



**ADDISABABA UNIVERSITY**  
**SCHOOL OF COMMERCE**  
**DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT**

**FACTORS AFFECTING SUPPLY CHAIN PERFORMANCE OF NON-  
GEVERNMENTAL ORANIZATIONS: THE CASE OF FH ETHIOPIA**

**BY**  
**ALEMTENA FELEKE**

**ADVISOR**  
**MATIWOS ENSERMU (PhD.)**

**A THESIS SUBMITTED TO ADDIS ABEBA UNIVERSITY SCHOOL OF COMMERCE IN  
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF  
ARTS IN LOGISTICS AND SUPPLY CHAIN MANAGEMENT**

**MAY, 2018**  
**ADDIS ABABA, ETHIOPIA**

**ADDISABABA UNIVERSITY**  
**SCHOOL OF COMMERCE**  
**DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT**

**FACTORS THAT AFFECT SUPPLY CHAIN PERFORMANCE OF NON-  
GOVERNMENTAL ORGANIZATION: A CASE OF FH ETHIOPIA**

**BY**  
**ALEMTENA FELEKE GSE/1000/08**

APPROVED BY BOARD OF EXAMINERS

\_\_\_\_\_  
Advisor

\_\_\_\_\_  
Signature & Date

\_\_\_\_\_  
Internal Examiner

\_\_\_\_\_  
Signature & Date

\_\_\_\_\_  
External Examiner

\_\_\_\_\_  
Signature & Date

## **DECLARATION**

I declare that this thesis is the result of my independent research work on the topic entitled ‘Factors that Affect Supply Chain Performance of Non-governmental Organization: The case of FH Ethiopia’ in partial fulfillment of the requirements for the Degree of Master of Art in Logistics and Supply Chain Management at Addis Ababa University School of commerce. It is my original work and all the references used in the study are acknowledged.

Alemtena Feleke \_\_\_\_\_

Name

Signature and Date

## **ACKNOWLEDGEMENTS**

The successful completion of this study was done with the support of the Almighty God whom I owe a great gratitude as I shall continue to remain thankful to Him.

I gratefully acknowledge my advisor, Dr. Matiwos Ensermu(Associate Professor) for his advice, prompt response and feedback in all the ways of doing this paper.

Special Gratitude to Dereje Mulugeta for the support and encouragement that helped me to complete this work.

Finally my appreciation goes to all the respondents who provided information that formed an integral part of this study.

## Table of Contents

|                                                                | Page |
|----------------------------------------------------------------|------|
| ACKNOWLEDGEMENT .....                                          | i    |
| TABLE OF CONTENTS.....                                         | ii   |
| LIST OF TABLES .....                                           | v    |
| LIST OF FIGURES .....                                          | vi   |
| LIST OF ABBREVIATIONS AND ACRONYMS .....                       | vii  |
| ABSTRACT.....                                                  | viii |
| CHAPTER ONE .....                                              | 1    |
| INTRODUCTION .....                                             | 1    |
| 1.1Non-Governmental Organizations .....                        | 1    |
| 1.2 Statetment of the Problem .....                            | 2    |
| 1.3 Basic Research Quetions .....                              | 3    |
| 1.4 General objective:.....                                    | 4    |
| 1.5 Specific Objectives: .....                                 | 4    |
| 1.6 Significance of the study .....                            | 4    |
| 1.7 Scope of the study .....                                   | 4    |
| 1.8 Limitation of the study .....                              | 4    |
| 1.9 Organization of the study .....                            | 5    |
| CHAPTER TWO .....                                              | 6    |
| REVIEW OF THE RELATED LITERATURE .....                         | 6    |
| 2.1 Introduction .....                                         | 6    |
| 2.2.1 Resource Based View.....                                 | 7    |
| 2.2.2 Operational Excellence: Strategic Orientation of SC..... | 7    |
| 2.3 Empirical Review of Review.....                            | 8    |
| 2.4 Summary and Research Gap .....                             | 8    |
| 2.5 SCM in Ethiopia Perspective.....                           | 8    |
| 2.6 Definition and history of Supply Chain Management... ..    | 9    |
| 2.6.1 Humanitarian supply chain management .....               | 10   |

|                                                                 |           |
|-----------------------------------------------------------------|-----------|
| 2.7 SCM Performance .....                                       | 12        |
| 2.8 Performance Measurement.....                                | 13        |
| 2.9 Relief Chain Performance Measurement.....                   | 15        |
| 2.10 Supply chain performance measurements .....                | 16        |
| 2.11 Performance Measurement in Humanitarians Supply Chain..... | 19        |
| <b>Factors Affecting Supply Chain Management.....</b>           | <b>21</b> |
| 2.12.1 Environmental uncertainty .....                          | 22        |
| 2.12.2 Company environment .....                                | 22        |
| 2.12.3 Government support.....                                  | 23        |
| 2.12.4 Information technology .....                             | 23        |
| 2.12.5 Supply chain relationships .....                         | 23        |
| 2.12.6 Relationships with suppliers .....                       | 24        |
| 2.12.7 Flexibility .....                                        | 24        |
| 2.12.8 Quality.....                                             | 24        |
| 2.12.9 Supplier performance.....                                | 25        |
| 2.13 conceptual frame work.....                                 | 25        |
| CHAPTER THREE .....                                             | 27        |
| RESEARCH METHODOLOGY.....                                       | 27        |
| 3.1. Introduction .....                                         | 27        |
| 3.2. Study Area.....                                            | 27        |
| 3.3 Research Design.....                                        | 27        |
| 3.4. Population and Sampling Design .....                       | 28        |
| 3.4.1. Target Population .....                                  | 28        |
| 3.4.2 Sample Design.....                                        | 28        |
| 3.4.3 Sampling Frame.....                                       | 28        |
| 3.4.4 Sampling Technique .....                                  | 28        |
| 3.4.5 Sample Size .....                                         | 29        |
| 3.4.6 Data Collection procedure .....                           | 29        |
| 3.5 Ethical consideration .....                                 | 29        |
| 3.6 Data Analysis Technique .....                               | 30        |

|                                                                              |    |
|------------------------------------------------------------------------------|----|
| 3.7 Summary of the Chapter .....                                             | 30 |
| CHAPTER FOUR.....                                                            | 31 |
| RESULTS AND FINDINGS .....                                                   | 31 |
| 4.1 Introduction .....                                                       | 31 |
| 4.2 Response rate.....                                                       | 31 |
| 4.3 Demographic Characteristics .....                                        | 32 |
| 4.3.1 Gender .....                                                           | 32 |
| 4.3.2 Education level of respondents.....                                    | 32 |
| 4.3.3 Year of service.....                                                   | 32 |
| 4.4 Factors affecting supply chain performance of FH-Ethiopia .....          | 33 |
| 4.5 Factors Affecting SC Performance .....                                   | 34 |
| 4.5.1 Procurement activity variables affecting supply chain performance..... | 34 |
| 4.5.2 Supplier Selection practice .....                                      | 35 |
| 4.5.3 Internal Policy and Procedure.....                                     | 37 |
| 4.5.4 External Environment.....                                              | 38 |
| 4.6 Summary of Major Findings .....                                          | 39 |
| CHAPTER FIVE .....                                                           | 40 |
| SUMMARY, CONCLUSION AND RECOMMENDATIONS .....                                | 40 |
| 5.1 Introduction .....                                                       | 40 |
| 5.2 Summary of Findings .....                                                | 40 |
| 5.3 Conclusion of the Findings .....                                         | 42 |
| 5.4 Recommendation.....                                                      | 42 |
| 5.6 Area for Further Study .....                                             | 43 |
| REFERENCES .....                                                             | 44 |
| APPENDICES .....                                                             | 52 |

## **LIST OF TABLES**

|                                                           |    |
|-----------------------------------------------------------|----|
| Table 4.1 Gender of Respondants.....                      | 32 |
| Table 4.2 Education Level of Respondents .....            | 32 |
| Table 4.3 Year of Service.....                            | 33 |
| Table 4.4 Factors Affecting Supply Chain Performance..... | 33 |
| Table 4.5 Procurement Activity Variables.....             | 34 |
| Table 4.6 Supplier Selection Practice of FH Ethiopia..... | 36 |
| Table 4.7 Internal Policy and Procedure Factors.....      | 37 |
| Table 4.8 External Environment Factors.....               | 38 |



## LIST OF FIGURES

|                                       |    |
|---------------------------------------|----|
| Figure 2.1 Conceptual Frame Work----- | 26 |
| Figure 4.2 Response Rate-----         | 31 |

## **LIST OF ABBREVIATIONS AND ACRONYMS**

|             |                                      |
|-------------|--------------------------------------|
| FH Ethiopia | Food for the Hungry Ethiopia         |
| HSC         | Humanitarian Supply Chain            |
| HSCM        | Humanitarian Supply Chain Management |
| NGO         | Non-Governmental Organization        |
| SC          | Supply Chain                         |
| SCM         | Supply Chain Management              |
| SCP         | Supply Chain Performance             |
| Std. dev.   | Standard Deviation                   |

## Abstract

Supply chain performance had been a significant area of attraction for researchers. However, studies have established the factors affecting supply chain performance in manufacturing and commercial organizations whose focus is to deliver value to customers in order to make a profit.

*These seem to be there is a gap and known little on factors that affect NGOs' supply chain performance which need to be assessed and due to varying contexts the findings of such studies may not necessarily apply in humanitarian SC.*

*This study therefore undertook the goal to establish factors affecting the performance of supply chain performance of non-governmental organization in the case of FH Ethiopia.*

*The specific objectives of the study included, the analysis of how procurement activities influence the performance of the organizations supply chain, examine how supplier selection practice in the organization affect SC performance, examine how internal policy and procedure of the organization affects supply chain performance and illustrate how listed external environment affects the performance of supply chain in FH Ethiopia.*

*The study adopted descriptive survey research design and qualitative data targeting seventy one employees from FH Ethiopia. From seventy one issued questionnaires, 59 questionnaires representing 83.1% of the total questionnaires distributed were returned fully completed, while 12 questionnaires were not returned representing 16.9% of the total questions distributed to the respondents. According to Mugenda and Mugenda (2003) a response rate of 70% and over is excellent for analysis and reporting on the opinion of the entire population. Primary data was collected using a questionnaire. Once the data was collected, the researcher checked for its accuracy, consistency and completeness. The data was presented in frequency tables and percentages and discussed.*

*Data was analyzed using descriptive statistics i.e. Frequencies, percentages, means and standard deviations were presented in the form of both tables and figures. The SPSS version 20 computer software was used to aid the analysis.*

*The finding of study shows those inefficient procurement activities, absence of training and development, absence of quality culture and the stated external environment affects and have negative impact on the organizations supply chain performance.*

*The study findings value to the organization to provide information on those factors affecting supply chain performance based on the result of this study, it can also use as reference for future researchers who will be interested to study the topic and it will contribute filling the knowledge gaps in the area.*

**Key Words:** Supply Chain performance, supplier selection practices, internal policy, external environment.

# **CHAPTER ONE**

## **INTRODUCTION**

Supply chain performance is the ability to deliver quality products and Services in precise quantities and at precise times with the aim to minimize total cost of the products and services to the ultimate customers of the supply chain (Green and Inman 2005).

Although organizational managers are ultimately held accountable for organizational performance; organizational success first depends upon the performance of the supply chains in which the organization functions as partner. Supply chain performance is optimized only when an “inter- organizational, Inter-functional strategic approach is adopted by all partners operating within the supply chain (Chopra and Meindl,2004).Supply Chain in NGO context is the network created through the flow of services, supplies, information and finances between donors, beneficiaries, suppliers and different units of humanitarian organizations, in order to provide physical aid to beneficiaries.

Effective supply chain management (SCM) has become a potentially valuable way of improving organizational performance. It requires close integration of internal operational within corporate and efficient relationships with the external functions of members in the Supply Chain (Hau and Billington, 2000).

### **1.1 Non-Governmental Organizations**

Non-Governmental organizations include groups and institutions that are largely independent of Government that have primarily humanitarian and cooperative objective than profit-making objective. In other words, any institution, organization or agency that is established voluntarily to pursue altruistic goals, without a profit motive and is based largely outside the control of the government structure is roughly described as NGO (Stoddard, 2006). They are private agencies; indigenous groups organized regionally or nationally; and member-groups in villages that support development. NGOs include charitable associations, trusts and foundations, independent cooperatives, community associations, societies, trade associations, professional societies, consumer groups, and faith associations that mobilize

private funds for development, distribution of food and family planning services and the promotion of community organization.

## **1.2 Statement of the problem**

Currently, Supply chain management becomes a vital entity to organizations' performance measurement and metrics, and has received much attention from researchers and practitioners. For decades, supply chain performance had been a significant area of attraction for researchers. However, studies have established the factors affecting supply chain performance in manufacturing and commercial organizations whose focus is to deliver value to customers in order to make a profit (Reichhart & Holweg, 2007). The focus on the industrial supply chain is the final customer, who is the input source of funds for the entire chain. On the other hand, in NGOs supply chain system, the end user rarely participates in a business transaction, having little control over supplies. The humanitarian supply chain bases its focus on providing relief aid in the forms of food, water, medicine, shelter, and supplies to areas affected.

As Benita notes "The majority of existing supply chain research focuses on managing or improving the profit-making supply of goods and services. The humanitarian relief supply process is an important domain for supply chain management that has received little attention." (Beamon, 2004)

Despite this, little is known about supply chain performance and associated factors as most studies remained focused on commercial sector with intentions of improving efficiency and profit making. These seem to be there is a gap and known little on factors that affect NGOs' supply chain performance which need to be assessed and due to varying contexts the findings of such studies may not necessarily apply in humanitarian SC.

This study therefore undertook the goal to establish the factors that affected the performance of supply chain performance of non-governmental organization a case of FH Ethiopia.

In order to understand how a supply chain works, it is important to identify the factors affecting supply chain management.

From the information gathered from the logistics manager, operations director and direct observations the organization experienced procurement delays; absence of requested materials and services in the market plus sometimes there happen quality problems on the

purchased items and services that delivered to the organization. Based on the stated literature gap and the information gathered, this study tried to assess and find factors those deters and affects supply chain performance of the organization guided by the research questions.

It is clear that execution of supply chain management has an impact on the outcome of donor funded projects in NGO. The question still remains as to which specific factors affect the performance of the supply chain management that have the greatest effect. Though some studies (Henry Quesada.et.al 2012) shows and point out different factors affecting SCP of manufacturing and industrial sector as stated before, in this research paper the main focus will be what are factors that affect supply chain performance in non-governmental organization particularly the selected organization (FH Ethiopia).

To address this question, the study focused on the impact of procurement activities, supplier selection procedure, internal policy and procedure of the organizations' supply chain process and external environment related to supply chain process. I believe weaknesses observed on selected areas are major parts of supply chain and thus affects the performance of the whole supply chain management.

Therefore, the problem that initiated the researcher to conduct this study was the information gap about the factors affecting Supply Chain Management in the NGO which makes this study researchable.

### **1.3 Basic Research Questions**

The basic research questions to be addressed in the study are:

- How is supply chain performance of FH Ethiopia influenced by procurement activities?
- How is a supplier selection practice affecting the supply chain performance of the organization?
- How does internal policy affect the performance of supply chain management?
- What are external environment affect performances of supply chain?

## **1.4 General objective**

The general objective of the study is to assess factors that affect supply chain performance on the selected organization.

## **1.5 Specific Objectives:**

1. To analyze how procurement activities influence the performance of the organizations supply chain.
2. To examine how supplier selection practice in the organization affect SC performance
3. To examine how internal policy and procedure of the organization affects supply chain management performance
4. To illustrate how external environment affects the performance of supply chain in FH Ethiopia

## **1.6 Significance of the study**

The result of this study will give an insight to any individual who has interest on factors affecting Supply Chain performance of non-governmental organizations in Ethiopia , In addition, it will show and provide information on those factors that affect supply chain performance of the selected organization based on the result of this study, It can also be use as reference for future researchers who will be interested to study the topic and it will contribute filling the knowledge gaps which is known little about factors affecting supply chain performance of NGOs.

Finally this study is for the researcher, one of the fulfillments to get masters of Art degree in Logistics and Supply Chain Management.

## **1.7 Scope of the study**

This research work is limited to FH Ethiopia Supply Chain management Performance, and it doesn't go beyond and address all the issues related to supply chain performance in NGOs in Ethiopia due to time constraints.

## **1.8 Limitation of the study**

The major limitation of this study is the emphasis will be given only to discover SCM performance affecting factors of selected NGO related to raise question and focused only on limited supply chain performance variables mentioned above plus the findings might be limited by the sample size of the participants involved.

### **1.9 Organization of the study**

This study is organized into five chapters, Chapter one contains background of the study, statement of the problem, basic research questions, objective of the study, definition of terms, significance of the study, scope of the study and limitation of the study.

The second chapter deals with the literatures relevant to the study and conceptual frame work adapted from previous studies. Under the third chapter, the type and design of the research, the subjects/participants of the study, the sources of data, the data collection tools, the procedures of data collection, and the methods of data analysis used are described. Chapter four summarizes the results/findings of the study and interprets and/or discusses the findings. Finally chapter five comprises four sections, which includes summary of findings, conclusions, recommendations and suggestions for future study.



## **CHAPTER TWO**

### **REVIEW OF THE RELATED LITERATURE**

#### **2.1 Introduction**

This chapter explores existing related literature about SCM practice, SCM in humanitarian and business context and different factors that have been associated with NGOs supply chain performance in different contexts and situations. The study will therefore examine different factors that affect the performance of supply chain of the selected NGO by collecting and analyzing data.

#### **2.2 Theoretical perspective of Supply Chain Management**

The concept of Supply Chain Management is inevitable for efficient resource utilization in the modern organization. Chopra et al. (2010) portend that supply chain management represent the confluence of at least three main streams of knowledge and practical experience of the business world spanning almost 60 years. The fusion of these streams into one powerful movement, supply chain management, that is sweeping across the present day individual world has brought about by intense competition characteristic of the contemporary markets. They identify three disciplines in supply chain management as: (a) sourcing, procurement and supply management; (b) materials management; and (c) logistics and distribution.

It is apparent that much of the focus in the increasingly voluminous literature on supply strategy, operations strategy and supply chain management is directed at meaning making. Often this comprises assertions about what it essentially “is”. The precepts of SCM as currently portrayed are a mixture of three elements: description, prescription and the identification of alleged trends. Description Debates here relate to scope and focus. Some academics openly declare that they use the terms supply chain management and purchasing “synonymously” (Lysons & Farrington, 2006). Giunipero, Handfield, Monczka, & Petterson (2009) hold that supply chain management endorses a supply chain orientation and involves proactively managing the two-way movement and coordination of goods, services, information, and funds (i.e, the various flows) from raw material through end user. The study looks at Supply Chain Management in two perspectives

including: resource-based view and operational excellence. The perspectives are discussed as follows:

### **2.2.1 Resource-Based View**

Supply Chain Management (SCM) is an essential element to operational efficiency. SCM can be applied to customer satisfaction and organization's success including NGOs. SCM impacts on effective resource utilization and realization of organization goals and objectives. Supply chain management helps streamline everything from day-to-day product flows to unexpected natural disasters. With the tools and techniques that SCM offers, you'll have the ability to properly diagnose problems, work around disruptions and determine how to efficiently move products to those in a crisis situation. NGOs require properly instituted SCM with minimal bottlenecks. Proponents of Resource-based view see SCM as a basis for the competitive advantage of a firm, lying primarily in the application of a bundle of valuable tangible or intangible resources at the firm's disposal (Mwailu & Mercer, 1983 p142, According to Barney (1991) SCM effectively translates into valuable resources that are neither perfectly imitable nor substitutable without great effort. A broken supply chain can cripple the NGOs system and undermine positive outcomes. Most problems stem either from uncertainties or inability to coordinate several activities and partners.

### **2.2.2 Operational Excellence: Strategic orientation of SCM**

Organizations strive to improve performance resulting in eliminating waste by improving cost efficiency, quality and reliability and compliance safety. As Wright, Jones & Hoyle (2009) portend, there is need for organizations to identify process inefficiencies by such tools as value streaming maps or calculating process capability. Operational excellence is banked on organization's ability to deliver unique, differentiated and outstanding values to their customers. Operational Excellence in Supply Chain Management implies excellence within each of the individual processes and in the way the supply chain operates as a whole. Customers expect high levels of quality, cost and service in all of their interactions that may be achieved through efficient supply chains. Supply chain processes should work together, with seamless information flow and smooth material handoffs ensuring that another group should not be the cause of a late delivery and lose credibility for the entire supply chain (ARC Advisory group, 2002). Many firms have reduced their supply base so that they more effectively manage relationships with

strategic suppliers Tully (1995). Mason (2009) indicates that buying firms are developing a mutually beneficial relationship with suppliers and viewing suppliers as virtual extensions of their firm.

### **2.3 Empirical Review of literature**

There have been studies which have been conducted on factors affecting supply chain performance. According to Mwirigi, N. D & Were, S (2014) Human Resource Capacity, training and development affects supply chain management performance. Information sharing, contract management systems and Supplier relationship (Supplier selection process) with the organization affect supply chain management performance. Ngoto, A. N. & Kagiri, A. (2016). A study by Mulwa (2010) revealed that the use of poor supplier appraisal methods and application of ineffective supplier selection process discourages implementation of effective procurement practices and affect the performance of supply chain. The study conducted by Li (2002), and Quesada and Meneses (2010) revealed that Environmental uncertainty, Company environment, Government support, Uncertainty aspects, Information technology, Communication tools, Supply chain relationships, Flexibility and Quality affects supply chain performance of the organization.

### **2.4 Summary and Research Gap**

The theoretical and the empirical literature demonstrate that, the existing literature on factors affecting SC performance is not extensive in Ethiopia and NGOs. Most studies on factors affecting SC performance are common in other countries such as Kenya. The studies done failed to explain how these factors affect the supply chain performance of NGOs in Ethiopia. Many of the above factors can support the practices in business and profit making firms. This indicates that, there lacks a specific study that clearly identifies the factors affecting supply chain performance in Non-governmental organizations in Ethiopia.

### **2.5 Supply Chain Management in Ethiopian Perspective**

SCM practices and challenges in different industry of Ethiopia were studied in different dissertations. The results of different researches in the SCM performance in different commercial and non-commercial sectors of Ethiopia are concluded as poor. Admaw (2010) studied the practice of SCM for Ethiopian textile firms. It was found that, SCM practices in Ethiopian textile firms are weak and not considering SCM as a strategic tool for competition. Business managers of the textile firms didn't give attention for SCM theories and practices. Also Dereje, (2012) studied the impact of SCM practices on the

organizational performances in metal and engineering industries. The result of the study shows that the implementation of SCM in this industry is weak. Also the SCM practices don't have any relationship with organizational performances except internal lean practices. These shows there is gap on factors that affect NGOs' supply chain performance which need to be assessed and due to varying contexts the findings of such studies may not necessarily apply in NGOs.

## **2.6 Definition and History of Supply Chain Management**

**Justifications:** The researcher decided to explain the definition and supply chain management before the main topic which is "factors affecting supply chain performance" was to clarify and recognize how and when SC was become a concern for scholars.

Supply Chain Management as a concept has been widely accredited to a Booz Allen consultant named Keith Oliver who in 1982 defined the concept as follows: "Supply chain management (SCM) is the process of planning, implementing, and controlling the operations of the supply chain with the purpose to satisfy customer requirements as efficiently as possible. Supply chain management spans all movement and storage of raw materials, work-in-process inventory, and finished goods from point-of-origin to point-of-consumption".

A supply chain (SC) is a network of organizations to perform a variety of processes and activities to generate value in the form of products and services to end consumers (Christopher, 1992). Alternatively, a supply chain is a network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the end customer (Christopher, 1998). As well the "network of facilities and activities that performs the functions of product development, procurement of material from suppliers, the movement of materials between facilities, the manufacturing of products, the distribution of finished goods to customers, and after-market support for sustainment".

As the business arena takes a paradigm shift, we are now seeing improvements in supply chain performance where firms are focusing on the overall firm's supply chain performance other than individual company supply chain performance. Competition has necessitated organizations to improve on their service delivery, customer satisfaction, forecasting demand and ensuring that response time is efficient.

The original company boundaries have been broken and the level play ground is the same where functional groups now play a central role in advancing supply chain performance (Hausman, 2013).

Supply chain management efficiency and effectiveness has profound implications on any organization's ability to meet its customer's demands, its reputation, and its overall financial success (Ambe, 2009). Supply chain management inefficiency presents the single biggest opportunity for operational inefficiencies in any organization Feldman (2003).

### **2.6.1 Humanitarian Supply Chain Management**

The humanitarian supply chain management (HSCM) involves managing the different interrelated factors important for the effectiveness of the humanitarian operation system such as goods and materials, information, manpower, political authorities, available infrastructure and etc. to reduce the impact of a disaster for the people who are affected.( Torre et al (2011) In the same document they underlined the fact that the HSCM and the commercial supply-chain management are different in their motives and the realms at which they operate. While the driving force behind commercial supply chain management is basically profit maximization, efficiency and business long term growth that of HSCM is mainly reducing human suffering and rehabilitation of disaster affecting people in timely manner. As a result disaster relief operations requires the activities in many dimensions, such as, rescue efforts, health and medical assistance, food, shelter and long-term relief activities in coordinated and effective manner. The humanitarian supply chain (HSC) network is very similar to business supply chain network but the objective and parameters to measure HSC network performance are different (Kovacs & Spens, 2007). A business supply chain network aims to maximize supply chain surplus, whereas a HSC network aims to provide maximum relief to the victims of an undesirable and unpredictable event (Petti & Beresford, 2006; Trunick, 2005). The real challenge of any HSC network is heavily purposed and human life driven. However, the complexity of the network depends upon the nature of materials that is needed to be supplied to disaster-hit areas, which is almost uncertain from both the demand and supply end. In humanitarian aid activities, delays in delivery or relief can cost lives.

Humanitarian Supply Chain Management is referred to as the process of effective and cost-efficient plans, implementations and controls for aid flows (i.e., materials, goods, services, financial resources, information, etc.) from the point of origin to the point of consumption with

the intention of meeting the aid recipients' requirements (Thomas and Kopczak, 2005 ; Day et al., 2012; etc.).

When comparing humanitarian supply chains to supply chains in the commercial field, there are striking differences in terms of strategic goals, customer characteristics as well as demand characteristics and order fulfillment:

(1) Strategic goals: While the strategic goal of the commercial supply chain is to produce high quality goods at low cost in order to maximize profitability, to deliver financial returns to shareholders and to satisfy customer demands, the strategic goal of humanitarian supply chains is to minimize the loss of lives and to alleviate the suffering of vulnerable people given financial constraints (Beamon and Balcik 2008, 10;) Hence, the resulting consequences from delays in the supply chain are “only” a matter of reduced profitability and thus dissatisfaction of shareholders and customers in the commercial environment whereas it is often a matter of life or death in the humanitarian field, especially with regard to disaster relief (Beamon and Balcik 2008, 10). Furthermore, setting and prioritizing goals in the humanitarian context is complicated by the high number of stakeholders involved (e.g. donors, beneficiaries, media) who all have different and possibly conflicting concerns and demands (McLachlin, Larson and Khan 2009, 1050; Beamon and Balcik 2008, 11). Especially donors can have a high influence on goal-setting through earmarking their donations for a certain disaster or with respect to certain regions and usage.

As the focus of their donations is usually on particular operations or projects activities (e.g. specific relief efforts), the organizational infrastructure of aid agencies (e.g. information systems and techniques for inventory control and distribution) is often lacking behind (Beamon and Balcik 2008).

(2) Customer characteristics: While there is only one type of customer in the commercial supply chain (those individuals that buy and receive a product or service), there are two types of customers in the humanitarian supply chain that greatly differ from each other.

The primary customers of humanitarian organizations are the beneficiaries (those individuals that receive aid). However, donors are also increasingly being considered as customers in the humanitarian context as aid agencies provide them with the service of delivering aid to aid recipients. Especially the beneficiaries differ considerably from customers in the commercial field as they neither have the luxury of market choice nor do they have any formal contract specifying their entitlements

(3) Demand characteristics and order fulfillment: While there is a predictable demand and a predetermined set of suppliers in commercial supply chains, humanitarian supply chains are often characterized by irregular demand and variability in supplies and suppliers.

Furthermore, whereas customers in the commercial sector may accept long lead times, the time between the moment a demand occurs and the point supplies are needed in sudden-onset disaster situations is usually close to zero (Beamon and Balcik 2008, 12).

Supply Chain when applied to humanitarian action, the supply chain needs to be flexible and able to respond quickly to unpredictable events effectively and efficiently budget constraints.

Flexibility can be rightly regarded as a critical one.

Supply Chain Management as a management philosophy takes a system approach to viewing the Supply Chain as a single entity. This means that the partnership concept is extended in to a multi-firm effort to manage the flow of goods from suppliers to the ultimate customer. Each firm in a Supply Chain directly or indirectly affects the performance of other Supply Chain members, as well as the overall performance of the Supply Chain (Cooper et al. 1997).

## **2.7 SCM Performance**

SCM performance is defined as the operational excellence to deliver leading customer experience (Simchi-Levi et al., 2003) and Supply Chain Performance refers to the extent to which a supply chain meets end-customer requirements, and contains operational efficiencies which can deliver that performance. This definition implies that supply chain performance measures effectiveness and efficiency by how well these two goals are met. Different studies conducted under SCM, measured supply chain performance by four dimensions: (1) Time-based performance indicates the extent to which a supply chain is improving in speed and responsiveness, (2) Reliability defines the extent to which a supply chain is performing promised activities and services dependably and accurately, (3) Supplier performance measures the overall suppliers' tangible and intangible outcomes including product quality, reliable services and dependable relationship and (4) Cost performance refers to the effectiveness in managing costs associated with operating the supply chain. Each of these four aspects captures the effectiveness and efficiency of a supply chain and reflects the inter-organizational characteristics of supply chain performance.

Stevens (2001) states that to build up an integrated supply chain requires the management of material flow from three perspectives: strategic, tactical, and operational.

From these perspectives, the use of systems, facilities, and people must be seen as a whole and work in a coordinated manner. He also mentions that a company can measure the supply chain performance by inventory level, service level, throughput efficiency, supplier performance, and cost. Logistics play an important role in pursuing supply chain excellence which will lead to improved business performance and defined as the responsibility to design and administer systems to control movement and geographical positioning of raw materials, work-in process, and finished inventories at the lowest total cost (Bowersox et al., 2007). The research of Autry, Zacharia and Lamb (2008) establish that logistics must be focused on the coordination and collaboration of activities, logistics social responsibility, strategic distribution planning, and technology and information systems. Supply Chain Management aims to link all the supply chain agents to jointly cooperate within the firm as a way to maximize productivity in the supply chain and deliver the most benefits to all related parties. Adoption of Supply chain management practices in industries has steadily increased since the 1980s.

Over the past decade, the traditional purchasing and logistics activities have emerged and shifted into broader strategic approach to materials and distributions management known as supply chain management. It is currently a major issue as organizations realize the substance of developing an integrated connection with their suppliers and final users. The performance of a firm depends not only on how efficiently it cooperates with its direct partners, but also on how well these partners cooperate with their own business partners.

Here, the firm's continuous interaction with other players becomes an important factor in the development of new resources. Relationships combine the resources of two organizations to achieve more advantages than through individual efforts.

## **2.8 Performance Measurement**

Neely et al. (1995) define a performance measure as a metric used to quantify the effectiveness and efficiency of an action. Effectiveness is defined as the extent which customer requirements are met, while the efficiency is the measure of how economically the resources are utilized when providing a given level of effectiveness. He examines performance measurement on three levels: individual performance metrics, sets of performance metrics (the performance measurement system) and the relationship between the performance measurement system and its environment. Performance measurement frameworks and systems are often used interchangeably in the literature.



Rouse and Putterill(2003) clarify this by stating that performance measurement frameworks assist in performance measurement system development by clarifying boundaries, specifying dimensions and providing initial intuition into relationships among the dimensions. That is, performance measurement frameworks are not systems, but they form a basis for developing performance measurement systems.

Folan and Browne(2005) classify performance measurement frameworks as structural frameworks (i.e. frameworks specifying a typology for performance measure management; e.g. Balanced Scorecard by Kaplan and Norton (1992)) and procedural frameworks i.e. a step-by-step process for developing performance metrics from strategy. According to Beamon (1999),the difficulty in creating a general approach is that the different types of systems require specific measurement system characteristics.

Although there is an increasing interest in performance measurement of nonprofit organizations, fewer attempts have been made to provide these organizations with a performance measurement framework. Some examples are as follows: Buckmaster(1999), develops a performance measurement framework with a focus on measuring program outcomes for nonprofit organizations. Kaplan (2001) describes an implementation of the Balanced Scorecard approach to several nonprofit organizations.Sawhill and Williamson (2001) develops a performance measurement framework for a nonprofit organization (The Nature Conservancy). The proposed performance measurement framework assesses organizational performance in three areas: impact, activity, and capacity. Sowa et al. (2004) present a measurement framework to assess organizational performance for nonprofits. The authors' model captures two dimensions of effectiveness: management effectiveness and program effectiveness.

Zimmermann and Stevens (2006) provide an exploratory study that gives examples of performance measurement used in nonprofit organizations. Supply chain performance measurement Schmitz and Platts (2004) and Folan and Browne (2005) classify performance measurement as intra- and inter-organizational and note that inter-organizational performance management (e.g. supply chain performance measurement) is relatively neglected but a growing area in the literature. Beamon (1998, 1999) provides a literature review of performance metrics used in supply chains and he observes that performance measurement in commercial supply chains focuses primarily on cost and customer responsiveness. However, many types of costs are not quantifiable, and many other types of metrics are not easily or appropriately converted into

costs. Based on system complexity, the author argues that a performance measurement system (rather than a single metric) is required in order to meet the characteristics of effective performance measurement. Beamon(1999)develops the following three-part framework for performance measurement consisting of resource metrics, output metrics, and flexibility metrics:

(1) Resource performance metrics measure the level of resources used to meet the system's objectives. Resources are generally measured in terms of the minimum requirements (quantity) or a composite efficiency metric (resource utilization), and are explicitly tied to flexibility and (usually) output. Examples of resource performance metrics include the number of person-hours required for an activity, inventory holding costs, and heating and air conditioning costs.

(2) Output performance metrics measure the effectiveness with which supply chains are able to supply. Ideally, output performance metrics correspond to an organization's strategic goals and to its customers' goals and values. Examples of output metrics include sales (dollars or units), percent on-time deliveries, and customer responsiveness, manufacturing lead time, number of back-orders or stock-outs per cycle, quality, and the quantity of final product produced.

(3) Flexibility metrics, as applied to supply chain analysis, describe the range of possible operating conditions that are profitably achievable by the chain.

There are other performance measurement frameworks in the literature developed for the supply chain or its specific components, such as transport logistics and supplier performance.

## **2.9 Relief chain performance measurement**

Poister (2003) explains why performance measurement is vital in the nonprofit sector: "Effective performance measurement systems can help nonprofit managers make better decisions, improve performance, and provide accountability. Moreover, when they are designed and implemented effectively, performance measures provide feedback on agency performance, and motivate managers and employees to work harder and smarter to improve performance. They can also help allocate resources more effectively, evaluate the efficacy of alternative approaches, and gain greater control over operations, even while allowing increased flexibility at the operating level".

Performance metrics and measurement systems have not been developed and systematically implemented in the relief sector. However, NGOs are becoming increasingly aware of the significance and urgency of performance measurement, particularly due to increasing competition in the sector for scarce resources and increasingly high demands from donors and the public to improve visibility and accountability. Nevertheless, the inherent and unique

characteristics of the disaster relief environment bring significant challenges to selecting appropriate performance metrics and developing measurement systems. Particularly due to the difficulties associated with measuring program outcomes and impacts in humanitarian relief, NGOs tend to measure performance focusing on inputs rather than outputs. This is common in the nonprofit sector. As observed by Kaplan (2001) and Henderson et al. (2002), nonprofits are accustomed to reporting input metrics such as the financial (e.g. donations, expenditures, and operating expense ratios) and non-financial (e.g. hours spent) resources dedicated to specific programs. Similarly, high-performance relief programs are also commonly associated with inputs, more specifically donations, which lead to providing more aid to beneficiaries. However, as emphasized by Kanter and Summers (1987), although the success of nonprofits relies, in part, on resource attraction, the performance criteria for resource allocation might be unrelated to the criteria for resource attraction. Increasing revenues or donations does not necessarily increase the quality of services or the capacity of the organization to deliver (Letts et al., 1999). Financial considerations can play an enabling or constraining role but will rarely be the primary objective, and success for nonprofits should be measured by how effectively and efficiently they meet the needs of their constituencies (Kaplan, 2001).

### **2.10 Supply chain performance measurements**

The main things for performance measurement is to collect and analyze data to evaluate work done and results achieved in supply chain systems, there are many ways of measuring supply chain performance and the way of quantifying the efficiency and effectiveness of systems, indicators of how well the thing is being done, evaluation of products to meet customer requirements, evaluate the performance and comparativeness of supply chain systems as a whole. Supply chain performance measurement tools have an important role to setting objectives, evaluating the situations and determining future way of actions. Performance measurement is critical to the success of any organization because it creates understanding, molds behavior and improves competitiveness. According to Chan (2003), performance measurement describes the feedback or information on activities with respect to meeting customer expectations and strategic objectives. It reflects the need for improvement in areas with unsatisfactory performance. Thus efficiency and quality can be improved.

Supply chain performance is the ability and capability of process, standardize, reasons, deliver product and services within customer expectations in terms of time, quality, cost, and supporting metrics.

The sets of supply chain metrics used to quantify both the efficiency and effectiveness of firm is measured by performance measurement. A performance measurement system offers to link strategic planning and operational control of an organizations, provides to the necessary information to the monitor, control, evaluation, and feedback function on operations management. Although some supply chain performance measurement tools are commonly used for measuring supply chain performance includes the balanced scorecard,(BSC), the supply chain operations reference(SCOR) model, the logistics scorecard(LSC), economic value added (EVA), total quality management(TQM), and activity-based costing(ABC).

Studies by Kwamega and Mooraj et al, shows that each performance measurement tools have their own advantage and limitations, interims to the content wise, the concern to measure, and contributes the strategic improvements of supply chain firms. For example Kwamega, et al. founds that application and implantation of the total quality management (TQM) have significant impact on Small and medium enterprises (SME's) performance and performance measurement. Sim et al. shows that BSC have impacts on linked their corporate goals and objectives to their performance measurement systems and can be used as a tool for monitoring the long-term value creation process in business process. In addition Khaddafi, et al., Ray studies shows that the company's financial performance interims of active project found, return on capital or economic value addition of an organization, and the economic efficiency is measured by economic value added(EVA).

Most company use traditional performance systems and traditional performance measures only considered minimal set of metrics that is adapted to a supply chain might include. However, within small amount of matrices and traditional performance systems, it is difficult and impossible to evaluate the entire situation of the firms. For example in most of the times financial metrics are related to cost and related issue. This cost and related issue is shows how the companies assured firm profitability, secede in profit rather than others concerns (quality, sustainability, flexibility, time, resource utilization. etc.)

Since, the most significant criticism of the traditional performance measurements is the fact that they focus on financial performance measures. But, traditional performance measurement

systems have been criticized as being too narrowly focused on financial figures and functional level performance such that they often fail to capture organizational long-term business success. Also, skills and competencies companies are trying found proper performance measurement systems rather than traditional. Because, this traditional financial performance measure systems worked well for the industrial era but not competencies firms.

Despite its importance, supply chain performance often was measured in oversimplified and sometimes counterproductive (cost-reduction-based) terms. Lack of an appropriate performance measurement system has been cited as a major obstacle to effective supply chain management (Lee, H. L., Billington,) traditionally, companies have tracked performance based largely on financial accounting principles. Financial accounting measures are certainly important in assessing whether or not operational changes are improving the financial health of an enterprise, but insufficient to measure supply chain performance for the following reasons (Lappide,L.2002) The measures tend to be historically oriented and not focused on providing a forward-looking perspective, the measures do not relate to important strategic non-financial performance, the measures do not directly tie to operational effectiveness and efficiency and most performance measurement systems are functionally focused.

Until few years ago, there were several reasons why most companies did not implement supply chain performance measurement systems (Gintic.2002) these are: (1)No clear established approach or set of measures was available (2)Software vendor products offered only a limited range of supply chain metrics and (3) Companies were too busy with other more important initiatives.

The traditional approaches to monitoring performance had been metrics projects and balanced scorecards. In metrics projects, functional organizations and workgroups established and tracked metrics that were considered most relevant for measuring performance. Unfortunately, there were a number of limitations with metrics projects, by focusing on functional metrics, they ended up driving locally optimized silo behavior at the expense of the overall company, it was time consuming to compile and analyze information, so visibility often came too late to make a difference. In addition, they only provided information on limited history, not insight into the future, metric tracking was manual, so numbers were often calculated incorrectly or inconsistently over time and finally many times, workers didn't know what to do with the data. It wasn't always clear what constituted poor performance, when to act, or how to act.

Even though various performance measurement frameworks and indicators exist for traditional supply chains, the distinct characteristics of the humanitarian environment cause many of these to be inappropriate or irrelevant (Beamon and Kotleba 2006). However, performance measurement frameworks from the commercial sector are a useful starting point for the non-profit sector, and thus for the humanitarian organizations (Moxham 2009).

### **2.11 Performance Measurement in Humanitarian SC**

Historically, performance measurement systems in the commercial sector have been financial (Kaplan and Norton 1996). However, these financial models failed to signal changes in the companies' economic value as they were making substantial investments in intangible assets (Kaplan 2001) and thus gave misleading signals for continuous improvement and innovation (Kaplan and Norton 1992). For this reason, Robert Kaplan and David Norton developed the Balanced Scorecard model in the late 1980s and early 1990s. This performance measurement framework provides executives with a comprehensive and transparent overview of the vision and strategy of their organization from four different perspectives: financial, customer, internal business process, and learning and growth (Kaplan and Norton 1996). It links a company's strategic objectives to performance measures, sets targets and aligns them with strategic initiatives (Kaplan and Norton 1996). The performance measures of the BSC do not only represent a balance between financial and non-financial measures, but also between external and internal measures, short- and long-term measures as well as outcome measures and performance drivers of these outcomes (Kaplan and Norton 1996). The BSC provides managers with information from four different perspectives while at the same time minimizing information overload through a limited number of measures (Kaplan and Norton 1992).

Performance measurement as the process of quantifying the efficiency and effectiveness of an action using a set of performance metrics (Neely, Gregory and Platts 1995). Effectiveness is the extent to which a customer's requirements are met and efficiency measures how economically a firm's resources are utilized when providing a pre-specified level of customer satisfaction. Performance measurement systems are described as the overall set of metrics used to quantify both the efficiency and effectiveness of action.

It has been argued that measuring SC performance can facilitate a greater understanding of the supply chain and improve its overall performance (Chen and Paulraj 2004).

To attain this SC wide performance measurement initiative would seem most appropriate. Therefore, there is an emerging requirement to focus on the performance of the SC or network in which company is a partner.

According to Parker (2000) the purpose of measuring organizational performance is (1) to identify success; (2) to identify whether customer requirements are met; (3) to help understand organizational processes; (4) to identify problems, bottlenecks, waste etc.; (5) to ensure decisions are based on facts rather than on supposition or emotion and (6) to show whether planned improvements actually happened.

Performance measurement is particularly important in the humanitarian sector, where limited resources have to be used in the most efficient and effective way. Furthermore, the increased frequency and severity of natural and manmade disasters, the costs involved in humanitarian supply chain operations as well as the growing competition for scarce resources and donor funding, make performance measurement vital for all organizations involved in disaster management (Beamon and Balcik 2008)

According to Poister (2003), effective performance measurement systems can help public and non-profit managers to make better decisions, to improve performance and to provide accountability. Furthermore, performance measures provide feedback on agency performance and help redirect resources more effectively. Performance measurement therefore allows for greater control over operations while increasing flexibility at the operating level (Beamon and Balcik 2008). Yet, performance measurement systems have not been systematically implemented in the humanitarian supply chain (Beamon and Balcik 2008).

The initial focus and application of the Balanced Scorecard was in the commercial sector, Kaplan (2001) states that the opportunity for the BSC to improve the management of non-profits should be even greater. The reasoning behind his statement is “For profit-seeking corporations, the financial perspective provides a clear long-run objective, but it provides a constraint rather than an objective for nonprofits. Although these organizations must certainly monitor their spending and comply with financial budgets, their success cannot be measured by how closely they keep spending to budgeted amounts, or even if they restrain spending so that actual expenses are kept well below budgeted amounts.”

Starting in 1996, Kaplan conducted a multiyear action research program to apply the Balanced Scorecard to several non-profit organizations Kaplan (2001) suggests three adaptations that are

necessary to apply the Balanced Scorecard in the non-profit sector:(1) Placing the customer perspective at the top of the Balanced Scorecard: In the original architecture of the Balanced Scorecard, the financial perspective was placed at the top of the hierarchy since financial considerations are the primary objective of commercial companies and because financial measures provide the accountability measure between the organization and its shareholders. As the primary goal of a nonprofit organization is to effectively and efficiently meet the needs of its communities, the customer perspective should be placed at the top of the Balanced Scorecard in the non-profit sector.(2) Placing the main mission at the top of the Balanced Scorecard: For nonprofit organizations, the agency's mission represents its accountability towards society. It reflects the organization's long-term objective.

Therefore, it should be featured at the highest level of the Balanced Scorecard so that the objectives within the BSC can be oriented towards improving the long-term objective of the organization. (3)Placing both, the donor perspective as well as the recipient perspective in parallel at the top of the Balanced Scorecard: While in private sector transactions customers both pay for and receive the services of an organization, these roles are separate in the non-profit sector. Donors assume the role of providing the financial resources whereas the constituents assume the role of receiving the service. Therefore, both parties should be placed in parallel at the top of the Balanced Scorecard.

## **2.12 Factors Affecting Supply Chain Management**

Good supplier management is not enough; there is an additional requirement for a wider, more integrated, all-encompassing perspective embracing all processes from sourcing through make and transportation and on to merchandising to final customers. Turban et al. (2004), assert that there are several important problems in SCM that need to be resolved for efficient operation. Most of these problems stem either from uncertainties or inability to coordinate several activities and partner.

A study by Marien(2000)identified four key enablers that must be fully leveraged if SCM is to be successful and may also be barriers to effective supply chain management if they are not in place. These included: organizational infrastructure, technology, strategic alliances and human resource management.

In order to understand how a supply chain works, it is important to identify the factors affecting supply chain management. The identification of these factors has been based on previous work



by Li (2002), and Quesada and Meneses (2010). The following sections show general supply chain management factors that might affect supply chain management activities.

### **2.12.1 Environmental Uncertainty**

These factors are playing important roles for organizational supply chain performance (Bergeron, 2004). Generally environment uncertainty involves three dimensions of supply chain such as supplier uncertainty, demand uncertainty and manufacturing uncertainty (Davis, 1993). Supplier uncertainty concern with supplier could not supply product to the customer. Another supplier uncertainty is that product cannot be delivered on time or the qualities problems. Demand uncertainty is uncertainty of customer demand for a product. Implied demand uncertainty is also referred to customer needs and product variability. Thus, customers' expect demand different than the implied demand uncertainty will be influenced (Melinda, 2003). Environmental uncertainties are related to how hard it is to precisely foresee the future (Lee et al., 2009). According to Sung and Hsu (2009) supply chain performance can be influenced by environmental uncertainties, which can allow deciding about significant aggressive factors to take into account and weigh in for the formulation of a successful competitive strategy.

### **2.12.2 Company Environment**

This factor is related to the company's relationship with suppliers and their level of trust and commitment s in the supply chain (Wu, 2006) in order to perform in a proficient manner. Company environment is also related to the company's expectations of quality and on time delivery. According to a study carried out by Ambrose et al. (2010), uncertainty negatively affects company performance. But this can be reduced if a strategic relationship with critical suppliers is established (Chen et al 2004). Thus, companies need to implement new strategies that allow them to deal with environmental uncertainties in the supply chain (Wu, 2006) in order to perform in a proficient manner.

### **2.12.3 Government Support**

The level of support that the organization receives from the government when importing materials products from overseas or using domestic materials. It includes the use of norms, regulations, policies, and advice for the sector.

### **2.12.4 Information Technology**

Telecommunications and computer technology allow all the actors in the supply chain to communicate among each other. The use of information technology allows suppliers, manufacturers, distributors, retailers, and customers to reduce lead time, paperwork, and other unnecessary activities.

It is also mentioned that managers will experience considerable advantages with its use such as the flow of information in a coordinated manner, access to information and data interchange, improved supplier relationships, and inventory management not only at the national level but also internationally (Hand field and Nichols, 1999). Also the advantages will include supply contracts via internet, distribution of strategies, and procurement (Simchi-Levi et al., 2003). All companies are looking for cost and lead time reductions with the purpose of improving the level of service but also to enhance inter-organizational relationships (Humphreys et al. 2001).

A study carried out by Tim (2007) states that through the use of communication tools, such as the web sites, organizations can build value in their supply chain relationships.

According to Turner (1993), another key for supply chain management success is the use of planning tools. He also mentions that without the use of information systems, companies cannot handle costs, offer superior customer service and lead in logistics performance.

Turner (1993) indicates that firms cannot effectively manage cost, offer high customer service, and become leaders in supply chain management without the incorporation of top of-the-line information technologies. Li (2001) identified such information technology tools, among them electronic data interchange (EDI), enterprise resource planning (ERP), internet, and extranets. Li grouped these tools into three groups in terms of their primary purpose: communication tools, resource planning tools, and supply chain management tools.

### **2.12.5 Supply Chain Relationships**

Supply chain relationships play an important role in achieving the firm's goals. The coordination and integration of activities with suppliers and understanding of customer's needs results in

greater benefits for companies. Supply chain management is directly related to relationship management, which includes suppliers and customers.

Strategic supplier partnerships and customer relationships are main components in the supply chain management practices (Li et al., 2005).

#### **2.12.6 Relationships with Suppliers**

Companies are inclined to work with different suppliers in different ways. It is important that the relationship with suppliers satisfies their organization needs. It may be beneficial to network the supplier to develop partnerships and alliances that will benefit both partners.

#### **2.12.7 Flexibility**

The complex markets, and fast changes in demand require that organizations be ready to react quickly to fulfill their needs. Flexibility can be understood as the ability to react and adapt quickly to changes in the market due to an increase or decrease of organizations requirements.

The need for flexibility originates from customers; since customers ask for variety, quality, competitive prices, and faster delivery. This has forced companies to make design changes quickly and respond faster to customer needs in order to sustain the company's competitive advantage. As a result, companies need to be flexible enough to react to changes in customers' demands.

#### **2.12.8 Quality and Quality Management**

Quality is not a bonus for the customer; it is expected. Quality is also important for the acceptance of a product. Quality is meeting or exceeding the expectations of your customer (Bishop, 1990). This could be achieved, for example, by the use of quality metrics, which improves the production system (Juran, 1988). Achieving better efficiency, quality and productivity, and acquiring the highest value of a product at lower cost will improve the business performance of a company. Quality management is the system which leads to long term benefits by continuous improvements in processes through using different quality techniques. Due to globalization companies adopted those suppliers and partners who provide them good quality of raw material for final product. When the practices of SCM and quality management are integrated and communicated then it leads to continuous improvement and gain competitive

advantage. Quality management activities like quality policy, objectives, responsibility and quality planning are important for efficient processes.

Even though achieving lower price is still an important motive in order to make the products affordable for the buyer governments, availability and quality are also of critical importance.

#### **2.12.9 Supplier Performance**

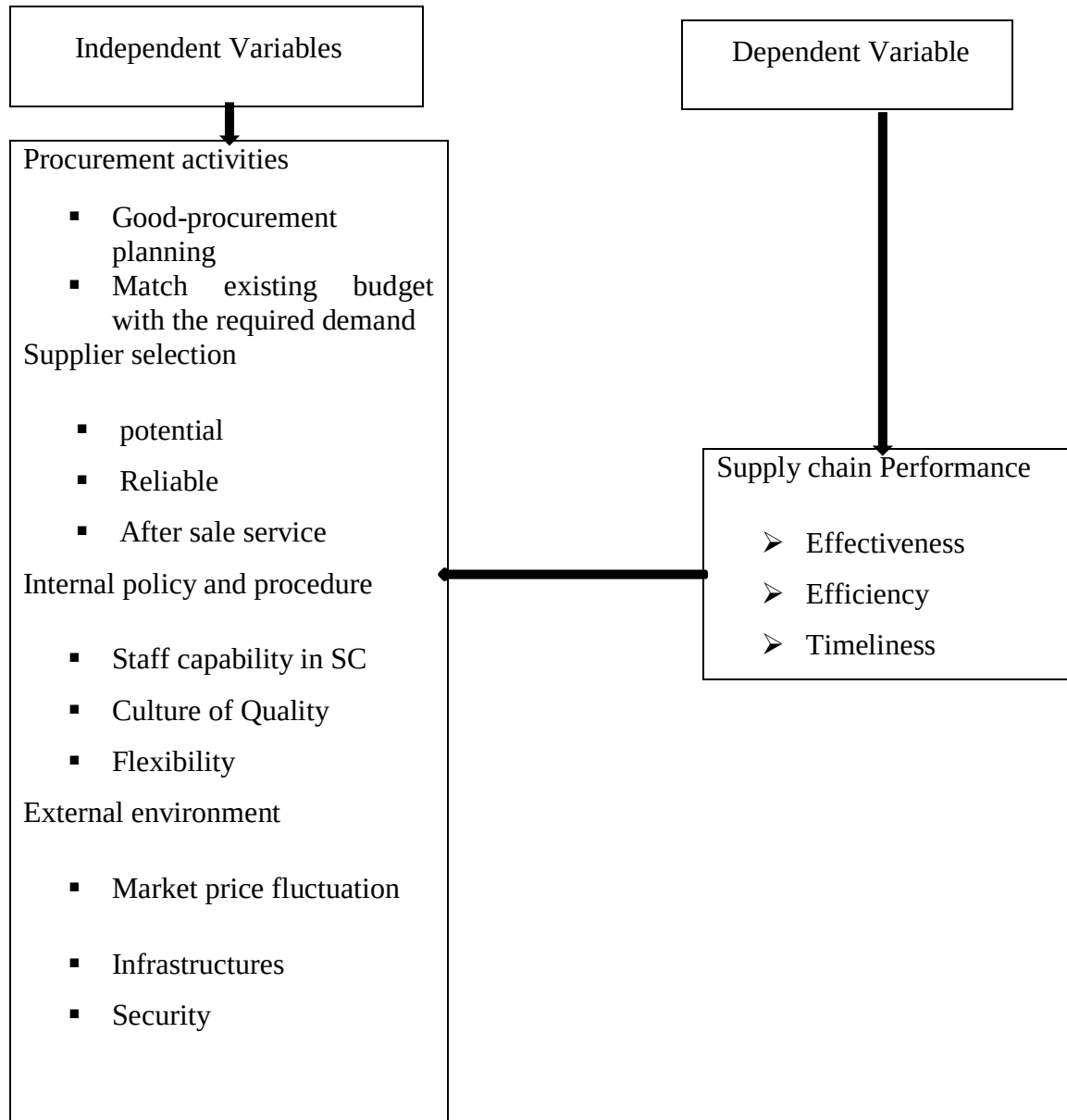
When looking for successful supplier performance, it is important to emphasize relationship quality. Researchers such as Walter, Kaufman, and Palmatier, propose relationship quality as a “multi-dimensional construct consisting of trust, satisfaction, and commitment.

”Steward, Wu, and Hartley (2010) consider factors such as product quality; responsiveness to requests for change; sales, service and/or technical support; total value received; and overall cost performance as a measurement of supply chain performance. They also found that “supplier performance is higher when the supply manager perceives trust and satisfaction on the part of the supplier’s account executive.”

#### **2.13 Conceptual Frame Work**

The study was guided by conceptual framework shown below. According to the conceptual framework, factors affecting supply chain performance include Procurement activities, Supplier selection practice, internal policy of the organization and external environment.

**Fig.2.1 Conceptual Frame work**



*Source: (Researcher, Info. FH Ethiopia Logistics and procurement Dept.)*

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1. Introduction**

The main purpose of the research methodology is to explain how the research will be carried out, what knowledge and information is required and how this data is collected. This is important in ensuring what the study addresses, the set objectives and answer the research questions on which it will be built up.

This section consists of research approach, sample design-sampling technique, sample size, source and instruments of data collection, methods of data analysis and ethical issues.

#### **3.2. Study Area**

The study area was FH Ethiopia child-focused relief and development organization. It is known globally as Food for the Hungry. The Operation began in Ethiopia in 1984. Since then it has engaged in multi sectorial programs in Amhara, Benishangul-Gumuz, Gambella, Oromia and Southern Nations, Nationalities and peoples' Regions.

FH Ethiopia addresses the needs, vulnerabilities and potential of young people plus committed to addressing community-identified needs and strengthening capacity of local partners including the government, community-based and faith based organizations, social networks, community leaders and all members of the house hold.

FH Ethiopia Sectorial Expertise are Health, Livelihoods, Education, Disaster risk Reduction, Gender, organizational and government capacity building and commodity management.

#### **3.3 Research Design**

A research design is defined as the blue print and a detailed plan of how a research study is to be conducted. The study used descriptive because it has been successfully used in other related management studies and descriptive studies are undertaken to understand the characteristics of organization that follow certain common practice Sekaran (2003). The major purpose of descriptive research is to provide information on characteristics of a population or phenomenon. The study is guided by the conceptual framework adapted, which views NGOs supply chain performance as an outcome of interaction between a number of underlying operating environmental situational factors and proximate organizational factors.

This is to ensure the valid and reliable data being collected from respondents who are familiar with supply chain in organization.

Due to the nature of information required, quantitative methods employed in the study. This is made possible by a structured questionnaire including all variables of interest in the study.

### **3.4. Population and Sampling Design**

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

Population is collection of all the subjects from which a sample is drawn and the target population entailed the specific population that the researcher carried out the study or we can define the target population as a specified group of people for which questions can be asked and observation are made to develop required data structures and information. At the area of the study, the researcher met respondents of the study who are in one way or another involved in supply chain management activities at FH Ethiopia non-governmental organization which is the entire employee of FH Ethiopia at head office.

#### **3.4.2 Sample Design**

Sampling is the process of selecting units from a population of interest so that by studying the sample we may fairly generalize our results back to the population from which they were chosen. Sampling design is a working plan or structure, which specifies the population frame, sample size and sample selection and how the sample size is estimated. The aim of the sampling design is to identify the characteristic of the population

#### **3.4.3 Sampling Frame**

A sample frame is an objective list of the population from which the researcher can make his or her selection. A sampling frame should be a complete and correct list of population members only, Cooper and Schindler (2008). The sampling frame for this study was obtained from the Human Resource Department of FH Ethiopia consisting of management and staffs who have knowledge on supply chain activities.

#### **3.4.4 Sampling Technique**

Sampling technique is the procedure a researcher uses to gather people, places or things to study. A sample is part of the target population that has been procedurally selected to represent it and whose properties are studied to gain information about the whole. The sampling technique used for this study was census survey and target population was drawn from FH Ethiopia employees.

### **3.4.5 Sample Size**

The study used census sampling procedure which will involve the population of seventy one FH Ethiopia non-government organization staffs. A census is attractive for small populations. A census eliminates sampling error and provides data on all the individuals in the population (Kothari, 2003).

### **3.4.6 Data Collection procedure**

Data is anything given or known as a fact on which a research inference was built in this study both primary and secondary data was collected.

Primary data was collected through the use of a questionnaire while Secondary data was collected through reviewing reports, journals, and relevant documents which gathered from Human Resources, procurement unit, other departments and learning and knowledge management center of the selected organization.

The questionnaire used for this data collection was pre-tested to determine whether questions and directions are clear to subjects and whether they understand what is required from them. This enabled the researcher to fine tune the questionnaire for objectivity and efficiency of the process. Initially suggestions of the supervisors were incorporated in the questionnaires.

Questionnaire:

Questionnaires generate data in a very systematic and ordered fashion, Kothari (2003). According to Mugenda and Mugenda (2003), questionnaires are commonly used to obtain important information about a population under study.

## **3.5 Ethical consideration**

The source of data for the study was questionnaire and the respondents were assured that the information provided by them is confidential and used exclusively for academic purpose. In addition, respondents were informed not to include any identity detail and personal reference in the questionnaire. This minimized the biasedness of the response collected from the respondents. In addition, the different research studies, articles and text books used as a reference in the study are exhaustively cited.



### **3.6 Data Analysis**

Data analysis refers to examining what has been collected in a survey or experiment and making deductions and inferences. Quantitative Analysis involves the process of presenting and interpreting numerical data which contains descriptive statistics. Qualitative analysis involved gathering an in-depth understanding of the research study and the basis of the same, while investigating the why and how of decision making. For this study, quantitative techniques were used.

Data collected by use of the questionnaire was initially thoroughly edited and checked for completeness and comprehensibility, summarized, coded for easy classification and tabulated. The tabulated quantitative data was then analyzed by using SPSS (version 20) Software which facilitated the establishment of patterns, trends and relationships using frequencies, mean, and standard deviation respectively making it easier for the researcher to understand and interpret the implications of the study.

Presentation of quantitative data was in form of figures and tables, which provided successful interpretation of the findings.

### **3.7 Summary of the Chapter**

The study used a descriptive census design in collecting data from the respondents because it portrays an accurate profile of people's events or situations. The target population consisted of seventy one respondents from employees of FH Ethiopia non-governmental organization and 59 (83.1%) questionnaires were returned fully completed while the rest 12(16.9%) questionnaires was not filled and returned from those distributed to the respondents. According to Mugenda and Mugenda (2003) a response rate of 70% and over is excellent for analysis and reporting on the opinion of the entire population. The primary data for the study was collected using the questionnaires. The next chapter analyzed data based on the research objectives and basic research questions, procurement activities, supplier selection practice, internal policy and procedure and external environment and what is the implication of the stated variables on the supply chain performance of FH Ethiopia non-governmental organization using statistical tools like mean, standard deviation and frequency presented by figures and tables.

## CHAPTER FOUR

### RESULTS AND FINDINGS

#### 4.1 Introduction

This chapter presents the analysis of study findings on factors that affect supply chain performance of non-government organization: a case of FH Ethiopia. The findings were analyzed and presented in the form of frequency tables, mean and standard deviation. The analysis and interpretation of data was guided by the research objectives from which a discussion of findings has been made.

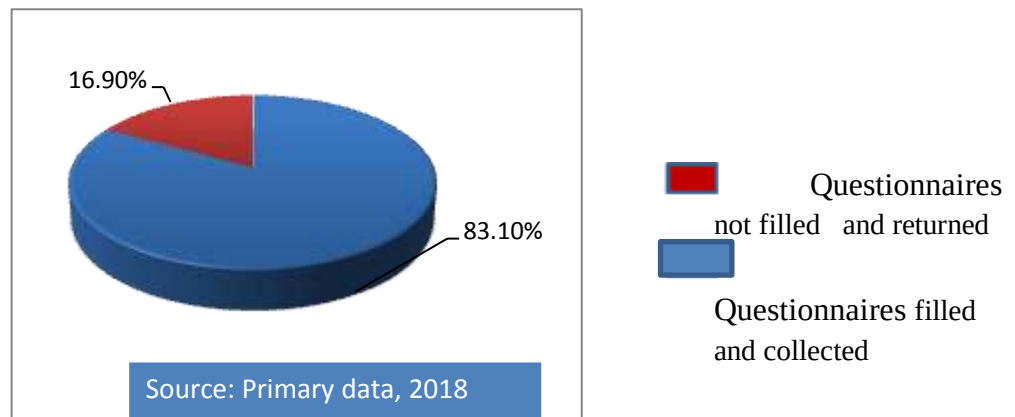
The researcher handed out 71 questionnaires to the target population. Out of which 59 questionnaires were completely filled. This gave the study a response rate of 83.1% which was above the required threshold, since Cooper and Schindler (2011) state that a study response of 65% and above is significant in facilitating the analysis of a study.

The study further sought to determine the general characteristics of the respondents who participated in the study. The findings are presented in this section. The demographic information was sought in order to assist the researcher in determining whether the respondents of the study were a representative sample of the target population for generalization purposes.

The findings of the study indicate 10.2% of the respondents were directors, 23.7% managers, 23.7% coordinators, 27.1% officers and the remaining 15.3% of the respondents were other positions and these results indicate that the respondents were well educated to understand the study.

#### 4.2 Response Rate

Figure 4.1 Response Rate shows (83.10% of questionnaires filled and collected, 16.90% not filled and returned)



## 4.3 Demographic Characteristics

### 4.3.1 Gender of the respondents

Results of the study on table 4.3 below show the gender of the respondents. Based on the study majority, 67.8% of the respondents indicated that they were male while 32.2% stated they were female.

Table: 4.1 Genders

| Gender | Frequency | Percentage |
|--------|-----------|------------|
| Male   | 40        | 67.8       |
| Female | 19        | 32.2       |
| Total  | 59        | 100%       |

Source: Primary Data (2018)

### 4.3.2 Education level of respondents

Table 4. 2 Below represents the level of education of the respondents. 39% of the respondents have a postgraduate degree, 52.5% indicates respondents holding first degree while 8.5% were diploma holders. These results indicate that the respondents were well educated to understand the study topic and what mean supply chain performance.

Table 4.2. Education level of respondents.

| Education Level | Frequency | Percentage |
|-----------------|-----------|------------|
| Master's Degree | 23        | 39         |
| BA degree       | 31        | 52,5       |
| Diploma         | 5         | 8.5        |
| Total           | 59        | 100%       |

Source: Primary Data (2018)

### 4.3.3 Year of service In the Organization

Results on table 4.4 indicate the number of years the respondents have worked at FH Ethiopia. Majority of the respondents had worked in the organization between 6-10 years represented by 39%, 33.9% had worked for less than 5 years, 16.9% between 11-15 years and while 10.2% of the respondents had worked above 16 years. It can be concluded that most of the respondents were familiar with the organization.

Table 4.3: Year of service in FH Ethiopia

| Years of Service    | Frequency | Percentage |
|---------------------|-----------|------------|
| Less than five year | 20        | 33.9       |
| 6-10 years          | 23        | 39         |
| 11-15 years         | 10        | 16.9       |
| 16 years and above  | 6         | 10.2       |
| Total               | 59        | 100%       |

Source: Primary data (2018)

#### 4.4 Factors affecting supply chain performance of FH-Ethiopia

Respondents were given questionnaire with some variables to look at supply chain management practices in an organization those affect supply chain performance, and told to rate how they perceived application of the given variables in the management of supply chain in FH-Ethiopia. The variables were Procurement Activities, Supplier Selection practice, Internal Policy and Procedure and External Environment. In which respondent were told to rate their opinions on the Likert scale ranging from strongly disagree (1) to strongly agree (5). Results in table 4.4 shows that supplier selection practice has very high impact on supply chain performance with a sample mean of 4.24. This is followed by procurement activities 4.02, external environment 3.91 and finally internal policy and procedure 3.81 respectively.

Table 4.4 Factors affecting supply chain performance variables

| Supply chain performance variables | Frequency |            |              |              |             | Total | Mean | Std.dev |
|------------------------------------|-----------|------------|--------------|--------------|-------------|-------|------|---------|
|                                    | 1         | 2          | 3            | 4            | 5           |       |      |         |
| Procurement Activities             | 1<br>1.7% | 1<br>1.75% | 12<br>20.35% | 27<br>45.85% | 18<br>30.5% | 100%  | 4.02 | .861    |
| Supplier Selection                 | 0<br>0    | 2<br>3.4%  | 6<br>10.2%   | 27<br>45.8%  | 24<br>40.7% | 100%  | 4.24 | .773    |
| Internal Policy and Procedure      | 2<br>3.4% | 3<br>5.1%  | 16<br>27.1%  | 21<br>35.6%  | 17<br>28.8% | 100%  | 3.81 | 1.025   |
| External Environment               | 1<br>1.7% | 3<br>5.1%  | 11<br>18.6%  | 30<br>50.8%  | 14<br>23.7% | 100%  | 3.90 | .885    |

Source, primary data (2018)

Sample mean that falls in 4 and 5 have high effect on the performance of supply chain of the selected organization while sample mean that falls in 3 will indicate moderate effects of the factor on supply chain performance. Therefore, variables with sample means lower than 2 may not be used for further analysis as they indicate low effects on supply chain performance.

## 4.5 Factors Affecting SC Performance

This section discusses factors affecting supply chain performance and the section is divided into four. It begins with procurement activities variables affecting SC performance in FH-Ethiopia. This is followed by supplier selection practice, internal policy and external environment variables affecting supply chain performance.

### 4.5.1 Procurement activity variables affecting supply chain performance

Procurement and Supply Chain performance is a measure of identifying the extent to which the procurement and Supply Chain function is able to reach the objectives and goals with minimum costs. There are two main aspects of the procurement performance; effectiveness and efficiency. Procurement and Supply Chain Effectiveness is the extent to which the previously stated goals and objectives are being met. It refers to the relationship between actual and planned performance of any human activity. Additionally, Efficiency is the relationship between planned and actual resources required to realize the established goals and objectives and their related activities, referring to the planned and actual costs.

Table 4.5.2 Procurement activity variables

|   |                                                                                                                                                             | Frequency |    |    |    |    | mean | std.de |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----|----|----|----|------|--------|
|   |                                                                                                                                                             | 1         | 2  | 3  | 4  | 5  |      |        |
| 1 | Absence of appropriate procurement plan which fails to match with the existing budget                                                                       | 10        | 3  | 13 | 17 | 16 | 3.44 | 1.393  |
| 2 | Lack of mutual understanding of the requesting entity and the procurement unit affects the better service that should be delivered.                         | 7         | 10 | 17 | 17 | 8  | 3.15 | 1.215  |
| 3 | Giving less value, unrecognized the importance, and not knowing the extent of service procurement unit offers greatly affects the supply chain performance. | 7         | 9  | 19 | 13 | 11 | 3.20 | 1.256  |
| 4 | Absence of clear specification, technical support and proper approval affect the entire procurement process thus affect the performance of SC.              | 8         | 4  | 6  | 23 | 18 | 3.66 | 1.347  |

Source, primary data (2018)

Table 4.5 shows that; absence of clear specification, technical support and proper approval was a challenge to a large extent (mean score 3.66), absence of appropriate procurement plan which fails to match with the existing budget was average (mean score 3.44), giving less value, unrecognizing the importance, and not knowing the extent of service procurement unit offers(3.2), and lack of mutual understanding of the requesting entity and the procurement unit affects the better service that should be delivered was rated moderate (mean score 3.15)effects on supply chain performance of the organization. The result revealed that when a procurement department is inefficient in its procurement activities it affects all the other departments and therefore has a great impact on the organization's Supply Chain as a whole.

#### **4.5.2 Supplier Selection practice**

Among the most significant parts of the supply chain process is supplier evaluation and selection and needs to be performed with care to avoid errors that may have long-lasting effects to a company. Supplier selection begins with formulation of the criteria that will be used to select suppliers and it is crucial decision for NGO's as it determines the efficiency and effectiveness of the firm.

Supplier selection is the process by which the buyer identifies, evaluates and contracts with the suppliers. Suppliers are considered the best tangible assets of any organizations that have varied strengths and weaknesses that require careful assessment before order placed (de Boer, 2001).

Selection of appropriate suppliers is one of the fundamental strategies for enhancing the quality of output of any organization, which has a direct influence on the company's reputation since they can have a very positive or a very adverse impact on the overall performance of the organization (Weber et al. 1991).

Table 4.6 supplier selection practice of FH Ethiopia

|   |                                                                                                                 | Frequency |   |    |    |    | Mean | St. Dev. |
|---|-----------------------------------------------------------------------------------------------------------------|-----------|---|----|----|----|------|----------|
|   |                                                                                                                 | 1         | 2 | 3  | 4  | 5  |      |          |
| 1 | Planned and critically assessed supplier selection is essential tool to improve supply chain performance of the | 0         | 2 | 5  | 21 | 31 | 4.37 | .786     |
| 2 | The problem of selecting trustworthy and competent supplier affects the organization supply chain performance.  | 0         | 1 | 10 | 21 | 27 | 4.25 | .801     |
| 3 | Supplier Geographical location from the organization                                                            | 1         | 6 | 16 | 24 | 12 | 3.68 | .973     |
| 4 | Training aid and repair service availability after sale could be one of good criteria to select suppliers       | 1         | 4 | 18 | 19 | 17 | 3.80 | .996     |
| 5 | The ability of the supplier to meet quality product and services on just in time delivery                       | 1         | 2 | 6  | 26 | 24 | 4.19 | .880     |

Source: Primary data (2018)

Table 4.6 indicates how supplier selection affects supply chain performance of the organization. The results show a strong tendency towards agreement with planned and critically assessed supplier selection is essential tool to improve supply chain performance of the organization having a mean of 4.37 and standard deviation of .786 while the problem of selecting trustworthy and competent supplier had 4.25 mean and 0.801 standard deviation respectively. The ability of the supplier to meet quality product and services on just in time delivery, training aid and repair service availability after sale and supplier geographical location from the organization were rated at means of 4.19, 3.80, and 3.68 respectively, which implies absence of careful supplier selection affects performance of humanitarian supply chains negatively.

### 4.5.3 Internal Policy and Procedure

Table.4.7 Internal policy and procedure factors

Source: primary data (2018)

|   |                                                                                                                                                                                                           | Frequency |    |    |    |    | Mean | St.de |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----|----|----|----|------|-------|
|   |                                                                                                                                                                                                           | 1         | 2  | 3  | 4  | 5  |      |       |
| 1 | The procurement policy of the organization prefers items locally manufactured which at times has an effect on the required quality, and ultimately limits the performance of the supply chain management. | 8         | 13 | 21 | 10 | 7  | 2.92 | 1.193 |
| 2 | Availability of frequent staff training and development improves supply chain performance                                                                                                                 | 1         | 4  | 14 | 16 | 24 | 3.98 | 1.042 |
| 3 | The organization's internal procurement policy by itself at times limits the quality of service being delivered.                                                                                          | 5         | 12 | 17 | 16 | 9  | 3.20 | 1.186 |
| 4 | Supply chain performance affected if quality is not the culture of the organization                                                                                                                       | 2         | 4  | 12 | 26 | 15 | 3.81 | 1.008 |

According to the summary on Table 4.7 the availability of frequent staff training and development plus presence of quality culture have great impact on performance of supply chain, this result match with that 'staff training and development is a work activity that can make a very significant contribution to the overall effectiveness of an organization (Adeniyi 1995).The effectiveness and success of an organization therefore lies on the people who work within the organization. It follows therefore that the employees in an organization to be able to perform their duties and make meaningful contributions to the success of the organizational goals need to acquire the relevant skills and knowledge. The functions of training as follow: increase productivity, improves the quality of work; improves skills, knowledge, understanding and attitude; enhance the use of tools and machine; reduces waste, accidents, turnover, lateness, absenteeism and other overhead costs, eliminates obsolesce in skills, technologies, methods, products, capital management etc. It brings incumbents to that level of performance which needs the performance for the job; enhance the implementation of new policies and regulations; prepares people for achievement, improves man-power development and ensures the survival and growth of the enterprise. Oribabor, P.E. (2000).



According to the study, quality practices and culture play a critical role in supply chain performance and quality is an important factor for companies in their relationship between suppliers and customers. Quality management improvements in reducing process variation directly impact on several supply chain performance measures. Proper implementation of quality practices leads to fewer defects; the amount of inventory in the supply chain is reduced.

#### 4.5.4 External Environment those underlined

Table 4.8 External environment factors

|   |                                                                                                          | Frequency |   |    |    |    | Mean  | Std.de |
|---|----------------------------------------------------------------------------------------------------------|-----------|---|----|----|----|-------|--------|
|   |                                                                                                          | 1         | 2 | 3  | 4  | 5  |       |        |
| 1 | Market price fluctuation affects the supply chain performance.                                           | 5         | 0 | 2  | 21 | 31 | 4.32  | .899   |
| 2 | Suppliers fail to deliver quality items on agreed time frame.                                            | 1         | 4 | 11 | 23 | 20 | 3.97  | .982   |
| 3 | Absence of good infrastructure like all-weather road affect supply chain performance of the organization | 7         | 0 | 19 | 21 | 12 | 3.64  | .943   |
| 4 | Absence security due to different reason                                                                 | 1         | 6 | 16 | 22 | 14 | 3.71  | 1.001  |
| 5 | Unstable business environment                                                                            | 2         | 3 | 10 | 23 | 21 | 3.98  | 1.025  |
|   | Average mean                                                                                             |           |   |    |    |    | 3.924 | .970   |

Source: Primary data (2018)

The results revealed that the performance of supply chain was dependent on external environment with average mean 3.924 and standard deviation of .970, this shows almost all respondents agreed on supply chain performance of the organization was affected by external environment specially market price fluctuation has very high impact on supply chain performance with a sample mean of 4.32. This is followed by unstable business environment (3.98) and Absence of good infrastructure (3.64) as having moderate effects on supply chain performance. According to Sung and Hsu (2009) supply chain performance can be influenced by environmental uncertainties specially market price fluctuation, which can allow deciding

about significant aggressive factors to take into account and weigh in for the formulation of a successful competitive strategy.

## **4.6 Chapter Summary**

In this chapter, the study results and discussions of the results and findings have been presented in the form of tables and figures. In terms of factors affecting supply chain performance in FH Ethiopia, the findings show that supplier selection practice, procurement activities, external environment and internal policy can affect supply chain performance with a sample mean of 4.24, 4.02, 3.90 and 3.81 respectively. There is high degree of agreement that supplier selection practice in the selected organization more affects the performance of supply chain.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

The purpose of this chapter is to discuss and draw conclusions and recommendations on the findings of the main objective of the study which was to examine the factors affecting supply chain performance of non-governmental organization the case of FH Ethiopia based on the specific objectives and answers to research questions. The variables under consideration through the study were procurement activities, supplier selection practice, internal policy and procedure and external environment.

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

The study was carried out to examine factors affecting supply chain performance of FH-Ethiopia non-governmental organization. The study was guided by four basic objectives as follows; how procurement activities influence the performance of the organizations supply chain, how supplier selection practice in the organization affects SC performance, how internal policy and procedure of the organization affects supply chain performance and how external environment affects the performance of supply chain in FH Ethiopia. The study adopted a descriptive research design.

This study relied on primary data as the preferred source of research data and was collected through questionnaires that were distributed to the targeted respondents. Collected data was coded before entry into Statistical Package for the Social Sciences (SPSS version20) for analysis. Descriptive statistics was computed whereby frequencies, percentages, means and standard deviations were presented in the form of both tables and figures.

The finding shows 86.5% of respondents gave high rank supplier selection practice has greater influence on organizations supply chain performance (mean 4.24) and this shows suppliers have to be selected carefully, as they can have a very positive or a very adverse impact on the overall performance of the organization not supply chain performance only. Therefore the study established that the ability to have good supplier selection method and serves to improve on overall supply chain performance.

This enriches the views of (Weber et al. 1991) that, selection of appropriate suppliers is one of the fundamental strategies for enhancing the quality of output of any organization, which has a direct influence on the company's reputation since they can have a very positive or a very adverse impact on the overall performance of the organization.

Since the overall objective of supplier selection is to have a risk reduction in purchasing, maximizing total purchase value, and building long-term relationships between buyers and suppliers. Effective supplier selection decisions require good processes to evaluate the many factors related on how to find the supplier locations that align best with future plans.

The results are in agreement with findings of Matook et al. (2009) the operational success of organizations policies will often depend on the development of a network of reliable and trustworthy suppliers and consequently, making the right supplier selection decisions are important.

In the second place the study shows that procurement activities and its components affect greatly the organizations supply chain performance in 76.3% and average of mean of 4.02. This implies that unless procurement activities have given focus and improved, the performance of SC of the organization affected in large degree. Procurement function has been one of the vital departments in any organization. It contributes tremendously to the organizational efficiency and effectiveness when a procurement department is inefficient in its procurement activities it affects all the other departments and therefore has a great impact on the organization's Supply Chain performance. This finding is in line with Moncska et al (2010) who held that the procurement function has a significant impact on SC performance. In general the study shows procurement and supply chain performance improved quality of products, improved ability to meet demand, improved organizational performance, leads to reduced costs improved ability to meet demand and helps in customer satisfaction and confidence.

The study indicates as third factor that external environment also had an impact on SC performance of the organization at 74.5% and means of 4.02 and this shows due to this factor and from the result that analyzed SC performance of the organization affected and hindered by external environment and its components like market price fluctuation, absence of good infrastructure, absence of security and unstable business environment this goes in lines with (Chakravarty, 2011) the existence of a well-developed road infrastructure facilitate the logistical

operations, while a poor road network tends to disrupt and slow down the distribution of relief items.

Finally the result revealed by the study indicates that though internal policy and procedure affects the organizations SC performance, it affects at moderate level 64.4%; however absence of staff training and development holds the highest affecting factor from the components of internal policy and procedure.

### **5.3 Conclusion of the Findings**

Using mean score methods of interpreting data that collected from respondents the study established that supplier selection practice in selected organization affects supply chain performance at higher level and adoption of formalized and systematic supplier selection strategies has played a critical role and has become an important enabler to improve organizations supply chain performance thus suppliers have to be selected carefully, as they can have a very positive or a very adverse impact on the overall performance of the organization. The study also established that procurement activities (absence of appropriate procurement plan, lack of mutual understanding and absence of clear specification, technical support and proper approval), internal policy related to procurement, training and development, quality culture and Organizations ability to enhance internal processes by ensuring they were flexible enough to respond to market changes facilitated the adoption of supply chain performance .These results are in line with Lambert and Cooper (2000) who state that, in order for firms to obtain superior supply chain performance, it must be able to enhance its internal firm processes by making sure that they are flexible enough to respond to market changes. finally external environment those assessed in the study affects and have negative impact on the organizations supply chain performance through preventing the organization to achieve timeliness, decreased efficiency, increased the risk of the firm`s ability to match demand and supply and lead to lack of reliability from donors, and beneficiaries whom the organization serves.

### **5.4 Recommendation**

Based on the findings of the study, the following recommendations are proposed: supply chain performance have led to increase in costs to the organization due to inefficiency and that more focus needs to improve supply chain performance and the management of the organization remains committed to offer appropriate support for supply chain department. Selection of

appropriate suppliers is one of the fundamental strategies for enhancing the quality of output of any organization, which has a direct influence on the company's reputation. Therefore during the supplier selection process, the managers should take into consideration strategic and operational factors as well as tangible and intangible factors which may enhance the performance of the organization and the criterion to use in selecting suppliers has to be examined extensively. For a supply chain performance to achieve its maximum level of effectiveness and efficiency, the following measures to be taken, management of the procurement and supplies process should be administered by qualified, competent and experienced procurement professionals. This will not only help maintain good procurement standards but also will help achieve high levels of efficiency and effectiveness. Provide frequent training to SC staff members on the best practices of supply chain management, it is regarded as a means of engaging the commitment of the employees to the organization, The study further recommends there should be a flexible procurement policy related to market fluctuation this reduces the time it takes for procurement process to be completed and timely delivery of the requirements for user departments. Finally the study recommends the organization should make sure that supply chain department is staffed with qualified people and in the right numbers, to ensure that work assignment is manageable and supply chain performance is improved. Staff skills and backgrounds should be systematically assessed before placement in the supply chain management function.

## **5.6 Area for Further Study**

It would also be interesting to expand this study to other non-government organization in the country plus business and government organizations. In addition, there is need to study additional factors in an organizations that influence supply chain performance. Generally there is a need for similar studies to be conducted in other NGOs in the country to facilitate a better understanding and perception about the factors affecting supply chain performance.

## REFERENCES

- Abidi, H., De Leeuw, S. and Klumpp, M. (2014). Humanitarian supply chain performance management: a systematic literature review. *Supply Chain Management: An International Journal*, 19(5/6), pp.592-608.
- Admaw Anley, (2010). Impact of Supply Chain Management Practices on Competitive Positioning of Ethiopian Textile Firms. Unpublished Master's Thesis, University of South Africa.
- Ambrose E, Marshall D, Lynch D. Buyer supplier perspectives on supply chain relationships. *International Journal of Operations & Production Management* (2010) 30:1269.
- ARC Advisory group (2002). Operation Excellence in Supply Chain Management.
- Autry, Zacharia and Lamb (2008) Logistics strategy taxonomy, *Journal of Business Logistics*.
- Beamon, B.M. (1999), "Measuring supply chain performance", *International Journal of operations & Production Management*, Vol. 19 Nos 3/4, pp. 275-92.
- Beamon, B.M. (2004), *Humanitarian Relief Chains: Issues and Challenges*.
- Beamon, B. and Kotleba, S. (2006). Inventory management support systems for emergency humanitarian relief operations in South Sudan. *The International Journal of Logistics Management*, 17(2), pp.187-212.
- Bowersox, D.J. & Daugherty, P.J. (1995). Logistics paradigms: The impact of information technology. *Journal of Business Logistics*, 16(1), 65-80.
- Britannica, 1994. Development of logistics
- Buckmaster, N. (1999), "Associations between outcome measurement, accountability and learning for non-profit organizations", *International Journal of Public Sector Management*, Vol. 12 No. 2, pp. 186-97.
- Chan, F. T. S., & Qi, H. J. (2003a). An innovative performance measurement method for supply chain management. *Supply Chain management – An International Journal*, 8(3), 209–223.

- Chen and Paulraj 2004) Towards a Theory of Supply Chain Management the Constructs and measurements.
- Chopra & Meindl (2004) Supply Chain Management, 2nd Edition.
- Chopra, Peter Meindl. Supply Chain Management: Strategy, Planning, and Operation. Edition, 2, illustrated. Publisher, Prentice Hall, 2004.
- Chopra, S., Kalra, D.V. & Meindl, P. (2010). Supply Chain Management: Strategy, Planning and Operation. Fourth edition.
- Cooper et al. 1997. Research in Humanitarian Supply Chain Management and a New Framework. Eurasian Journal of Business and Economics 2015, 8(15), 39-60.
- Dereje Asfaw, (2012). Impact of Supply Chain Management Practices on the organizational Performance of basic metal and engineering industries in Ethiopia. Unpublished Master's Thesis, University of South Africa.
- Folan, P. and Browne, J. (2005), "A review of performance measurement: towards performance management", Computers in Industry, Vol. 56 No. 7, pp. 663-80.
- Foster, T. A.: It Pays to Measure Performance: Logistics Performance Compensation Programs, Chilton's Distribution 90. (September 1991)
- Fraza V.SCM for small distributors. Industrial Distribution (2000) 89:81.
- Garg, G., & Kothari C.R (2014). Research Methodology. New Delhi: New Age International Publishers. Countries
- Giunipero, L.C., Handfield, R.B., Monczka, R.M. & Petterson, J.L. (2009). Sourcing and Supply Chain Management. Fourth edition. Cengage Learning
- Green & Inman (2005) Market orientation: relation to structure and performance", Journal of Business & Industrial Marketing, Vol. 20 Issue: 6, pp.276-284



- Haakansson, H. and Ford, D. (2002), "How companies interact in business networks?" *Journal of Business Research*, Vol. 55, pp. 133-9.
- Hau and Billington, 2000. *A New Introduction to Supply Chains and Supply Chain Management: Definitions and Theories Perspective*.
- Henderson, D.A., Chase, B.W. and Woodson, B.M. (2002), "Performance measures for NPOs", *Journal of Accountancy*, Vol. 193 No. 1, pp. 63-8.
- Humphreys, P., Lai, M., and Sculli D. 2001. An Inter-organizational Information System for Supply Chain management. *International Journal of Production Economics*. 70:245-255
- Hung H. Reconciling the paradox of supply-side and demand-side strategies in industrial innovation. *Industrial Marketing Management* (2010) 39:342.
- Kaplan, R. and Norton, D. (1992), "The Balanced Scorecard – measures that drive performance", *Harvard Business Review*, Vol. 70 No. 1, pp. 71-9.
- Kaplan, R. (2001). *Strategic Performance Measurement and Management in Nonprofit Organizations*. *Nonprofit Management Leadership*, 11(3), pp. 353-370.
- Khaddafi M, Heikal M (2014) *Financial Performance Analysis Using Economic Value Added in Consumption Industry in Indonesia* StockExchange
- Kothari W., (2004), *Research Methodology*, 2nd Edition, New age international publisher, India.
- Kovacs, G. and Spens, K.M. (2007), "Humanitarian logistics in disaster relief operations", *international Journal of Physical Distribution & Logistics Management*, Vol. 37 No. 2, pp. 99-114.
- Kuter and Yilmaz (2001) *Association for Information Systems AIS Electronic Library (AISeL*

- Kwamega M, Li D, Ntiamoah E (2015) Role of Total Quality Management (TQM) as a Tool for Performance Measurement in Small and Mediumsized Enterprise (SME'S) in Ghana. *British J Econom Manage & Trade* 10: 1-10.
- Lambert, D., M., & Cooper, M., C. (2000). Issues in Supply Chain Management. *Industrial Marketing Management*, 29(1), 65-83.
- Lappide, L.: What about Measuring Supply Chain Performance, ASCET, Vol. 3, Montgomery Research. (2002)
- Lee, H. L., Billington, C.: Managing Supply chain Inventory: Pitfalls and Opportunities, *Sloan Management Review*, Vol. 33, No. 3, 65–73. (1992)
- Lee P, Yeung A, Cheng T. Supplier alliances and environmental uncertainty: An empirical study. *International Journal of Production Economics* (2009) 120:190.
- Li S. An Integrated Model for Supply Chain Management Practice, Performance and competitive advantage in Manufacturing Management (2002) Ohio: The University of Toledo.1-266.
- Lysons, K. & Farrington, B. (2006). *Purchasing and Supply Chain Management*. Seventh edition. Prentice Hall
- Malhotra, Mark Peterson. Basic marketing research: a decision-making approach. Edition, 2,
- Matook, S., Lasch, R. and Tamaschke, R. (2009), “Supplier development with benchmarking as part of a comprehensive supplier risk management framework”, *International Journal of Operations & Production Management*, Vol. 29 No. 3, pp. 241-267.
- Marein, E. J. (2000). “The Four Supply Chain Enablers”, *Supply Chain Management Review*, Vol. 4, (1).
- Mason K. and Leek S. (2009). “Learning to build a supply network: An exploration of dynamic business models”, *Journal of Management Studies*, Vol.45, pp.774- 99.

- McLachlan, Larson and Khan 2009, 1050 “Not-for-profit supply chains in interrupted environments: The case of a faith-based humanitarian relief organization”, *Management Research News*, Vol. 32 Issue: 11, Wakolbinger and Toyonaka 2011, 38).
- Mooraj S, Oyon D, Hostettler D (1999) The Balanced Scorecard: a Necessary Good or an Unnecessary Evil *Euro Manage J* 17: 481-491.
- Moxham, C. (2009). Performance measurement: Examining the applicability of the existing body of knowledge to nonprofit organisations. *International Journal of Operations & Production Management*, 29(7), pp.740-763.
- Mugenda M. O. and Mugenda A. (2008), *Research Methods: Qualitative and Quantitative Approaches*, African Centre for Technology Studies,
- Mwailu & Mercer, (1983), Wernerfelt, (1984); Rumelt, (1984); Penrose, (1959). Resource-Based View. Retrieved from the web April 14, 2015.
- Mwirigi, N. D & Were, S (2014). Assessment of Factors Affecting Supply Chain Management Performance in Kenya Public Institutions-A Case of The Judiciary. *European Journal of Business Management*, 2(1), 141-155.
- Ngoto, A. N. & Kagiri, A. (2016). Factors affecting supply chain management performance in international non-governmental organisations in Kenya. *International Academic Journal of Procurement and Supply Chain Management* 2 (1), 37-49
- Neely, Gregory and Platts (1995) Performance Measurement System Design A Literature Review and Research Agenda. *International Journal of Operations & Production Management*, 15, 80-116.

- Oribabor, P.E. (2000), "Human Resources Management, A Strategic Approval,." Human Resources Management 9 (4) 21 – 24
- Parker (2000, 63) Performance measurement", Work Study, Vol. 49 Issue: 2, pp.63-66
- Measurement Systems to Humanitarian Supply Chains. In: M. Klumpp, S. De Leeuw, A. Regattieri and R. De Souza, Humanitarian Logistics and Sustainability, 1st ed. Springer, pp.235
- Poister (2003, 17), Poister, T. (2003). Measuring performance in public and non-profit organizations.
- Quesada, H. and Gazo, R. 2007. Methodology for Determining Key Internal Business Processes Based on Critical Success Factors: A Case Study in Furniture Industry. Business Processes Management Journal. 13(1):5-2
- Rays (2012) Efficacy of Economic Value Added Concept in Business Performance Measurement. Advanc Inform Technol Manage 2: 1-8.
- Reichart & Holweg, (2007). Creating the customer-responsive supply chain: A reconciliation of concepts. International Journal of Operations & Production Management, 27(11), 1144-1172.
- Rouse, P. and Putterill, M. (2003), "An integral framework for performance measurement", Management Decision, Vol. 41 No. 8, pp. 791-805.
- Sabry, (2015), the Impact of Supply-Chain Management Capabilities on Business Performance in Egyptian Industrial Sector, International Journal of Business and Management; Vol. 10, No. 6, Canadian Center of Science and Education.
- Sawhill, J.C. and Williamson, D. (2001), "Mission impossible? Measuring success in nonprofit organizations", Nonprofit Management and Leadership, Vol. 11 No. 3, pp. 371-86.

- Simchi-Levi et al., 2003: Bringing Products to Market: Contemporary Supply Chain Management Approach Journal of Business & Economic Research – April 2007 Volume 5, Stevens (2001) International journal of physical distribution and logistics management vol.46,
- Sim KL, Koh HC (2001) Balanced scorecard: a rising trend in strategic performance measurement. Measuring Business Excellence. Measuring Business Excellence 5: 18-27.
- Sowa J.E., Selden, S.C. and Sandfort, J.R. (2004), “No longer unmeasurable? A multidimensional integrated model of nonprofit organizational effectiveness”, Nonprofit and Voluntary Sector Quarterly, Vol. 33 No. 4, pp. 711-28.
- Steward D, Wu Z, Hartley J. Exploring Supply Managers' Entrepreneurial Ability and Relationship Quality. Journal of Business to Business Marketing (2010) 17:127.
- Stoddard, Abby, Adele Harmer and Katherine Haver. 2006. “Providing aid in insecure environments: trends in policy and operations.” Humanitarian Policy Group Report 23, September, Overseas Development Institute.
- Thomas, A. and Kopczak, L. (2005). From logistics to supply chain management: the path forward in the humanitarian sector. San Francisco: Fritz Institute.
- Torre, L.de.la, Dolinskaya, I. and Smilowitz, K. (2011), “Disaster relief routing: Integrating research and practice”, Socio-Economic Planning Science, Vol. 46 No. 1, pp. 88-97.
- Wright, J. Jones, D & Hoyle, S (2009). The Sustainable Supply Chain balancing cost, Customer service and sustainability to achieve a high-performance supply
- Wu Y. Robust optimization applied to uncertain production loading problems with import quota limits under the global supply chains management environment. International Journal of Production Research (2006) 44:849.

Zimmermann, J.A.M. and Stevens, B.W. (2006), "The use of performance measurement in South Carolina nonprofits", *Nonprofit Management and Leadership*, Vol. 16 No. 3, pp. 315-27.

## **APPENDICES**

### **Appendix A: Questionnaire**

#### **ADDIS ABABA UNIVERSITY**

#### **SCHOOL OF COMMERCE**

#### **DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT**

Dear Sir/ Madam,

I am a student at Addis Ababa university school of commerce pursuing a Master of Logistics and supply chain management. I am undertaking a research project in partial fulfillment of the academic requirements; my study is on factors affecting supply chain performance of non-government organization a case of Fh Ethiopia. I kindly request your co-operation in responding the following questions for the successful completion of the study. The overall purpose of this questionnaire is exclusively academic. Your response will not be used for any other purpose; it is confidential.

Your assistance and co-operation will be highly appreciated.

Alemtena Feleke

Addis Ababa University school of Commerce

#### **PART I: Demographic Information**

##### **1. Gender**

1: M ( )                      2: F ( )

##### **2. Educational level?**

1: Diploma ( )      2: Degree ( )                      3: Masters ( )      4: PhD ( )

##### **3. Position in the organization?**

1: Director ( )      2: Manager ( )                      3: coordinator ( )      4: Officer ( )      5: Other ( )

##### **4. Year of experience in FH Ethiopia**

1: < 5 ( )                      2: 6-10 ( )                      3: 11-15 ( )                      4: 16 and above ( )

## Part II: General Questions

Please indicate your level of agreement on the statements for each question using the following rating scale by putting “X”

### A: Procurement Activities

1. How supply chain performance of FH Ethiopia is influenced by procurement activities?

Key: 1= very little extent, 2= little extent, 3=average, 4= large extent, and 5= very large extent.

|   |                                                                                                                                                              | 1 | 2 | 3 | 4 | 5 |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| 1 | Absence of appropriate procurement plan which fails to match with the existing budget.                                                                       |   |   |   |   |   |
| 2 | Lack of mutual understanding of the requesting entity and the procurement unit affects the better service that should be delivered.                          |   |   |   |   |   |
| 3 | Giving less value, unrecognizing the importance, and not knowing the extent of service procurement unit offers greatly affects the supply chain performance. |   |   |   |   |   |
| 4 | Absence of clear specification, technical support and proper approval affect the entire procurement process thus affect the performance of SC.               |   |   |   |   |   |

### B: Supplier Selection

2. How do suppliers’ Selection practices affect the supply chain performance of the organization?

Key: 1= strongly disagree, 2= disagree, 3=neutral, 4= agree, and 5= strongly agree.

|   |                                                                                                                               | 1 | 2 | 3 | 4 | 5 |
|---|-------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| 1 | Planned and critically assessed supplier selection is essential tool to improve supply chain performance of the organization. |   |   |   |   |   |
| 2 | The problem of selecting trustworthy and competent supplier affects the organization supply chain performance.                |   |   |   |   |   |
| 3 | Supplier Geographical location from the organization                                                                          |   |   |   |   |   |
| 4 | Training aid and repair service availability after sale could be one of good criteria to select suppliers                     |   |   |   |   |   |
| 5 | The ability of the supplier to meet quality product and services on just in time delivery                                     |   |   |   |   |   |



### C: Internal Policy and Procedure

3. How does internal policy affect the performance of supply chain management?

Key: 1= strongly disagree, 2= disagree, 3=neutral, 4= agree, and 5= strongly agree.

|   |                                                                                                                                                                                                           | 1 | 2 | 3 | 4 | 5 |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| 1 | The procurement policy of the organization prefers items locally manufactured which at times has an effect on the required quality, and ultimately limits the performance of the supply chain management. |   |   |   |   |   |
| 2 | Availability of frequent staff training and development improves supply chain performance                                                                                                                 |   |   |   |   |   |
| 3 | The organization's internal procurement policy by itself at times limits the quality of service being delivered.                                                                                          |   |   |   |   |   |
| 4 | Supply chain performance affected if quality is not the culture of the organization                                                                                                                       |   |   |   |   |   |

### D: External Environment

4. How external environment affect performance of supply chain?

Key: 1= strongly disagree, 2= disagree, 3=neutral, 4= agree, and 5= strongly agree.

|   |                                                                                                          | 1 | 2 | 3 | 4 | 5 |
|---|----------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| 1 | Market price fluctuation affects the supply chain performance.                                           |   |   |   |   |   |
| 2 | Suppliers fail to deliver quality items on agreed time frame.                                            |   |   |   |   |   |
| 3 | Absence of good infrastructure like all-weather road affect supply chain performance of the organization |   |   |   |   |   |
| 4 | Absence security due to different reason                                                                 |   |   |   |   |   |
| 5 | Unstable business environment                                                                            |   |   |   |   |   |

E: How do supply chain performance variables affect the entire supply chain of the organization?

Key: 1= strongly disagree, 2= disagree, 3=neutral, 4= agree, and 5= strongly agree.

|   |                               | 1 | 2 | 3 | 4 | 5 |
|---|-------------------------------|---|---|---|---|---|
| 1 | Procurement activities        |   |   |   |   |   |
| 2 | Supplier selection            |   |   |   |   |   |
| 3 | Internal policy and procedure |   |   |   |   |   |
| 4 | External environment          |   |   |   |   |   |

**Thank you for your time and participation!!**