to adopt a culture of transparency and fairness so as to reduce corruption and restore public confidence. The study recommends the training of staff on change management and involving them in key decision making so as to reduce resistance to change and associated unintended consequences. Bureaucracy in public intuitions affected the procurement function efficiency, hence there is need to streamline government operations by eliminating non value adding procedures. Bureaucracy in public intuitions affected the procurement function efficiency, hence there is need to streamline government operations by eliminating non value adding procedures.

Senait et.al, (2016) Resource allocation factor was measured in terms of adequateness of resources, flexibility of budget allocation to fit changes in the economic environment, tender award and tender float based on resource availability and confirmation. The study indicated that a unit increase in the resource allocation would lead to a 0.634 increase in the scores of procurement performance.

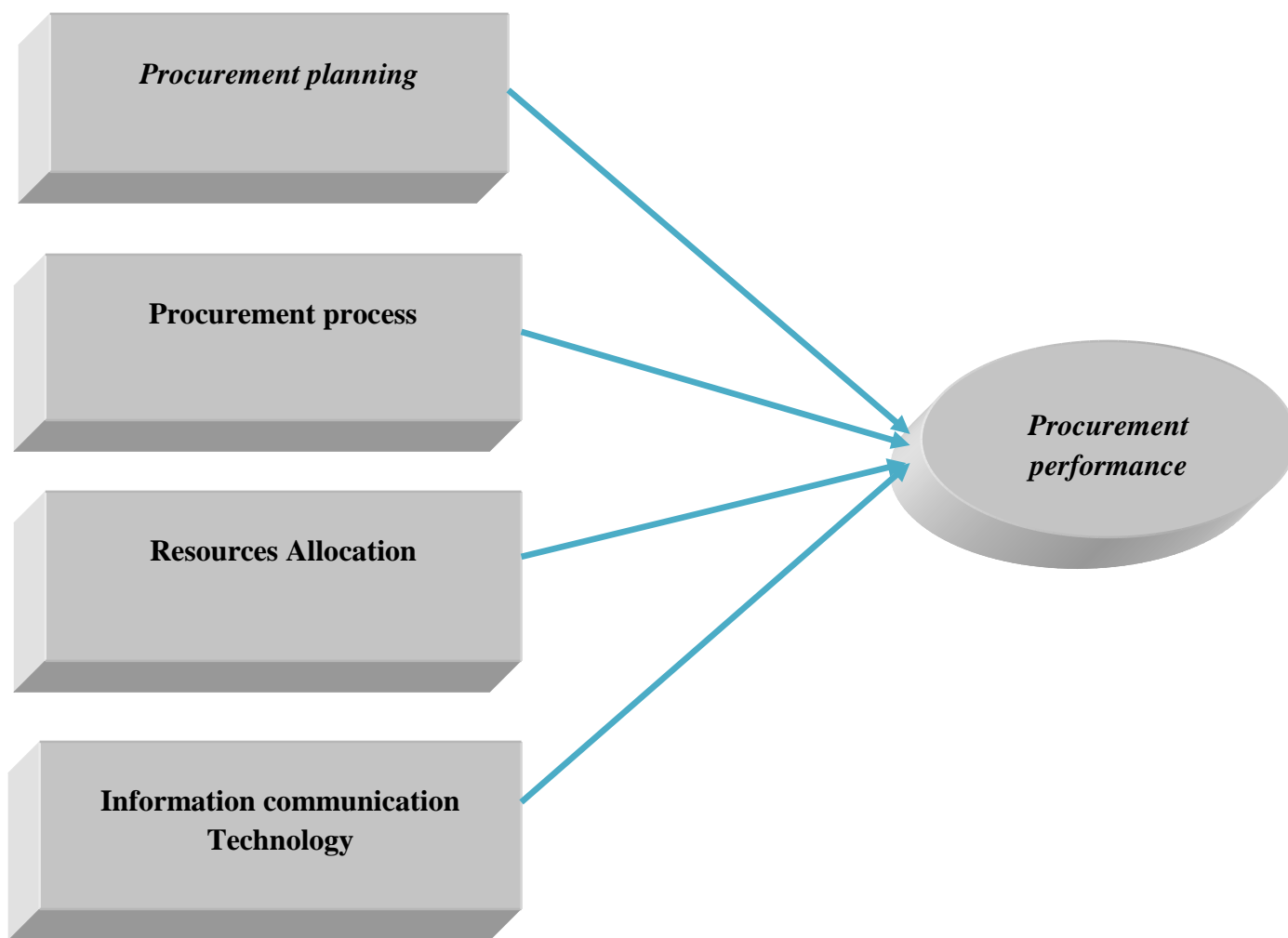
Boniface et al., (2014) Procurement systems were still largely manual, neither streamlined nor automated. This resulted in efficiency and losses. ICT enables systems integration, promotes transparency, accountability, reliability and enhancement of relationship management. Staff members are yet to benefit from attendant ICT use and adoption. Sylvia and Willy (2015) showed in finding, the use of IT in procurement was advertisement and reduction in ordering time. It enhances the process of effective tendering through advertising, and greater awareness of new development. It also enables an institution to provide excellent service to their suppliers in a transparent manner. Willy and Stella (2015) They conclude that ICT adoption affected procurement process by greater extent and educating the worker for ICT system on procurement have positive outcomes.

Generally those studies had conducted in other countries with varying contexts of demographics, economic, political and environmental factors and institutional settings than Ethiopian public health institutions and do not gave emphasis on determinants of pharmaceutical procurement performance rather they focus on other procurement performance.

## 2.3 Conceptual framework

In this study the different determinants of pharmaceutical procurement performance that has analyzed. Based on the literature review and others factors the researcher formulated the following research model.

**Figure 1: conceptual frame work**



*Source: Developed by researcher from reviewed literature, 2018*

## **CHAPTER THREE**

### **3. METHODOLOGY OF THE STUDY**

#### **Introduction**

This section covers the following sub sections: the research design, the target population, sample design which contains sampling techniques, data collection instruments and data analysis and presentation technique.

#### **3.1 Descriptions of the study area**

The study was conducted on Jimma University Medical Center that is located in Oromia National Regional State, Jimma city. The city is found at a distance of 325 Km from Addis Ababa capital city of Ethiopia. Jimma is one of the reform towns in the region and has a city administration, municipality and 13 PAs. Its astronomical location is 7° 4'North Latitude and 36° 5'East Longitude.

Based on the 2007 Census conducted by the CSA, Jimma has a population density of 159.69. While 137,668 or 11.31% are urban inhabitants, a further 858 or 0.03% are pastoralists. The three largest ethnic groups reported in Jimma were the Oromo (87.6%), the Amhara (4.05%) and the Yem (3.12%); all other ethnic groups made up 5.23% of the population. Afan oromo is spoken as a first language by 90.43% and 5.33% spoke Amharic; the remaining 4.24% spoke all other primary languages reported. The majority of the inhabitants were Muslim, with 85.65% of the population having reported they practiced that belief, while 11.18% of the population practiced Ethiopia Orthodox Christianity and 2.97% professed Protestantism. (Form Jimma city profile Based on the 2007 Census conducted by the CSA)

#### **3.2 Research Design**

A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure Kothari (2004). Similarly, there were three types of research methods. Those are quantitative, qualitative and mixed. This research employed both quantitative and qualitative approach in order to address the research questions. The purpose of the study was to assess determinants of pharmaceuticals material procurement performance.

Furthermore, the researcher adopted descriptive research design. Descriptive research is a fact finding enquiry or investigation. It simply describes the current state of affairs as it is. In this research design, the researcher can only report what happened in the past and what is happening in the present, but cannot predict accurately what will happen in the future as the researcher has no control over the variables.

Likewise explanatory research design was adopted to analyze and explain the influence of different determinants of pharmaceutical procurement performance. The research variables include dependent (procurement performance) and different independent variables (procurement planning, procurement process, resource allocation, information communication technology).

### 3.3 Data Source and Collection Method

In this study, both primary and secondary data sources were employed to obtain reliable information about determinants of pharmaceutical material procurement performance.

### 3.4 Target Population

Generally, the target populations are Administration Officers, functional staffs, Supply Chain of pharmaceuticals and procurement and Service delivery units' professions employees of Jimma University Medical Center. The population of this study hasn't includes all members of employees due to limitation of resources such as time and money.

### 3.5 Sample size

The sample size for this study is determined using Kothari (2004) sampling design formula.

$$n = \frac{pq.N.Z^2}{(N-1) e^2 + Z^2 p*q}$$

Where n = sample size of the respondent

N = Total population of the sample size (625)

Z = 95% confidence interval under normal curve (1.96)

e = acceptable error (0.05)

P and q are estimated of the proportion of the population to be sample

(p= 0.10 and q =0.90)

By using this formula the sample size of the selected is 113 employees.



In this study stratified sampling technique was used because every target employee has an equal chance of inclusion in the sample (Kothari, 2004).

Based on specific relevance of the study, targeted population was categorized in to four strata ; namely strata 1- Administration office, strata 2- Supply chain of pharmaceutical and procurement ,Strata 3- functional units /Department and Strata 4- Service delivery units/sections. Accordingly, the researcher randomly selected 113 samples or using lottery method.

**Table 1: Total Population among the category /Strata**

<b>S.no</b>	<b>Categories /Strata</b>	<b>Total Population</b>	<b>Sample population</b>
1	General Administration- Strata	16	3
2	Supply chain of pharmaceutical and procurement – Strata	22	4
3	Functional units /Departmental - Strata	81	15
4	Service delivery units/sections- Strata	506	91
<b>Total</b>		625	113

Source: Jimma University Medical Center base line data (2018)

### **3.6 Method of data collection**

Zikmund (2003) defines data collection tools as an instrument that used to collect information for research that to be conducted or the methods employed to collect research data. According to, Cooper and Schindler (2006), the choice of the methods to use is, influenced by the nature of the problem and the availability of the resource (time and money). Self-administered questionnaires and semi-structured interviews were employed as the necessary instruments for the study.

#### **3.6.1 Primary data**

Questionnaires were developed and distributed to the entire employees of Jimma University Medical Center who worked at different position and departments and structured interviews prepared to conducted as well. The questions used in the questionnaire were open ended and five-point Likert scale type. The reason for using questionnaire was to gathered responses in a standardized way, to make the study more objective, certainly which is more than interviews. Generally it is relatively quick to collect information using a questionnaire.

Potentially, the information that has been collected from the employees is believed to be cost effective, easy to analyze and reduces bias. Before distributing the questionnaire, the researcher has contacted the respondents and clarifies the purpose of the instrument and made a brief discussion on how to fill the instrument on the correct way. To reduce the error the researcher has follow and clarified the unclear area of the instrument before collection to the respondents.

### **3.6.1.1 Questionnaire**

In an attempt to collect data, 113 questionnaires were prepared by the researcher and used as main source of data gathering instrument since the total population were 625 from this 113 sample was selected using random stratified sampling by lottery method. The items were prepared in accordance with the designed objectives and basic questions to be answered in the study concerning the determinants of pharmaceuticals material Procurement performance. The first part of the questionnaire was about the respondents' demographic characteristics which comprised of current position of the respondent, sex, age, marital status, experience and educational status to be answered by the respondents from the given options. The parts two reflect major elements determinants of pharmaceutical material procurement performance. These were presented in five tables with five possible factors presented to be rated by the respondents from strongly disagree to strongly agree.

### **3.6.1.2 Interview**

In addition to the questionnaire, semi- structured interview has been conducted with supply chain of pharmaceutical and procurement staff. Semi- structured interviews were used as the researcher wants to investigate deeply into a topic and to understand thoroughly the answers provided or in order to triangulate the data obtained from questionnaires and to include people's opinions to raise points in depth and support the final findings.

### **3.6.2 Secondary data**

Secondary data has been compiled from files, office manuals, circulars and policy papers that believed to provide appropriate and viable information about determinants of pharmaceuticals material procurement performance. Besides, variety of books, published and/or unpublished government documents, literatures, websites, reports and newsletters was reviewed to make the study fruitful.

### **3.7 Validity and Reliability**

Validity indicates the degree to which the instrument measures what it is supposed to measure (Kothari, 2004). To ensure precision, relevance and content Validity of the instrument, the questionnaire was subject to critical evaluation by the researcher. The valuable comments, corrections, suggestions given by the research experts assisted in the validation of the instrument. The research experts and the supply chain and pharmaceutical staff were expected to tick the items in the questionnaires if they help to determine challenges in pharmaceuticals procurement in Jimma University or not. The content of the responses given by the respondents were checked against the study objectives. Evidence of content relevance, representativeness and relevance to the research variables indicates that the research instruments are valid (Joppe 2000).

A pilot study was done in other health facility to assess the capability of the research instruments to collect required data for the research. To represent all the four categories in the sampling frame two respondents were selected from each category making a total of eight pre-test samples which represent 7% of the total respondents.

The consistency of the scores obtained and how consistence they were for each individual from one administration of an instrument to another; the study used Cronbach's alpha method (A measure of internal consistency of the questionnaire items) using data from all the respondents. Separate reliability tests for each of the variables were computed. Interpreting the reliability scale was alpha listed under the reliability coefficient section at the end of output. The value coefficient alpha ranges from zero (no internal consistency) to one (complete internal consistency). As to how large the coefficient should be a value of not less than 0.70 as a quick rule was used. As shown all the measurement of instrument attained a high degree of reliability since they were 0.85 which is above 0.70. The used multiple items in constructs and so the internal consistency method was applied in the study.

### **3.8 Data Processing and Analysis**

There are three objectives in data analysis; getting a feel for the data, testing the goodness of the data, and answering the research question. Establishing the goodness of data lends credibility to all subsequent analysis and findings because it measures the reliability and the validity of the measures used in the study (Sekaraom, 2003). Reliability and validity of the data was checked adequately. The data was analyzed using descriptive analysis, correlation analysis and regression analysis.

The collected data was entered into a computer and analyzed by researcher using statistical package for social science (SPSS Version 20).

### **3.8.1 Descriptive Analysis**

The descriptive statistics such as percentage, frequency, charts and graphs were used to analyze data obtained through close-ended questionnaire regarding determinants of pharmaceuticals material procurement performance.

### **3.8.2 Inferential Analysis**

According to Sekaran (2000) inferential statistics allow to assume from the data through analysis the relationship between two or more variables and how several independent variables might explain dependent variable. The following inferential statistical methods were used in this study.

#### **Pearson Correlation Coefficient**

The study was aimed to assess the determinants of pharmaceuticals material procurement performance in Jimma University Medical Center and the researcher thought as Pearson correlation helps to show the relationship between the studied variables to measures the “linear association” between two variables i.e. the independent and dependent variables (Hair et al.,2008).

According to Duncan C. and Dennis H. (2004) correlation coefficient can range from -1 to +1. The value of -1 represents a perfect negative correlation while a value of +1 represents a perfect positive correlation. A value of 0 correlations represents no relationship among the variables. According to Pallant (2010) these types of model assumed to provides a clue of directions, positive when one variable increases and so do the other one or negative when one variable increases and the other one decrease.

#### **Linear Regression Analysis**

Besides to the person correlation, to show the extent to which independent variable affect the dependent variable multiple linear regression analysis was employed to investigating the association in which the effects of two or more independent variables on a single, dependent variable has been studied simultaneously (Zikmund et al.,2010). It is also used to understand by how much each independent variable (Procurement planning, Procurement process, Resource allocation and Information communication technology) to explain the dependent variable (Procurement performance).

Linear regression is a method of estimating or predicting a value on some dependent variable given the values of one or more independent variables. In this study multiple linear regressions was employed (John Adams, et al., 2007).

### **3.9 Model Specification and Study Variables**

The equation of regression in this study is generally built on two sets of variables, namely dependent variable (Procurement performance) and independent variables (Procurement planning, Procurement process, Resource allocation and Information communication technology).

The basic objective of using regression equation in this study is to make the study more effective in describing, understanding and predicting the stated variables as well.

Multiple regression models below were used:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where

Y= Procurement Performance

X1= Procurement Planning

X2= Procurement Process

X3= Resource Allocation

X4= Information Technology

$\beta_0$  is the intercept term- constant which would be equal to the mean if all slope coefficients are 0.

$\beta_1, \beta_2, \beta_3, \beta_4$ , are the coefficients associated with each independent variable and measures the change in the mean value of Y, per unit change in their respective independent variables.

$\epsilon$  = standard error.

### **3.10 Ethical Consideration**

Before collecting the data the researcher contact the CEO (Chief Executive Officer) of Jimma University Medical Center and heads of each section and explain the purpose of the research. At the beginning the researcher informs oral consent and orientation on how to fill the questionnaire. The questionnaires are distributed to the respondents to express their opinion. The question was clearly simplified and structure in a manner without any ambiguity and technical details.

To facilitate the data collection process questionnaires are prepared in English language. In line with McNiff (2004) cited by Gibbs and Costley (2006) a sensitive approach will be adopted against interview participants. This will be done to ensure effective cooperation between the researcher and the respondents. The results of the questionnaire are strictly confidential though the results are published in the course of the study.

Thus there is no reference given about the respective names of the respondents in the study report. Secondly, the interview will not be recorded by audiotape to avoid dissemination of the information on the part of the participants. Finally, the participation in the study is voluntary and no one will be prejudiced for failing to participate.

An informed consent form showing the purpose of the study and acceptance of participation will be distributed to each participant before administration exercise.

## CHAPTER FOUR

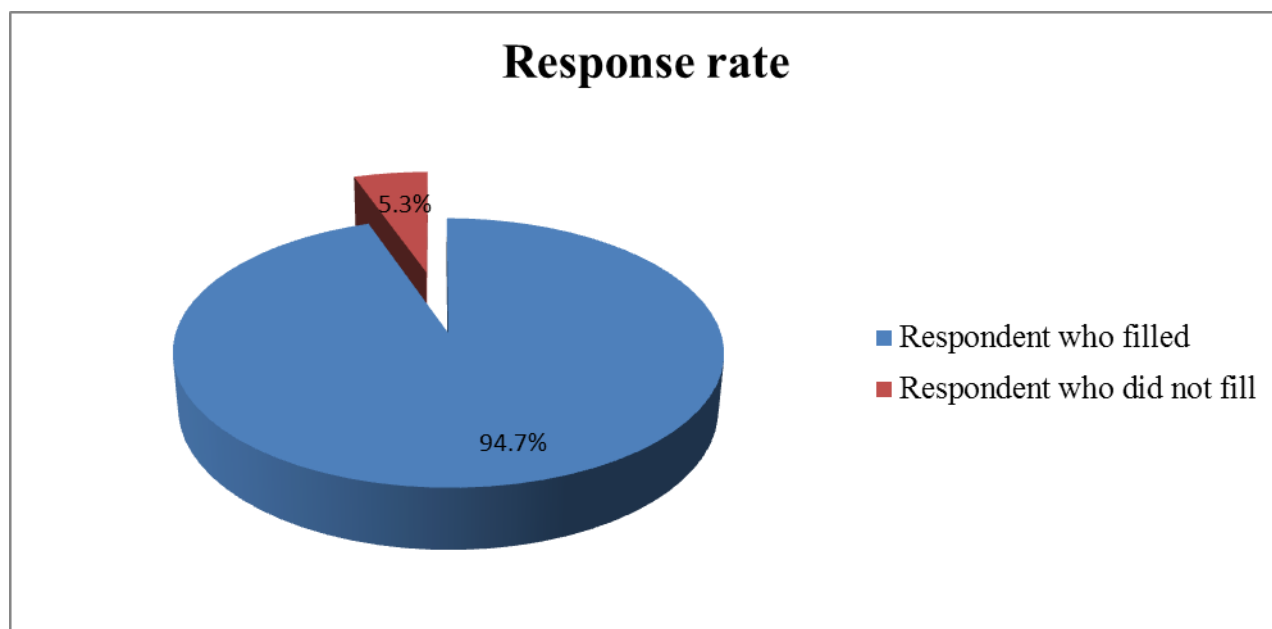
### Result and discussion

#### 4.1 Introduction

As indicated in the previous chapter, the aim of this study was to assess the determinants of pharmaceutical material procurement performance in Jimma University medical center. This chapter therefore presents the findings, analyzes them as well gives an interpretation of them.

The study distributed 113 questionnaires to sampled staff working in Jimma University Medical Center. Out of those, 107 sample respondents filled in and returned the questionnaire while 6 respondents did not return the questionnaire contributing to 94.7% response rate.

**Figure 2: Response rate**



This response rate was attributed to the data collection procedure, where the researcher personally administered questionnaires and waited for respondents to fill in, and picked the questionnaires once fully filled. The response rate demonstrates a willingness of the respondents to participate in the study. This was in line with Orodho (2009) that a response rate above 50% contributes towards gathering of sufficient data that could be generalized to represent the opinions of respondents about the study problem in the target population.

### 4.1.1: Individual response rate by Category

Table 2 shows that most respondents were in the position of service delivery. This gave the implication that the majority were able with enough professional authority to direct key decisions regarding matters of procurement in the JUMC since they have day to day activities with pharmaceutical products.

**Table 2: Individual response rate by Category**

Category of strata	Population	Responded	Response rate (%)
General Administration	3	3	100%
Supply chain of pharmaceuticals and procurement	4	4	100%
Functional Unit	15	15	100%
Service delivery unit	91	85	93.4%
Total	113	107	94.7%

Source: Field Survey, 2018

### 4.2 Demographic Characteristics of the Respondents

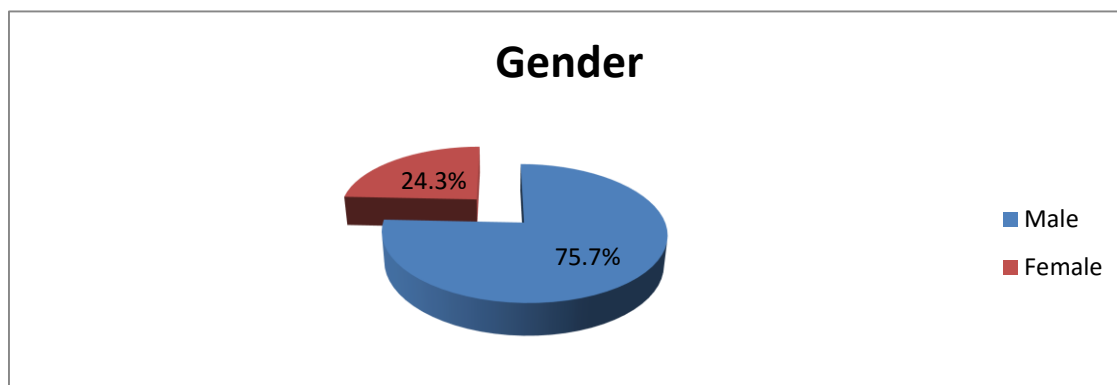
The researcher used for demographic items in the questionnaire; sex, age, job group, work experience in JUMC, and educational qualification. The respondent's responses are as below.

#### 4.2.1 Gender of the Respondents

The study sought to find out the gender of the respondents. According to the findings, 75.7% of the respondents indicated that they were male while 24.3% of the respondents were female.

The results were as shown in figure below.

**Figure 3: gender**





### 4.2.2 Respondent's Age

Table 3 shows that most respondents in the age group 31-40 comprised 53.3% percent followed by age bracket of 20-30 years with 38.3% percent and the age bracket 41-60 years with 8.4 percent. This gave the implication that the majority were able with adequate experience in procurement and gives the relevant information to the study area. They are considers as active work force.

**Table 3 : Age (Years)**

		Frequency	Percent
Valid	20-30 years	41	38.3
	31-40 years	57	53.3
	41-60 years	9	8.4
	Total	107	100.0

*Source: Field Survey, 2018*

### 4.2.3 Respondent Martial status

Table 4 shows that 55 (51.4%) respondents were Single, 51 (47.7%) respondents were married, while 1 (0.9%) respondents were divorced. Majority of respondents were single this implies they are energetic.

**Table 4: Marital Status**

		Frequency	Percent
Valid	Single	55	51.4
	Married	51	47.7
	Divorced	1	.9
	Total	107	100.0

*Source: Field Survey, 2018*

### 4.2.4 Respondents' Educational Qualifications

Table 5 below shows that the level of education was as follows; 16.8 percent had college diploma, majority of the respondents 67.3 percent were degree holders, 14 percent were holding postgraduate qualification and 1.9 percent were PHD holder. This implied that most persons had attained a level sufficient to influence favorably their comprehension of antecedents to effective management of the procurement function and were qualified to understand the nature of the study problem. All the JUMC employees were educated and this indicated that the respondents have vital contribution for the validity and Reliability of the responses they have given for the questionnaires.

**Table 5: Respondent’s Educational Qualification**

		Frequency	Percent
Valid	Diploma	18	16.8
	1st Degree	72	67.3
	2nd Degree	15	14.0
	PHD and above	2	1.9
	Total	107	100.0

Source: Field Survey, 2018

#### 4.2.5 Respondent’s working experience in JUMC

The study determined the working experience held by the respondents in order to ascertain the extent to which their responses could be relied upon to make conclusions on the study problem using their working experience in the study area. From the findings, 41.1% indicated to have a working experience of less than 5 years, 48.6% had a working experience of 6-10 years, 8.4 % had a working experience of 11-15 years and 1.9% had a working experience of 16 years and above. As the result showed that most of the responded has stayed with the JUMC, has long working experience and supposed that this has greater contribution and made the study fruitful as they had good understanding about the study areas and the subject matters as well.

**Table 6: How long you have been working within JUMC**

		Frequency	Percent
Valid	0-5 Years	44	41.1
	6-10 Years	52	48.6
	11-15 Years	9	8.4
	16 Years and above	2	1.9
	Total	107	100.0

Source: Field Survey, 2018.

#### 4.3 Determinants of pharmaceutical material procurement performance / Current phenomena.

Respondents were asked different questions regarding determinants of Pharmaceutical material procurement performance in jimma university Medical center. Their responses are organized one by one and presented as follows. This was on a five (5) point Likert scale (where 1= strongly disagree (SD), 2= Disagree (D), 3= Neutral (N), 4= Agree (A) and 5= strongly agree (SA)) and F represents frequency of respondent.

**Table 7: Procurement Planning**

Variables	SD		D		N		A		SA	
	F	%	F	%	F	%	F	%	F	%
<b>PROCUREMENT PLAN</b>										
There is training program how to prepare procurement planning for pharmaceuticals.	8	7.5	57	53.3	37	34.5	5	4.7	-	-
There is Procurement plan that facilitate procurement activity of pharmaceuticals.	2	1.9	47	43.9	43	40.2	15	14	-	-
Need assessment are properly done prior to procurement of pharmaceuticals.	1	.9	12	11.2	63	58.9	28	26.2	3	2.8
Monitoring and updating of procurement plan for pharmaceuticals is undertaken in regular ways.	-	-	56	52.3	51	47.7	-	-	-	-
Stake holders like Service delivery units involved in procurement planning.	3	2.8	24	22.4	68	63.6	12	11.2	-	-

From the descriptive statistics table 7 above, with the statements that; there is training program how to prepare procurement planning for pharmaceuticals, There is Procurement plan that facilitate procurement activity of pharmaceuticals and Monitoring and updating of procurement plan for pharmaceuticals is undertaken in regular ways were (53.3%, 43.9%, 52.3%) of respondent respectively Disagree on the statements. This implies, it needs more work and improvement or support on this area properly. While with the statement, need assessment are properly done prior to procurement of pharmaceuticals and Stake holders like Service delivery units involved in procurement planning (58.9%, 63.6%) respondent respectively were neutral this also need improvement on this section.

**Table 8: Procurement Process**

Variables	SD		D		N		A		SA	
	F	%	F	%	F	%	F	%	F	%
<b>PROCUREMENT PROCESS</b>										
There is Procurement process to support timely procurement of pharmaceuticals	9	8.4	54	50.5	41	38.3	3	2.8	-	-
There is procurement process to support and identify the right sources for pharmaceuticals	-	-	12	11.2	75	70.1	19	17.8	1	0.9
There is procurement process to support the right quantity of pharmaceuticals	2	1.9	34	31.8	58	54.2	13	12.1	-	-
There is procurement process to support to procure right quality of pharmaceuticals.	-	-	17	15.9	64	59.8	26	24.3	-	-
There is procurement process to support to procure pharmaceuticals with right price	-	-	37	34.6	64	59.8	6	5.6	-	-

From the descriptive statistics table 8 above, with the statements that there is Procurement process to support timely procurement of pharmaceuticals (50.5%) were disagree this implies that there is poor procurement performance which is too late to procure timely this have high risk on consumers of pharmaceutical while there is procurement process to support and identify the right sources for pharmaceuticals, there is procurement process to support the right quantity of pharmaceuticals, there is procurement process to support to procure right quality of pharmaceuticals, there is procurement process to support to procure pharmaceuticals with right price were (70.1%, 54.2%,59.8%,59.8%) respondent respectively was neutral this still shows it need improvement on this areas though the respondents are not sure yet.

According to supply chain and pharmaceuticals service unit coordinator reveal the core supplier of pharmaceutical material for Jimma University Medical center is Pharmaceuticals Fund and Supply Agency (PFSA) of Jimma Branch. However most of required pharmaceutical materials are out of stock at PFSA and in such cases once medical supplies are out of stock at PFSA and taking evidence of this, the Medical Center procures the medical supplies from private suppliers and all level follows what is stated in the PPA, Federal Government of Ethiopia Procurement and Property Administration Proclamation No 649/2009 manual for different types of procurement there are different steps in the procurement process. Open purchase is the one that involves the longest of steps in the process this cause wrong price and cause quantity gap and takes at least two to eight weeks easily.

**Table 9: Resource Allocation**

VARIABLES	SD		D		N		A		SA	
	F	%	F	%	F	%	F	%	F	%
<b>RESOURCE ALLOCATION</b>										
Allocate enough budgets to supports pharmaceuticals procurement	-	-	22	20.6	54	50.5	31	29	-	-
Estimate budget depend on plan set.	2	1.9	37	34.6	62	57.9	6	5.6	-	-
The department has budget policies that monitor budget spending.	1	0.9	55	51.4	36	33.6	15	14	-	-
The budgets have clear goals and objectives.	-	-	42	39.3	58	54.2	7	6.5	-	-
Budget support procurement of pharmaceuticals right quantity	-	-	29	27.1	58	54.2	20	18.7	-	-

From the descriptive statistics table 9 above, with the statements that allocate enough budgets to supports pharmaceuticals procurement (50.5%, 29%) were neutral and agree with the statement, this implies there is good input for enhancing procurement performance and the department has poor budget policies that monitor budget spending since (51.4%) respondent were disagree , in addition to this no respondent were strongly agree with any of statement this also one of indicators for serious emphasis on

this all areas. Budget support procurement of pharmaceuticals right quantity at Jimma university Medical center, still most of respondent were neutral or not sure for the statement. In general resource had an impact on procurement performance.

**Table 10: Information Communication Technology**

VARIABLE	SD		D		N		A		SA	
	F	%	F	%	F	%	F	%	F	%
<b>INFORMATION TECHNOLOGY</b>										
There are PCs, internet connections, photocopier facilities, printers etc. to support pharmaceuticals procurement	-	-	9	8.4	76	71	22	20.6	-	-
Staffs in charge of pharmaceuticals have enough computer literate to support pharmaceuticals procurements	-	-	2	1.9	42	39.3	59	55.1	4	3.7
There is good level of automation to support procurements of pharmaceuticals	3	2.8	49	45.8	55	51.4	-	-	-	-
There is good level of embracement of electronics procurement to support pharmaceuticals procurement.	3	2.8	70	65.3	33	30.8	1	0.9	-	-
There is good level of Electronics procurement to support pharmaceuticals procurement	26	24.3	72	67.3	9	8.4	-	-	-	-

From the descriptive statistics table 10 above, with the statements that Staffs in charge of pharmaceuticals have enough computer literate to support pharmaceuticals procurements (55.1%) respondent were agree this is big opportunities though level of Electronics procurement to support pharmaceuticals procurement in Jimma University Medical center is very poor and (67.3%) of respondent disagree with the statement.

Beside that on the statements, there is good level of automation to support procurements of pharmaceuticals were 45.8% respondent disagree and there is good level of embracement of electronics procurement to support pharmaceuticals procurement 65.3% respondent were disagree this implies there is poor ICT procurement of pharmaceuticals.

**Table 11: Procurement Performance**

VARIABLES	SD		D		N		A		SA	
	F	%	F	%	F	%	F	%	F	%
<b>PERFORMANCE</b>										
There is Right sourcing of items Purchases	-	-	3	2.8	18	16.8	74	69.2	12	11.2
There is Right pricing of items Purchases	4	3.7	58	54.2	35	32.7	10	9.3	-	-
There is Right quantity of items Purchase	-	-	23	21.5	62	57.9	22	20.6	-	-
There is Timely purchases	2	1.9	67	62.6	33	30.8	5	4.7	-	-
There is Right quality items purchases	-	-	17	15.9	43	40.2	38	35.5	9	8.4

From the descriptive statistics table 11 above with the statements that there is timely purchases and there is Right pricing of items Purchases (62.6%,54.2%) respondent respectively were disagree. This implies that there is poor procurement performance, while on the statement of there is right quality items purchases, there is right quantity of items purchases, there is right sourcing of items purchases (35.5%, %, 69.2%) respectively were agree, this is strength and it should continue in same way and good input for improving the performance.

The discussion with the supply chain and pharmaceuticals service unit coordinator revealed that there are also instances users complaining about price and claiming the pharmaceuticals are wrong price. Most of the time Pharmaceutical materials are out of stock in PFSA and bought by bid from private suppliers due to this the price of the pharmaceutical shows increment. Wrong price means the same pharmaceutical is sold at different price on service units. The principles of the five right of purchasing have not been considered in their purchase, and also the management never follows the five rights except emphasis on low price items the simple rule to select among suppliers though users complaining about wrong price and quantity.

## **4.4 Inferential Analysis**

The inferential analysis was used in this study to determine if there was a relationship between variable as well as the strength of that relationship aimed to reach conclusion that extend beyond the immediate data alone between the dependent and independent variables in this study.

### **4.4.1 Correlation Analysis**

A correlation analysis is used to determine the direction and strength of linear relationships existing between variables (Hair et al., 2008). Each independent variable was assessed based on the data collected from the JUMC. In order to quantify the strength of the relationship between variables Spearman's rank correlation coefficient was used.

According to Leedy and Ormond (2010) correlation is the statistical process which discovers whether two or more variables are associated with one another. The Pearson product-moment correlation coefficient,  $r$ ; is the most frequently used measure of association and the basis of many multivariate calculations (Correlation coefficients take on values between -1 and +1, ranging from being negatively correlated (-1) to uncorrelated (0) to positively correlated (+1).



**Table 12: Correlation Analysis of the Model**

		Procurement Planning	Procurement Process	Resource Allocation	Information Technology	Procurement Performance
Procurement Planning	Pearson Correlation	1	.673**	.726**	.700**	.792**
	Sig. (2-tailed)		.000	.000	.000	.000
Procurement Process	Pearson Correlation		1	.852**	.766**	.860**
	Sig. (2-tailed)			.000	.000	.000
Resource Allocation	Pearson Correlation			1	.851**	.890**
	Sig. (2-tailed)				.000	.000
Information Technology	Pearson Correlation				1	.889**
	Sig. (2-tailed)					.000
Procurement Performance	Pearson Correlation					1
	Sig. (2-tailed)					

**Source: Survey data, 2018**

According to table:12 There was a significant association to procurement performance with procurement planning which mean ( $p=0.000$ ) and there was strongly positive correlation between procurement performance and planning which interpreted as well planned procurement leads to increment in procurement performance. Since the correlation between them was ( $r=0.792$ ) that mean an increasing in planning will result in better performance. Besides procurement performance has strong correlation with procurement process, Resource allocation and information technology that were ( $r=0.860$ ,  $r=0.890$ ,  $r=0.889$ ) respectively. These implies that to attain the goal of the procurement performance ,procurement process plays crucial role mean that if the process in procurement is accomplished at required time then it will be resulted in effective performance which also true for resource allocation and information technology.

#### **4.4.2 Regression Analysis**

Besides to the descriptive analysis and person correlation, to show the extent to which the independent variable affect the dependent variable the multiple linear regression analysis was employed to

investigate the association in which the effects of two or more independent variables on a single interval scaled dependent variable has been be studied simultaneously (Zikmund et al., 2010).

It is also used to understand by how much each independent variable (Procurement planning, procurement process, Resource allocation and Information technology) explain the dependent variable (Procurement performance).

#### **4.4.3 Assumptions of Multiple Linear Regressions**

Multiple linear regressions allow a more sophisticated exploration of the interrelationship among a set of variables. It can be used to address a variety of research questions and indicate how well a set of variables are able to predict a particular outcome (Pallant, 2005). In the context of this study, the researcher employed the standard multiple linear regression.

In standard multiple linear regression, all independent variables are entered into the regression equation at once. The assumptions of multiple regressions tested with SPSS and identified as primary concern in this research include; sample size, multi-collinearly, normality, linearity and homoscedasticity. Detailed definitions, descriptions and interpretations of these assumptions as discussed below.

##### **Sample size**

A sample must represent well the characteristics of the population. If a population from which a sample is to be drawn does not constitute a homogeneous group, stratified sampling technique is generally applied in order to obtain a representative sample. Under stratified sampling the population is divided into several sub-populations that are individually more homogeneous than the total population ‘strata’ (Kothari, 2004). In this study random stratified sampling technique was used. Hence, the assumption on sample size requirements for multiple regressions was met by the researcher before analyses.

##### **Multi-collinearity Test**

The researcher is able to interpret regression coefficients as the effects of the independent variables on the dependent variable when collinearity is low. This means that we can make inferences about the causes and effects of variables reliably. Tolerance levels for correlations range from zero (no independence) to one (completely independent) (Keith, 2006). The VIF is an index of the tolerance. When a predictor variable has a strong linear association with other predictor variables, the associated

VIF is large and is evidence of multi-collinearity. The rule of thumb for a large VIF value is ten (Shieh, 2010).

Based on the above assumptions the researcher performed multi-collinearity test to check the dependency of predictor variables with one another and the fitness of the model. As indicated in the table below, there is no existence of multi-collinearity problem among the explanatory variables as tolerance values are greater than 0.1 and VIF values less than 10.

**Table 13: Collinearity Statistics**

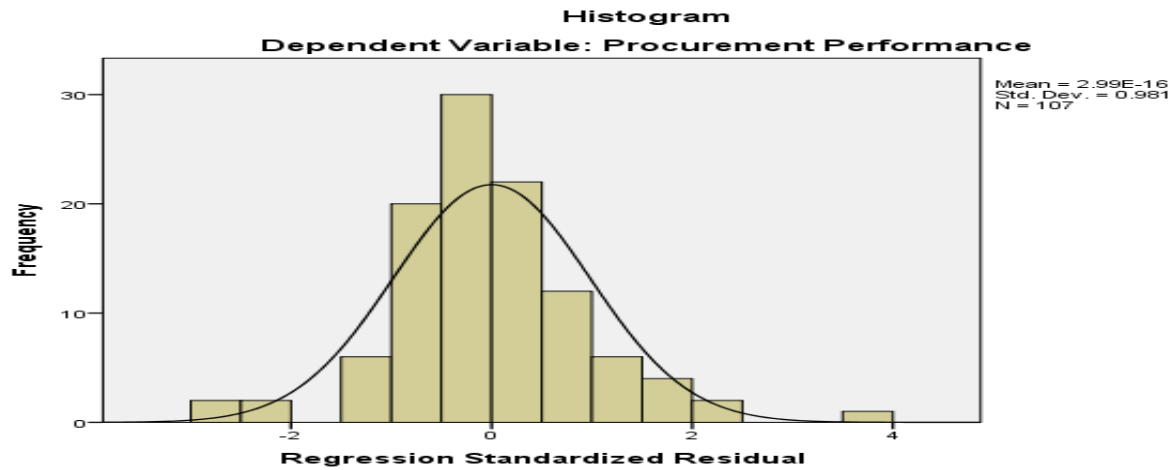
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Procurement Planning	.441	2.266
	Procurement Process	.264	3.781
	Resource Allocation	.171	5.864
	Information Technology	.258	3.880

*SPSS result of 2018*

### Normality

Normality refers to the normal distributions of the residuals about the predicted dependent variable scores. This assumption is based on the shape of normal distribution and gives the researcher knowledge about what values to expect (Keith, 2006). Normality tests are used to determine whether a data set is well-modeled by a normal distribution or not, or to compute how likely an underlying random variable is to be normally distributed (Gujarati, 2009). Normality can be checked through histograms of the standardized residuals (Stevens, 2009). Histograms are bar graphs of the residuals with a superimposed normal curve that show distribution. As depicted in the figure below; which is an example of a histogram with a normal distribution from the SPSS software, there is no normality problem on the data used for this study.

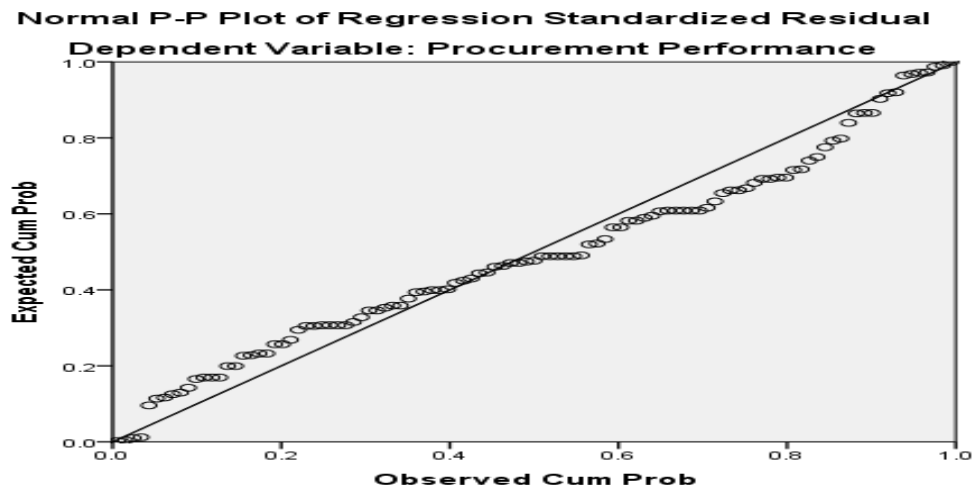
**Figure 4: Histogram**



### Linearity

Multiple regressions can accurately estimate the relationship between dependent and independent variables when the relationship is linear in nature. Linearity has the residuals should having a straight-line relationship with predicted dependent variable scores. It describes the dependent variable as a linear function of the predictor variables. If the relationship between the dependent and independent variables is not linear, the results of the regression analysis have been under- or over- estimates the true relationship of the variables (Osborne & Waters, 2002). Linearity can be best checked by normal p-plot residual. The relationship between the dependent and independent variables is linear

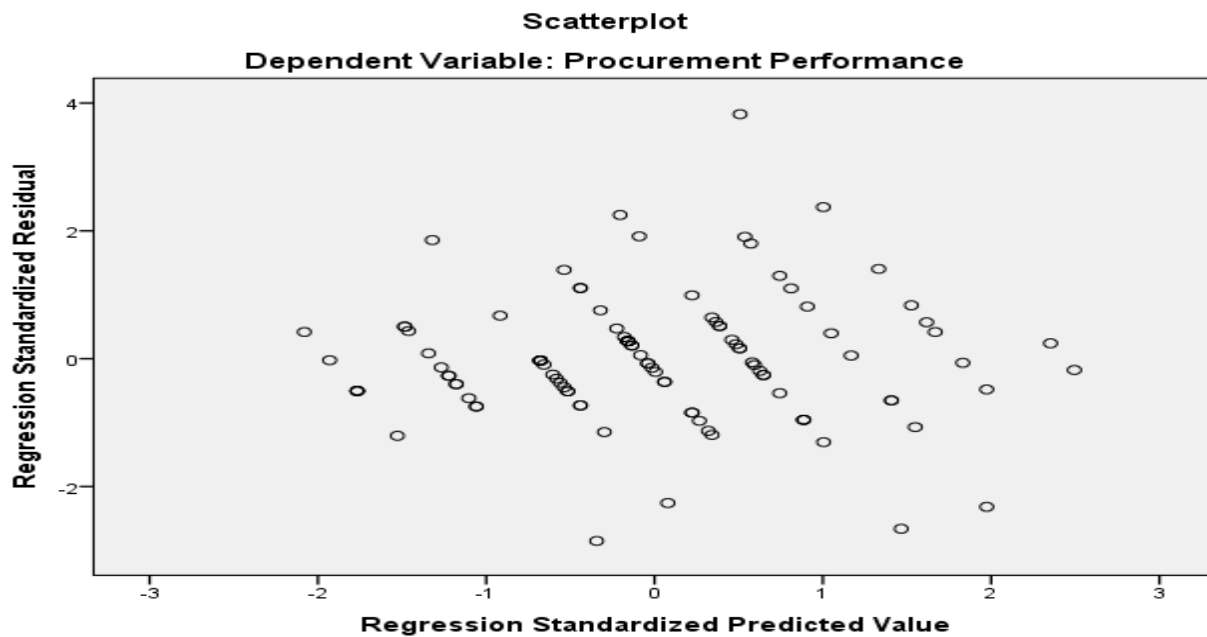
**Figure 5: Normal P-P plot**



## Homoscedasticity

The assumption of homoscedasticity refers to equal variance of errors across all levels of the independent variables (Osborne & Waters, 2002). This means that researchers assume that errors are spread out consistently between the variables. Statistical software scatter plots of residuals with independent variables are the method for examining this assumption (Keith, 2006). Ideally, residuals are randomly scattered around zero providing even distribution (Osborne & Waters, 2002). To check this assumption scatter plot was generated for the model. As shown in the figure below, the error variance is constant since most scattered plot attributes are around zero. Therefore, there is no violation of homoscedasticity assumption in this study.

**Figure 6: Scatterplot**



### 4.4.4 Model Summary

From the result of summary as indicated by the adjusted R Square 90% of variance or changes in procurement performance at JUMC of Pharmaceutical materials were explained in terms of independent variables (Procurement planning, procurement process, Resource allocation and Information technology) even though there were 10% of other parameters that perhaps influence the procurement performance at the study area (Table: 14).

**Table 14: Overall Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.949 <sup>a</sup>	.900	.896	.10892

a. Predictors: (Constant), Procurement Planning, Procurement process, Resource allocation and Information technology.

b. Dependent Variable: Procurement Performance

#### 4.4.5 ANOVA Analysis

**Table 15: ANOVA**

ANOVA <sup>a</sup>						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	10.865	4	2.716	228.969	.000 <sup>b</sup>
	Residual	1.210	102	.012		
	Total	12.075	106			

a. Dependent Variable: Procurement Performance

*Source: Survey data, 2018*

According to Table 15 above, F-test which is the square root of t-test showed significant level of association between dependent and independent variables when the p-value is less than 5% (0.05) and F-test level of critical is 3.24 but here the value of F-test was 228.969 that indicates procurement performance was significantly associated with independent variables (p=0.00). So the model is statistically significance in predicting how the independent variables would influence procurement performance of JUMC.

**Table 16: Coefficient of Determination**

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.120	.099		1.210	.229
	Procurement Process	.262	.058	.274	4.503	.000
	Procurement Planning	.162	.040	.212	4.492	.000
	Resource Allocation	.190	.078	.184	2.426	.017
	Information Technology	.382	.063	.374	6.050	.000

a. Dependent Variable: Procurement Performance.

*Source: Survey data, 2018*

Results on the table: 16 showed that the extent or degree of changes in dependent variables due to independent variables.

Accordingly, multiple regression equation was conducted:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where;

$\beta$  is a correlation coefficient

Y= Procurement Performance

X1= Procurement Planning

X2= Procurement Process

X3= Resource Allocation

X4= Information Technology

$\epsilon$ = Standard error

From the regression equation established, taking all determinants (Procurement Planning, procurement process, resource allocation and information communication technology) constant at zero, the procurement performance at Jimma University Medical center would be 0.120.

When the value in the table: 15 substituted then the equation was:  $Y = 0.120 + 0.162 X_1 + 0.262 X_2 + 0.190 X_3 + 0.382 X_4 + \epsilon$

These findings revealed that at constant all the value of independent variables were zero the procurement performance of JUMC was 0.120. A unit increment in procurement planning increasing procurement performance by 0.162 times and 0.262, 0.190 and 0.382 respectively by procurement processing, Resource allocation and Information technology which all of them showed statistically significant. Generally, this regression model shows how much each predictor variables contributed to the outcome value. As we can find here with the Information communication technology has the highest values which pointed out that if the organization improved its internal weakness and fulfill the entire requirement it maintained better procurement performance.

#### **4.4.6 Discussion**

Procurement performance and organization performance are very interrelated. Procurement function uses the largest portion of an organizations budget. This is why it is important to maximize on effective and efficient management of the procurement function in an entity (Samson et al., 2016). The objectives are commonly defined at two levels, namely in terms of ‘ends’ and ‘means’. In terms of the ‘ends’, procurement objectives are often defined as achieving best value-for-money in advancing the goals and objectives of the entity. The ‘means’ by which value for money outcomes are achieved have two broad goals – those that help sustain the value for money objective and other goals of the agency, and those that protect the management integrity surrounding the use of public funds (IAEA, 2010).

Procurement plan of pharmaceuticals in Jimma University Medical Center as descriptive result indicates poor trend of procurement plan preparation and implementation for pharmaceuticals. As the study shows procurement plan have significant and have strong positive relationship with procurement performance. This had great impact on procurement performance. Mamiro (2010) points out that one of the major setbacks in procurement is poor planning and management of the procurement process which include needs that are not well identified and estimated, unrealistic budgets and inadequacy of the skills of staff responsible for procurement and takes a long time.

Procurement process on pharmaceutical in jimma university medical center has very long step and time consuming. On-time delivery is the ability of any organization to meet the customers' requirements and deliver the products or services to the users on time. Perhaps time is one of the most important issues customers are concerned about. Those businesses that do not value time in their order taking process do not tend to succeed. This is a fact, because customers want every order to be delivered according to their time and this is what every organization has to make sure that they achieve.



According to Supply chain and pharmaceuticals services coordinators, there is late purchase due to a number of reasons. The reasons for delay in purchase include: length of procurement process, involvement of large number of decision makers. The members are holding the responsibility in the committee as part time duty without any additional benefit or compensation and the pharmaceuticals unit has to strictly follow the procurement process which involves verification and approval at different levels and this will take long time. Ngwili and Dr. Susan (2013) their study established that factors like political influence, adherence in procedures, bureaucracy and corruption affect the efficiency of the public procurement. Jones and George (2009) postulated that bureaucratic control mechanism is control by a comprehensive system of formal rules and standard operating procedures (SOPs) that shapes and regulates the behavior of divisions, functions and individuals. SOPs and rules allow employees to perform activities efficiently and effectively.

As the finding shows Jimma University Medical Center has poor budget policies that monitor budget spending on pharmaceuticals. Hence, Organizational budget affect procurement performance and this study also shows budget have a significant effect and have strong positive relationship with the procurement performance. Jairus and Dr. Gladys (2014) stated that budget law and financial procedures supported timely procurement, contract execution, and payment. Organizational budget specific to procurement department is helpful in maintaining the autonomy of the procurement function thus safeguarding it from manipulation from the top management. Senait et.al, (2016) shows on their study a unit increase in the resource allocation would lead to a 0.634 increase in the scores of procurement performance. Resource allocation was measured in terms of adequateness of resources, flexibility of budget allocation to fit changes in the economic environment, tender award and tender float based on resource availability and confirmation.

ICT is one of the determinants that affect Pharmaceuticals procurement. ICT level to support Pharmaceuticals Jimma University Medical Center is weak and it is challenge in pharmaceuticals procurement and the study also shows increment in procurement performance by a unit will result in increasing procurement 0.382. Mburu and Njeru (2014) on their finding;

Online communication, online tender advertising and computerized tendering process influences performance of the procurement function.

IT offers smoother and faster process flow, efficient distribution of information, decentralization of tasks and decisions, increased transparency and better control.

In general to have good pharmaceutical procurement performance in JUMC it is better to strongly focus on the determinants such as procurement planning procurement process resource allocation and ICT.

# CHAPTER FIVE

## CONCLUSIONS AND RECOMMENDATIONS

### Introduction

This chapter provides the conclusions and recommendations of the research based on the objectives of the study. The conclusions and recommendations drawn were dedicated on addressing the objective of this study.

### 5.1 Conclusion

The overall objective of this research work was to assess the determinants of procurement Performance in Jimma University Medical Center, on the basis of the analysis and interpretation, the researcher comes up with the following major points.

The Federal Ministry of Health (FMOH) of Ethiopia has been working to ensure an efficient and high performing health care supply chain that ensures an equitable access to affordable medicines for all Ethiopia.

- The response rate was significant. Majority of the respondents were male. Most of the respondents were between 31- 40 years; it is better position to give reliable information. Majority respondents were first degree therefore the respondents had required skills to perform their tasks well. Majority of the respondents had professional procurement experience over 6-10 years and this showed that majority of the respondents had relevant knowledge in terms of procurement functions.
- Trend of giving training how to prepare procurement planning for pharmaceuticals was very poor and minimum consideration were given besides that monitoring and updating of procurement plan for pharmaceuticals is not undertaken in regular ways. Procurement planning had strong positive relationship with procurement performance ( $r=0.792$ ) and procurement planning accounts for 16.2 % of variations in pharmaceutical procurement performance.
- There is poor procurement process to support timely procurement of pharmaceuticals, the process involves verification and approval at different levels and this will take time. And procurement performance has strong correlation with procurement process( $r=0.860$ ) and the regression model shows a unit increase in procurement process will lead to a 0.262 increases in procurement

performance at JUMC which implies that procurement process accounts for 26.2 % of variations in procurement performance.

- The department has poor Culture of budget policies that monitor budget spending for pharmaceuticals in Jimma University Medical Center and minimum consideration is given to units/departments. The regression model shows, a unit increase in Resource allocation will lead to a 0.190 increases in procurement performance at JUMC which implies that resource allocations accounts for 19.0 % of variations in procurement performance.
- The study sought to evaluate the level of ICT to support pharmaceuticals procurement. The study identified that most of the respondents were disagree with the statement of there is good automations to support pharmaceuticals procurement and there is good level of procurement systems package support pharmaceuticals procurement and good level of embracement to Electronics procurement to support pharmaceuticals procurement. The finding shows the ICT level to support Pharmaceuticals at Jimma University Medical Center is very weak; procurement systems were still largely manual, neither streamlined nor automated. This resulted in efficiency and losses.
- ICT enables systems integration, promotes transparency, accountability, reliability and enhancement of relationship management. And it is the reason for poor pharmaceuticals procurement performance. ICT have strong positive relation with procurement performance. A unit Increase in ICT usage will lead to 0.382 increases in procurement performance.
- The study researcher sought to examine whether pharmaceuticals are procured at right time or not but, the finding shows there is late purchases and wrong pricing of items purchases. In addition to this Supply chain and pharmaceuticals services coordinator confirm that there is late purchases due to lengthy procurement process and involvement of large number of decision makers.
- All the predictors have a positive and strong correlation with the procurement performance. For that reason the independent variables which are studied in this research are strongly determinants for pharmaceutical procurement performance in the study area.
- All independent variables (Procurement planning, Procurement process, resource allocation and ICT) are significant with p value of  $< 0.05$  at 95% confident level. These findings show that the factors studied in this study affect procurement performance at Jimma University Medical Center up to 90 % as indicated by the adjusted R Square.

## 5.2 Recommendations

- In relation to procurement planning to ensure successful implementation of their organizational plan and to achieve their organizational goals and objectives, the study recommends; strengthen the procurement plan through awareness raising forum and preparing short term training program how to prepare procurement planning for pharmaceuticals and developing the culture of monitoring and updating by involving all the stakeholders of procurement plan for pharmaceuticals regularly. Pharmaceutical procurement plan must be fully integrated with the strategic plan and budget since pharmaceuticals represent a large portion of the costs in the healthcare system.
- Having regards to procurement process, to support timely procurement of pharmaceuticals the study recommend that reduces internal red tapes through improving communication and information exchange to contribute efficient procurement practice because of the process involves verification and approval at different levels and this will take time. Procurement regulations that refer to paper documents and processes need to be modernized. Procedures and procurement regulations must recognize by information communication technology.
- The study recommend that the department should strengthen Culture of budget policies that monitor budget spending through Participatory budgeting. The pharmaceutical procurement staffs should be involved in budget preparation while user departments should prepare acquisition plans in advance in Jimma University Medical Center since resource allocation have significant influence on procurement performance.
- The study recommends that Jimma University Medical Center should automate to support procurements of pharmaceuticals, since procurement systems were still largely manual so, they should strengthen Information Communication Technology systems for the purpose of enhancing efficiency, effectiveness and transparency. The Medical Center should also adopt using electronic systems to manage internal operations such as inventory management and control.
- The top management of Medical Center should communicate to stakeholders and identify the challenges and give the direction to solve the problem through discussion and improve access to essential medicines as well as improve health outcomes. Finally it improves efficient pharmaceutical procurement which can be met the five right of purchase, right quality item, right quantity item, from right source, with the right price and delivered at the right time.

### **5.3 Further research**

- This study looked at four independent variables (Procurement planning, Procurement process resource allocation, Information communication Technology) according to the study contribute to large extent in procurement performance at JUMC. Determinants reviewed by this study were internal in nature and did not test external determinants such as market, legal environment, political environment, organizational environment and other environmental factors. To this end therefore a further study should be carried out to establish the external determinants of pharmaceutical procurement performance.
- The study shows 90% of variance or changes in procurement performance at JUMC of Pharmaceutical materials were explained in terms of independent variables so further study should be carried out for the left 10%.

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# APPENDIX I

## QUESTIONNAIRE

### JIMMA UNIVERSITY

#### COLLEGE OF BUSINESS AND ECONOMICS DEPARTMENT OF MANAGEMENT MASTERS OF BUSINESS ADMINISTRATION PROGRAM

**Dear respondents:** I am a post graduate student at Jimma University College of Business and Economics. This questionnaire is designed to gather information for the research entitled “*Determinants of pharmaceutical material procurement performance in Jimma University Medical Center.*” The research is conducted in partial fulfillment of Master of Business Administration (MBA) degree and the information taken from you is used only for academic purpose. Your cooperation is a valuable input for the research findings. So, please provide your genuine opinion.

#### SECTION I: BACKGROUND INFORMATION.

1. Your Administration office/Section/department  
Name \_\_\_\_\_
2. Current position /Staff Category:
  1. Administration office.
  2. Supply chain of pharmaceutical and procurement.
  3. Functional units /Department.
  4. Service delivery units/sections.
3. Sex
  - 1, Male
  2. Female
4. Your age falls in
  1. 20-30 years of age
  2. 31-40 years of age
  3. 41-60 years of age
5. Marital Status
  1. Single
  2. Married
  3. Widowed
  4. Divorced
6. Educational Qualification
  1. Diploma
  2. 1<sup>st</sup> Degree
  3. 2<sup>nd</sup> Degree
  4. PhD and above
7. How long have you been working with in Jimma University Medical Center?
  1. 0-5 Years
  2. 6-10 years
  3. 11-15years
  4. 16 years and above.

Please indicate how much you agree with the following statement concerning procurement Variables and Indicators of Pharmaceuticals in Jimma University Medical Center (**Mark - X**)

S. No	Variables and Indicators	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
1	<b>PROCUREMENT PLAN</b>					
1.1	There is training program how to prepare procurement planning for pharmaceuticals.					
1.2	There is Procurement plan that facilitate procurement activity of pharmaceuticals.					
1.3	Need assessment are properly done prior to procurement of pharmaceuticals.					
1.4	Monitoring and updating of procurement plan for pharmaceuticals is undertaken in regular ways.					
1.5	Stake holders like Service delivery units involved in procurement planning.					
2	<b>PROCUREMENT PROCESS</b>					
2.1	There is Procurement process to support timely procurement of pharmaceuticals					
2.2	There is procurement process to support and identify the right sources for pharmaceuticals					
2.3	There is procurement process to support the right quantity of pharmaceuticals.					
2.4	There is procurement process to support to procure right quality of pharmaceuticals.					
2.5	There is procurement process to support to procure pharmaceuticals with right price.					

Please indicate how much you agree with the following statement concerning procurement  
Variables and Indicators of Pharmaceuticals in Jimma University Medical Center (**Mark -X**)

S. No	Variables and Indicators	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
<b>3</b>	<b>RESOURCE ALLOCATION</b>					
3.1	Allocate enough budgets to supports pharmaceuticals procurement					
3.2	Estimate budget depend on plan set.					
3.3	The department has budget policies that monitor budget spending.					
3.4	The budgets have clear goals and objectives.					
3.5	Budget support procurement of pharmaceuticals right quantity					
<b>4</b>	<b>INFORMATION TECHNOLOGY</b>					
4.1	There are PCs, internet connections, photocopy facilities, printers etc. to support pharmaceuticals procurement					
4.2	Staffs in charge of pharmaceuticals have enough computer literate to support pharmaceuticals procurements					
4.3	There is good level of automation to support procurements of pharmaceuticals					
4.4	There is good level of embracement of electronics procurement to support pharmaceuticals procurement.					
4.5	There is good level of Electronics procurement to support pharmaceuticals procurement					

Please indicate how much you agree with the following statement concerning procurement of Variables and Indicators of Pharmaceuticals in Jimma University Medical Center (**Mark -X**)

S. No	Variables and Indicators	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
<b>5</b>	<b>PERFORMANCE</b>					
5.1	There is Right sourcing of items Purchases					
5.2	There is Right pricing of items Purchases					
5.3	There is Right quantity of items Purchases					
5.4	There is Timely purchases					
5.5	There is Right quality items purchases					

## APPENDIX B

### Part Two: Interview Questions forwarded to supply chain and pharmacy service

#### General Questions

1. What are the fundamental documents guiding your pharmaceutical Procurements?

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2. What are the basic objectives of the pharmaceuticals procurement Function?

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3. What are the steps involved in procurement of pharmaceuticals?

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4. How long a particular purchase would take you on the average?

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5. Can you give reasons for long pharmaceuticals Procurement Process?

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6. Which of the FIVE RIGHT of purchasing [right quality, right quantity, right price, right time and right source] if done wrong would have serious consequences?

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7. Which of the FIVE RIGHT of purchasing [right quality, right quantity, right price right time and right source] if well met would have satisfactory reward?

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8. Do you think the management evaluates your performance based the FIVE RIGHTS [right quality, right quantity, right price, right time and right source] of purchasing?

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9. Which of the complaints [right quality, right quantity, right price, right time and right source] directly attributable to your inefficiency?

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10. Which of the complaints [right quality, right quantity, right price, right time and right source] directly attributable to user's problem?

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11. Which of the complaints [right quality, right quantity, right price, right time and right source] directly attributable to suppliers' problem?

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12. Which of the complaints directly attributable to the purchasing process problem?

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**Thank you for time and Responses!**