ANALYSIS OF SUPPLY CHAIN INTEGRATION ROLE ON ORGANIZATIONAL PERFORMANCE OF WORLD FOOD PROGRAMME ETHIOPIA OFFICE.

BY

ABDULHAKIM HAJI WADO

JUNE, 2018

ADDIS ABABA, ETHIOPIA

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

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Analysis of Supply Chain Integration Role on Organizational Performance of World Food Programme Ethiopia Office

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Approved by: Board of Examiners and Advisor

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Declaration

I, Abdulhakim Haji, declare that this thesis is a result of my independent research work on the topic entitled “Analysis of Supply Chain Integration Role on Organizational Performance of World Food Programme Ethiopia Office.” in partial fulfillment of the requirements for the Degree of Masters of Art in Logistics and Supply Chain Management at Addis Ababa University School of commerce. This work is original in nature and has not been presented for a degree in any other University. All the references are also properly recognized.

Abdulhakim Haji Signature Date

Confirmation

This is to certify that Abdulhakim Haji has carried out this thesis on the topic entitled "Analysis of Supply Chain Integration Role on Organizational Performance of World Food Programme Ethiopia Office" under my supervision. Accordingly, I here assure that his work is appropriate and standard enough to be submitted for the partial fulfillment of the requirements for the award of the degree of Masters of Art in Logistics and Supply Chain Management.

Dr. Shiferaw Mitiku (PhD) Signature Date

Dedication

This thesis work is dedicated to my wife, Rukia, who has been a constant source of support, encouragement and everything during the hard challenges of graduate school, and throughout my life. I am truly thankful and lucky for having you in my life. I would like to say I love you, and my love that I have gotten for you will have never been get old.

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List of Abbreviations and Acronyms

Acronym	Definition
CI	Customers Integration
DRMFSS	Disaster Risk Management and Food Food Security Security sector
EDP	Extended Delivery Point
EI	External Integration
ERBV	Extended Resource Based View
ERP	Enterprise Resource Planning
FAO	Food and Agriculture Organization
FDP	Final Delivery Point
IFAD	International Fund for Agricultural Development
II	Internal Integration
IOS	Inter Organizational System
IT	Information Technology
JIT	Just In Time
KPI	Key Performance Indicators
LSPs	Logistics Service Providers
MDG	Millennium Development Goal
ND	No Date
NGOs	Non Governmental Organizations
P-P	P-P Plot
R2	R Squared
RBV	Resource Based View
RDT	Resource Dependence Theory
ROA	Return On Assets
ROI	Return On Investment
ROS	Return on Sales
SAM	Shuttle Activation Monitor
SC	Supply Chain

Acronym	Definition
SCI	Supply Chain Integration
SCM	Supply Chain Management
SCOR	Supply Chain Operations Reference
SHF	Safe and Healthy Food
SI	Supplier Integration
TBR	Trust Based Rationalism
TCE	Transaction Cost Economics
UK	United Kingdom
UN	United Nations
UNDAF	United Nation Development Assistant Framework
UNHAS	United Nation Humanitarian Air Service
VAM	Vulnerability Assessment Mapping
WFP	World Food Programme

Abstract

Supply chain integration practices are considered a powerful weapon to optimize performance of the organization. The objective of this study was to analyze the supply chain integration role on organizational performance of the World Food Programme. Analysis of the supply chain integration dimensions require determination of major components: external integration, internal integration, supplier integration, customer integration, information integration and measurement integration. The problems of uncertainty, longer lead and cycle times, high inventory level, inefficiencies and ineffectiveness in today's supply chain were the critical factors that initiated this study for investigation. Both descriptive and an explanatory research design was employed with a sample of 110 employees through census that was 89% of the response rate. A questionnaire was used as a research tool for collecting data. Available data on these factors was gathered, formatted, processed and thoroughly checked for continuity and consistency. The supply chain integration and organizational performance data were infilled using the Five Point Likert-Scale while the Cronbach Alpha was used to check the data for reliability of measurement scale. The relationship between independent variables (supply chain integration) and dependent variables (organizational Performance) are also cross-checked from Pearson correlation matrix. To predict organizational performance from supply chain integration dimensions, such as external integration, internal integration, supplier integration, customer integration, information integration and measurement integration, the multiple linear regression model were adopted. The analysis indicated that the independent variables, supply chain integration with respect to the six dimensions (external integration, internal integration, supplier integration, customer integration, information integration and measurement integration) explained 36.4% variance on organizational performance. Out of the six independent variables, three of them (external integration, information integration and measurement integration) were statistical significant with p-value of less than 0.05 whereas the remaining three (internal integration, supplier integration and customer integration) were statistical insignificant with p-value greater than .05. The study concluded that the three independent variables (internal integration, supplier integration and customer integration) were rated low relatively to the others (external integration, information integration and measurement integration); this implies that these dimensions of supply chain are not at the optimal level in the organization. It is recommended that all the six dimensions of supply chain (external integration, internal integration, supplier integration, customer integration, information integration and measurement integration) should have to be integrated at the optimal level through system automation, framework agreement and relationship management in order to be an efficient and effective organizational performance.

Keywords: supply, chain, integration, external, internal, supplier, customer, information, measurement, and performance.

CHAPTER ONE

1. INTRODUCTION

The primary purpose for this study is to provide the comprehensive, quantitative and integrative analysis of supply chain integration role on the overall firm performance. The study explores the dimensions and role of supply chain integration, evidence of correlation between supply chain integration and firm performance.

The chapter deals with the background of the study which covered supply chain integration and organizational performance. Studies on supply chain integration and performance of organization in case of commercial, public, and humanitarian firms have been reviewed; and their dimensions as well as gaps of those studies on the extents of supply chain integration and organizational performance are reviewed and addressed respectively in the problem statements of this study.

The research questions of the study related to dimensions of supply chain integration, relationships between supply chain integration and organizational performance, roles of supply chain integration on performance of the organization are raised correspondingly. Following that topic, objectives of the study, both general and specific objectives are elaborated thoroughly; which is succeeded by significance, scope, and limitations of the study. Moreover, definition of terms, conceptual and operational definitions, are listed and defined by the researcher. Finally, the chapter is concluded by briefing the organizations of the study, from chapter one to five.

1.1. Background of the study

The pattern of concentrating on core capacities and outsourcing the rest has incited an expanding number of firms to look past their own limits for supplier and customer assets that may be utilized to make extra esteem (*Flynn, B.B., Huo, B. and Zhao, X., 2010 and Zhao, X., Huo, B., Selen, W. and Yeung, J., 2011*).

Integration is the nature of cooperation that exists among groups to accomplish a compelling, effective and joined framework. According to Flynn *et al.,* (2010), supply chain integration is characterized as how much a producer deliberately works together with its supply chain partners and cooperatively oversees intra-and between organization processes.

Supply chain integration (SCI) encourages firms to reconfigure their assets and abilities internally and externally to solidify their supply chain overall with an end goal to enhance long haul performance (*Huo, 2012*). It is for the most part recognized that SCI is basic in accomplishing performance and competitive advantages (*Zhao et al., 2013*).

The inevitable objective of SCI is to accomplish effective and efficient streams of items and services, data, cash and decisions, to give most extreme incentive to the client. While a few analysts consider SCI as a unidimensional develop (*Rosenzweig, E.D., Roth, A.V. and Dean, J.W. Jr., 2003*), most of the writing takes a gander at SCI as having distinctive measurements, for example, supplier integration (*Cousins and Menguc, 2006*), supplier and client integration (*Devaraj, S., Krajewski, L. and Wei, J.C., 2007*), strategic design integration (*Droge, C., Jayaram, J. and Vickery, S.K., 2004*), internal integration (*Pagell, 2004*), and logistics production-marketing and external integration (*Gimenez and Ventura, 2005*). From another viewpoint, integration has two noteworthy classifications (a) external strategic design integration that goes beyond the boundaries of the focal firm to involve suppliers and customers, and (b) internal design process integration which is more tactically oriented (*Droge et al., 2004*).

One of the key issues in the SCI writing is whether the connection amongst SCI and performance is all inclusive or dependent upon situations or systems. The widespread point of view recommends that specific sorts of SCI are more powerful than others in enhancing performance (*Huo, 2012*). For instance, internal integration is more emphatically identified with execution than external integration (*Flynn et al., 2010*). In any case, the unexpected point of view recommends that the adequacy of different sorts of SCI is dictated by the level

of contingent components (*Wong, C. W. Y., Lai, K., & Cheng, T. C. E., 2016*). For instance, *Iyer, (2009)* demonstrated that the impact of SCI on performance diminished as item turbulence and request flightiness mutually expanded. As of late, the SCI writing has progressively accentuated the external condition or item qualities as contingent elements. Notwithstanding, discoveries on the integration–performance relationship have been conflicting (*Huo, 2012; Zhao et al., 2013*).

It is contended that clashing discoveries about the viability of operational practices might be because of the absence of thought for possibility factors, for example, ecological vulnerability, procedure and institutional weight. They showed that: looking for general connections between, say JIT usage and operational performance, ought to be stayed away from, in light of the fact that the inability to recognize a connection may well be caused by the way that in the specimen there are plants that have embraced JIT by uncritical mimicry of others (*Ketokivi and Schroeder, 2004*). Along these lines, it is basic to think about firm procedure in contemplating SCI adequacy (*Mckone-Sweet and Lee, 2009*)

Scholars contend that an organization's practices ought to be lined up with its techniques to acquire unrivaled performance. In the supply chain context, it is contended that supply chain management practices ought to be lined up with firm strategy. Besides, it is recommended that there ought to be a vital fit among environmental, strategic (e.g. competitive strategy) and operational (e.g. SCI) factors to make organization achievable. Consequently, in this study, the contingent perspective is adopted to investigate the relationship between SCI and performance by considering the levels of firm's SCI *Stonebraker and Liao (2006)*.

The larger part of past examinations has concentrated on researching the impacts of various sorts of SCI (e.g. internal and external integration) on firm performance. Such an arrangement of SCI is too abstract to reveal the essence of the effectiveness of various SCI practices. This arrangement might be one of the main reasons for contradictory findings in previous SCI and firm performance studies. For instance, environmental uncertainty had a varying effect on the efficacy of internal and external integration. Thus, it is necessary to explore the effect of SCI on firm performance at a more detailed level. In this study, the researcher will identify the extent and content of SCI and explore its contributions in improving organizational performance under different levels *Iyer (2009) and Wong et al. (2016)*.

1.2. Statement of the problem

The extensively practiced dimensions of supply chain integration by the organization might be taken as an opportunity for the performance achievement that is equivalent to the designed strategy. Adversely, narrowly practices of the supply chain integration dimensions would be lead to a substantial adverse effects of slight performance outcome that happened as a result of inadequate responsiveness and flexibility, high uncertainty and inventory levels, and long cycle and lead times in the supply chain.

However, different literatures about the organization's practices of integration were revealed as there have been gaps of integrations by this firm. For example, the Ethiopian Government reports that 7000 trucks are available for transporting food aid. Truck carriers operate in a quasi-private capacity due to the need to shunt (temporally warehouse) food aid, and increasing wait times witnessed at the ports. The Ethiopian government and Ministry of Transportation still possess significant influence over the truck industry while the government has privatized its formerly public fleet. the carriers will compete and bid on business as in a free market if unrestricted. The WFP contracts with transport truck carriers to move its cargo from ports to extended delivery points (EDPs). It is important to note that the contracted transportation carriers which sometimes called "dedicated" are differs from the typical U.S. version of the definition of a dedicated fleet. While these carriers are contracted to transport WFP cargo, they are also allowed to move other buyer's goods when not employed by the WFP to pick-up and transport food aid. Trucks may not always be immediately available to transport the WFP' s food aid when requested as carriers are not dedicated fulltime. When the WFP offered a 25% premium on market rates for a truly dedicated fleet, the WFP received preferential treatment from carriers, allowing for more immediate transport of its cargo. Recently, however, the Ethiopian Government enforced more parity in transporting goods from the Djibouti port, precluding the WFP from paying this premium (Kim, 2010).

Moreover, of the WFP five main components of the project, transport contracting was a big challenge. Until recently, a separate tender was launched each time transport was required, so that at least one transport tender was released every working day. Over 300 tenders were handled per year, each covering 70 to 80 locations and about 20 transporters. Due to the sheer volume of data that had to be managed in the bidding process, analysis was difficult and rates fluctuated drastically, resulting in a huge impact on operations (Deliver, 2012).

The WFP's one key way that can reduce supply chain inefficiencies and bottlenecks in the process is to integrate inter-organizational relationships and information flows (i.e., both information sharing and technology integration) with multiple partners given the challenges facing the transportation of food aid in Ethiopia. The WFP has to implement greater integration channels within the supply chain which will increase the chain's responsiveness, reliability, quality, Innovation, delivery and flexibility to dynamic business world.

Therefore, this study explored the extent of supply chain integration dimensions practices, the relationship between supply chain integration and the organizational performance, and the roles of supply chain integration for the organizational performance in the World Food Programme (WFP) and respectively to bridge those gaps of the supply chain integration in this humanitarian organization.

1.3. Research Questions

- What are the extent of supply chain integration dimensions?
- What are the relationships between supply chain integration and the organizational performance?
- What are the roles of supply chain integration on organizational performance?

1.4. Objective of the Study

In this section, both the general and specific objectives of the study which were analyzed in the results and discussions part are separately elaborated.

1.4.1. General objective

The objectives of the study is about to analyze the roles of supply chain integration on organizational performance of World Food Program (WFP).

1.4.2. Specific Objectives

Specific objectives of the study are:

- ✓ To examine the dimensions of supply chain integration with respect to internal integration, external integration, information integration, supplier integration, customer integration and measurement integration.
- ✓ To analyze the relationships between supply chain integration and the organizational performance with the respect to internal, external, information, supplier, customer and measurement integrations, and non-financial performance (Responsiveness, Reliability, Flexibility, Quality, Innovation, and Delivery) respectively.

- ✓ To assess roles of supply chain integration on organizational performance related to the internal, external, information, supplier, customer and measurement integrations of supply chain, and on that of non-financial (Responsiveness, Reliability, Flexibility, Quality, Innovation, and Delivery) organizational performance of the World Food Program (WFP).

1.5. Significance of the study

The problem stated above is that current performance of supply chain is not yielding the planned results in terms of quality, time and service level in the desired level. The purpose of this thesis is to identify the reasons for such development and to highlight the theoretical frameworks which could improve organizational performance especially in terms of service, time and quality level in the future.

This study is important in helping the organization to follow appropriate integration in order to enhance proper supply chain integration of humanitarian organization; this will increase the chain system efficiency as well as effectiveness that have had a drawback in performance achievement. It also helps students and other scholars to gain knowledge in terms of information attained during this study. Finally, the study is a boost to the academic body of knowledge, for researchers; while scholarly, it is very helpful as a reference material on the subject, useful for further study.

1.6. Scope of the Study

The topics covered under this research included role of supply chain integration dimensions, such as supplier integration, information integration, external integration, internal integration, customer integration, and measurement integration on organizational performance. The other delimitation will be made on the subject of the study; the study addresses only employees who work under supply chain (i.e., Procurement), logistics, administration, finance, IT, and Food Security Programme departments; it doesn't consider the view of another partners in the supply chain, and other Programme departments that are in the organization which are not part of the chain. The geographical scope of the study covers the country office of the organization, Addis Ababa.

1.7. Limitation of the study

The study examines the role of supply chain integration for the organizational performance of the world food programme. The time and resource constraints have limited the researcher's investigation study subject along geographical scope as well as his dare to move beyond single organization.

1.8. Definition of terms

In the sub-sections here under, the researcher defined conceptual definition of supply chain integration and organizational performance, and also operational definition of key indicators of supply chain integration respectively.

1.8.1. Conceptual Definition

- Supply chain integration: the degree to which an organizations strategically collaborates with its supply chain partners and collaboratively manages intra-and inter organization processes (Flynn, *et al.*2010).
- Supply Chain: 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 ultimate consumer (Ivy wigmore, 2013).
- Supplier partnership: a commitment over an extended time to work together to the mutual benefit of parties, sharing relevant information and the risks and rewards of the relationship (H. Deshpande, 2017).
- Firm performance: The concept of organizational performance is the comparison of an organization's goals and objectives with its actual performance in three distinct areas: financial performance, market performance, and shareholder value. Financial performance refers to an organization's results with regard to return on investment and return on assets. The market performance refers to a company's ability to make and distribute their outputs in the most cost effective way and to set a price that returns a reasonable amount to suppliers. In addition, market performance refers to the ability of a company to meet the demands and expectations of consumers regarding the good or service produced. Some organizations also measure market performance with regard to how great a share of the market they possess relative to their competitors, and some measure their ability to achieve social responsibility (or stewardship of the environment and responsibility to the community). Finally, shareholder value refers to the value of

what a person holding shares in the firm possesses. These three measures determine whether an organization is meeting its goals (Jameadows 2017).

1.8.2. Operational definition

- **Internal integration:** Internal integration is defined as the strategically aligned and coordinated internal processes and functions for the purpose of achieving maximum performance of an organization (Kumar, V., Nwakama, E., Garza-reyes, J. A., Rocha-lona, L., & Lopez-torres, G. C., 2017).
- **External Integration:** The ability of two or more companies to develop shared connections that serve to guide their interactions when working together (i.e., external relationship management) (Close, 2011).
- **Information integration:** Information integration refers to the coordination of information transfer, collaborative communication and supporting technology among firms in the supply chain Leuschner, Rogers and Charvet (2013).
- **Supplier integration:** Supplier integration is the back down to the suppliers with product development, flexibility of order of fulfilment, supply of high quality products, process and specification change information, technology exchange and design support (Baharanchi, 2011).
- **Customer integration:** The integration of customers in the supply chain is the opportunity of having an overview of the requirements and customer's specific needs as the advantage of serving them better (Lotfi, Z., Sahran, S., & Mukhtar, 2013).
- **Measurement Integration:** It is the performance assessment of the supply chain as a whole that also holds each individual firm or business unit accountable for meeting its own goals (Scheinbaum, 2011).

1.9. Organization of the study

The first chapter provided an introduction to this research. Relevant supply chain, supply chain management, supply chain integration and organizational performance theories have been discussed; and the problem statement, research questions, and objectives of the research have been presented. This chapter provided a background to the research; the research theoretical and practical significance; scope and limitation of the study also adopted.

The second chapter is the literature review carried out under this research. It provides a detailed discussion of relevant theoretical arguments on SCI (internal, supplier, LSP, external and customer) and organizational performance. Illustrates the theoretical framework, which captures the research questions under investigation. The conceptual framework builds on the literature review carried out. Accordingly, the gaps in the literature will be identified and presented.

The third chapter is the methodology part that presents a discussion on the type and design for the proposed research especially adapted from the previous studies, the subject/participant of the study, the sources of the data, the data collection instruments forthcoming employed, the procedures of data collection and the method of data analysis.

The fourth chapter presents the result discussion and interpretation carried out under this research. This includes the data collected, managed and prepared for the initial descriptive analysis. This chapter also provides a discussion on the reliability and validity of the data. Lastly, the findings of the data descriptive analysis are also presented and discussed.

The fifth and last chapter includes summary, conclusion and recommendations. This chapter underlines the research theoretical and managerial contribution. It also presents a section on the research limitations and recommendations on the direction for future empirical studies (expanding the concepts investigated under this study).

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

2.1. Introduction

This chapter focuses on the literature review as conducted by the researcher. It includes a review of the various studies that have been conducted by other researchers relating to the need for integration of SC partners and the performance of both humanitarian and commercial organizations. Among the areas reviewed include: supply chain integration, supply chain integration in humanitarian organizations, supply chain integration and organizational performance, the drivers of supply chain integration, the benefits of supply chain integration. The chapter also provides the research gaps identified and a comprehensive conceptual framework.

2.2.Theoretical Framework

The theories of supply chain management, organizational performance and perspectives of supply chain integration have been reviewed in the following sub-topics of this section.

2.2.1. Supply Chain Management

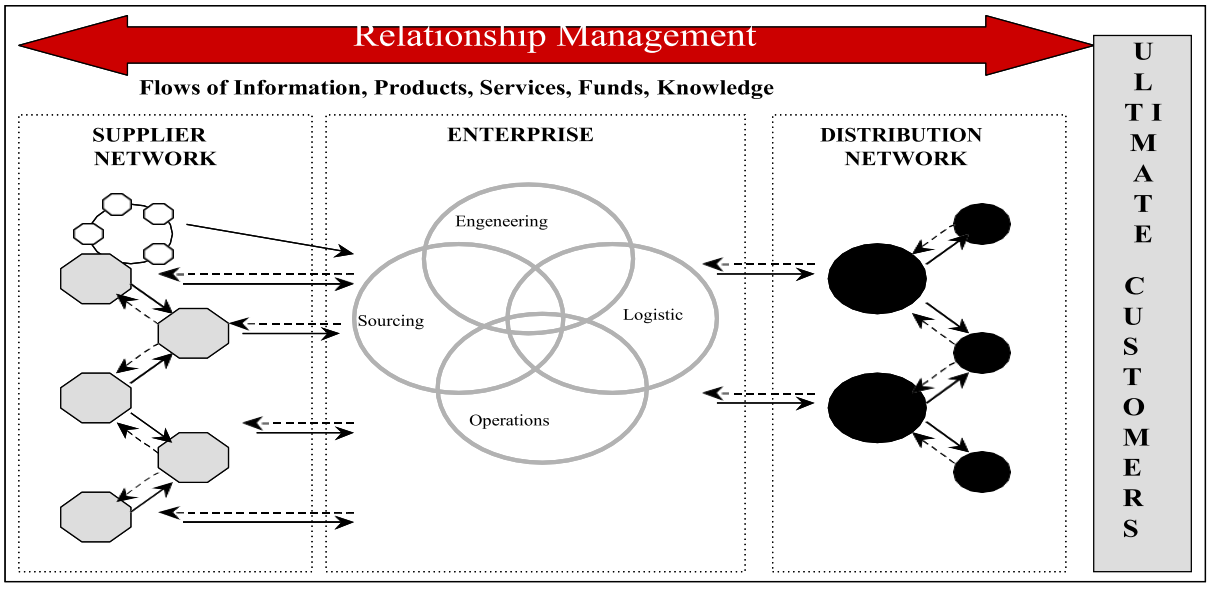
Today many organizations are forced to increase their global market share in order to survive and sustain growth objectives. At the same time, these same organizations must defend their domestic market share from international competitors. The challenge is how to expand the global logistic and distribution network, in order to ship products to customers who demand them in a dynamic and rapidly changing set of channels. Strategic positioning of inventories is essential, so that the products are available when the customer wants them (Handfield, *et al.* 2002).

Domenica (2002) also claims that supply chain should actually be efficient and effective. In this case, efficient means to minimize resource use to accomplish specific outcomes; and effective, in terms of designing distribution channels. Efficiency is measured by delivery performance, product quality, backorders and inventory level, whereas effectiveness is measured by service quality and the service needs. Long-term competitiveness therefore depends on how well the company meets customer preferences in terms of service, cost, quality, and flexibility, by designing the supply chain, which will be more effective and efficient than the competitors'.

To understand the term of supply chain management in depth, first the term of supply chain will be explained, than management and the role of management as a base for complete definition of supply chain management. According to Mentzer, *et al.* (2001) the definition of supply chain is more consolidated as definition of supply chain management. In his paper, he tried to make a common definition of a supply chain, based on a comprehensive research study conducted by several co-authors. They came up with the following definition: "A supply chain is defined as a set of three or more entities (organizations or individuals) directly involved in the upstream and downstream flows of products, services, finances, and/or information from a source to a customer".

Supply chains are essentially a series of linked suppliers and customers until products reach the ultimate customer (Handfield, 2002). Supply chain of a company consists of an upstream supplier network and its downstream distribution channel. Organizations can be part of numerous supply chains. Depending on how complex the supply network is, Mentzer (2001) has defined three types of supply chains: (1) direct supply chain, which consists of a company, a supplier, and a customer, (2) extended supply chain, which includes suppliers of the immediate supplier, as well as customers of the immediate customer, (3) ultimate supply chain, which includes all the organizations involved in all the upstream and downstream flows.

Figure 2.1 Supply Chain or Supply Chain Network



Source: Handfiled, 2002.

Although industry and academia have investigated the concept of SCM for the last decade, there is still no consistent definition of the concept. As a result, there is generally a lack of consistency in meaning and clarity across the diverse definitions of supply chain management available in the literature. Some of them are listed further on.

Bolumole (2000) has concluded that supply chain management offers an integrated philosophy for managing organizations' purchasing and distribution processes based on a marketing perspective. In her study, Persson (1997) concluded that supply chain management is a homogenous management concept. The overall objective of supply chain management is to contribute to improvements in the company's bottom line or profitability. Related objectives include reducing the costs mainly by reducing the inventory level and increasing the revenues by improving customer service through coordination and integration along the material flow, win-win relationships and end customer focus. These imply that in order to achieve the objectives of supply chain management individual companies should coordinate and integrate their activities with other companies along the material flow in win-win relationships and focus their joint effort on the end customer.

The supply chain consists of all stages involved, directly or indirectly, in fulfilling a customer request. The supply chain not only includes the manufacturer and suppliers, but also transporters, warehouses, retailers and customers. Within each organization, such as a manufacturer, the supply chain includes all functions involved in fulfilling customer requests. These functions include new product development, marketing, operations, distribution, finance, and customer service. Supply chain management involves the management of flows between and within stages in a supply chain to maximize total profitability (Chopra, 2001).

Supply chain management is the integration and management of supply chain organizations and activities through cooperative organizational relationships, effective business processes, and a high level of information sharing to create high performing value systems that provide member organizations sustainable competitive advantage (Handfield, 2002).

Although definitions of Supply chain management differ across authors, they can be classified in three categories (Mentzer, 2001): a management philosophy, implementation of a management philosophy, and as a set of management processes.

2.2.2. Supply Chain Integration

Globalization and rapid development of information technology are changing today's inter-organizational relationships. Firms increasingly depend on a complicated network of global partners to deliver products in the right quantity, at the right place and time, and under persistent cost pressures (Datta and Christopher, 2011). However, long and complex supply chains are usually slow in responding to changes, and hence, they are vulnerable to supply chain disruptions. One way to solve this problem is to successfully manage supply chain integration (SCI), which requires cross-firm business processes with appropriate levels of information sharing, operational coordination, and partnerships (Leuschner, Rogers, and Charvet, 2012).

Integration has become a very important and integral part of any organization. Integration of technology, people, business and processes has become crucial for survival of any organization and especially if the organization needs to find a competitive edge in the current global economy (Arend and Wisner, 2005).

The importance of supply chain integration between a firm and its suppliers and also its customers is increasing. As is expected with any business relationship, the association should be expected to be long term and the strength of the relationship depends upon the behavior of the members in the supply chain. To succeed with integration, there must be a clear understanding of the material bought and the core competencies, and experience of the supplier, the customer being served and the organization itself. The integration quality is always dependent upon a relationship between the organization and supplier (Wood and Brewster, 2005). Developing integration between the firm and its suppliers or a firm and its customers, aims at improving specific areas of a firm's performance, leading to savings in quality inspection costs and better integration of design efforts to meet the customer's needs (Mudambi and Schründer, 2006).

Integration among partners in a supply chain that focuses on both the customers and suppliers should be reviewed in its entirety and on a regular basis so as to develop cooperative attitudes in the chain (Goh, Lau, and Neo, 2006). In addition, integration is crucial in building trust sothat the supply chain mechanisms can function effectively. More collaborative systems in integration are characterized by a closer and more mutually supportive relationship between the firm, its supplier and its customers. To enhance the integration relationship, there is need for flexibility among the partners, a broader regulatory and social environment that is

characterized by both formal structures of mediation and informal networks of trust and collaboration (Panayides and Lun, 2009).

2.2.3. Organizational Performance

Every organization exists to achieve a particular goal. Organizational performance is the final achievement of an organization and contains a few things, such as the existence of certain targets, has a period of time in achieving these targets and the realization of efficiency and effectiveness (Blowfield and Dolan, 2010). Thus, efficient and effective organizational performance could be achieved through good practice of supply chain integration with all of the partners in the chain; this study acknowledges the six different dimensions of integration (external integration, internal integration, supplier integration, customer integration, information integration, and measurement integration) as an instrument that might have an impact to measure the organizational performance with respect to key indicators, such as responsiveness, reliability, flexibility, quality and delivery. Performance provides the basis for an organization to assess how well it is progressing towards predetermined objectives, identify areas of strength and weakness and decide on the future initiatives with the goal of how to initiate performance improvement (Vanweele, 2006).

Organizational performance includes multiple activities that help in establishing the goals of the organization, and monitor the progress towards the target (Kopczak and Johnson, 2003). It is used to make adjustments to accomplish goals more efficiently and effectively. Organization performance is what business executives and owners are usually frustrated about. This is because even though the employees of the company are hard- working and are busy doing their tasks, their companies are unable to achieve the planned results. Results are achieved more due to unexpected events and good fortune rather than the efforts made by the employees. However, for any business to be successful, functions must be defined and accomplished. It is important for an organization to develop strategies that are designed around the skills that would enhance the performance of the organization. Organizational performance is affected by myriad factors including: the lines of communication and command connecting these individuals (organizational authority structure and the degree of centralization), the resources and information to which the individuals have access, the nature of the task faced by the individuals, and the type and severity of the crisis under which the individuals operate (Richard and Devinney, 2005).

Financial measures do not convey the full picture of a company's performance, especially in today's competitive environment where companies are competing in terms of product, quality, delivery, reliability, after-sales service and customer satisfaction. None of these services is measured by the traditional responsibility accounting system, despite the fact that they represent the major goals of world-class manufacturing companies. Many companies are using both qualitative and quantitative non-financial indicators such as; quality, lead time, number of customer complaints and warranty claims, delivery time, non-product hours, and system down time (Bozec, 2005).

Although non-financial measures are increasingly important in decision-making and performance evaluation, companies should not simply copy measures used by others. The choice of measures must be linked to factors such as corporate strategy, value drivers, organizational objectives and the competitive environment. In addition, companies should remember that performance measurement choice is a dynamic process - measures may be appropriate today, but the system needs to be continually reassessed as strategies and competitive environments evolve (Sharma *et. al.*, 2005).

In conclusion, organisations which do not check adequately how well they are performing in their processes, procedures and plans experience low performance and higher customer dissatisfaction and high employee turnover (Artley and Strol, 2001).

2.2.4. Performance of Humanitarian Organizations

Humanitarian organizations are at the frontline of a given response whenever disasters strike. When such organizations respond fast enough, they are seen to be efficient and effective in disaster response. As Davidson (2006) states, when such organizations do not however respond fast enough in the eyes of the media and the local government, then the blame that is placed on such organizations tarnishes their names and reputation. This hence affects the organization's base and donors. Without donor funding, a humanitarian organization's entire ability to continue its operations is in serious danger.

The question of how to measure the performance of humanitarian organizations has recently become a hot topic mainly because of the disasters that have occurred and the ever-evolving nature of humanitarian aid. Davidson (2006) continues to argue that the lack of centrally captured data, limited information, organizational culture and lack of coordination are the key factors for the inability to answer such a question.

Humanitarian organizations heavily rely on such SCM functions procurement, logistics, distribution and warehousing in the delivery of the required goods, works and services to the beneficiary. In 2005, Hurricane Katrina flooded New Orleans, LA, leaving residents without access to food or clean water. As a result, a massive rescue of the inhabitants had to be made. During the first weekend of the rescue effort, 1.9 million meals and 6.7 million liters of water were delivered by humanitarian aid agencies and NGOs. (Gravois, 2012).

A humanitarian organization's ability to improve the lives of the world's most vulnerable communities therefore relies heavily upon its ability to integrate and coordinate its SCM functions so as to get the desperately needed goods, works and services to the targeted communities. Rodman (2004) states that without sustainable, efficient, transparent and well coordinated procurement and logistics processes, the humanitarian sector is at risk of unnecessary costs and delays which put their vision, efforts and determination to better the lives of the less fortunate, at risk, hence poor performance.

2.2.5. Perspectives of Supply Chain Integration

The theoretical writing on SCI effort is diversified speaking to different points of view. The differing writing reflects the flexible idea of SCI effort including an assortment of thought processes and targets. This investigation looks at SCI effort from various viewpoints: Economic perspective, e.g. uncertainty reduction, transaction cost economics, resource based view, relational view, and extended resource based view; trust based logic; and learning and information point of view. These different viewpoints give us experiences into the nature, forms, contents, and forces of supply chain integration effort. (M. Cao and Q. Zhang, 2013)

1. Uncertainty Reduction Perspective

Uncertainty has for some time been seen as a predominant possibility and is one of the basic determinants of high exchange costs (Williamson 1975). Diminishing vulnerability by means of information flow is a key target in SCI effort (M. Cao and Q. Zhang, 2013). According to M. Cao and Q. Zhang (2013), market and technological vulnerability can viably be managed through organizations where supply chain partners share data of sudden occasions and advancements. The serious correspondence between supply chain partners additionally diminishes behavioral vulnerability (e.g., advantage) (Wuyts and Geyskens 2005). On the off chance that data isn't shared between accomplices, non-straightforward request examples will cause request amplification and bullwhip impact. This prompts poor service levels, high inventories, and incessant stock-outs (M. Cao and Q. Zhang, 2013). Hence, when confronting uncertainty, firms will have a tendency to team up with accomplices in building long haul

relationship.

2. Transaction Cost Economics

Transaction cost economics (TCE) is a standout amongst the most influential hypotheses on IOS utilize and between firm joint efforts. TCE recommends that a firm compose its cross-authoritative exercises to limit generation costs inside the firm and exchange costs inside business sectors. As indicated by TCE, the choice to utilize either vertical reconciliation or market components relies upon the relative observing costs that emerge from limited reasonability and vulnerabilities because of accomplices' self-premium and advantage. TCE conceives that IOS utilize can lessen exchange costs (e.g., observing expenses) by specific resource speculations, which decrease sharp practices. Markets and progressive systems are identified as two methods of sorting out. Coordinated effort rises as the third option. SCI keeps the issues emerging from the two markets and chains of importance. It helps firms diminish the advantage and checking costs that are inbuilt in advertise exchanges through process coordination and common trust, in this way lessen the likelihood that accomplices act sharply. SCI additionally helps firms abstain from disguising a movement that they don't exceed expectations at. Regardless of TCE's handiness, numerous researchers see its constraint. TCE is limited to the efficiency basis for SCI effort. SCI may shape for different reasons, for example, information creation. What's more, hierarchical settings (e.g. culture, power, reliance, and trust) that may influence cooperative endeavors are accepted away. In all actuality, few SCI efforts are simply in view of the thought of economic costs (M. Cao and Q. Zhang, 2013).

3. Extended Resource-Based View

Traditional RBV accept firms must possess or completely control the assets to make esteem. In the broadened asset based view (ERBV), asset availability, the privilege to utilize assets or make the most of their related benefits, empowers firms to accomplish favorable circumstances. Broadens the RBV by clarifying how interconnected firms in dyadic cooperation/partnership consolidate outside assets and interior asset blessings to accomplish upper hand for the central firm. As per (David, 2015), the upper hand of a central firm partaking in an organization together/joint effort incorporates four components: (1) inside lease (2) appropriated social lease (3) inbound overflow lease, and (4) outbound overflow lease.

Inside lease can be removed from the central firm's own mutual and non-shared assets. Appropriated social lease can be separated just from the mutual assets of the two

accomplices. Inbound overflow lease is the lease produced from the accomplice's shared and non-shared assets through information spillage, between firm learning, relative absorptive limit, and disguise of the accomplice's practices, though outbound overflow lease comes about because of the exchange of benefits from the central firm to the accomplice. The mix of inward lease, inbound overflow lease, and outbound overflow lease frames private benefits for the central firm. Its upper hand relies upon its private benefits and appropriated social lease (i.e., appropriated regular benefits). Conversely, synergistic favorable positions are joint upper hand and originate from a social lease, a typical benefit that collects to community accomplices. This kind of lease can't be created separately by either collective accomplice. What's more, (David, 2015) demonstrate reaches out earlier research on joint esteem creation in dyadic union by considering one-sided collection of overflow leases that deliver private benefits.

4. Resource Dependence Theory

Asset reliance hypothesis (RDT) contends that firms must trade with their surroundings to pick up assets (M. Cao and Q. Zhang, 2013). It fixates exclusively on assets that must be gained from outside hotspots for a firm to survive or flourish. The requirement for outer assets makes firms rely upon others. To effectively oversee conditions, RDT contends that firms must pick up control over essential assets to lessen dependence on others and increment others' dependence on them. It implies firms should attempt to expand their energy in their surroundings (M. Cao and Q. Zhang, 2013). Supply network integration effort gives such an approach to helping firms to achieve these objectives.

Broadening the rationale of asset reliance hypothesis from the firm level to the inventory network level, store network accomplices all in all are less depending on their surroundings through assets sharing. Firms work together with their production network accomplices to procure indispensable assets and to expand their energy in respect to other supply chains. In any case, the power might be uneven between accomplices on account of various responsibility for. This unbalance of energy may make conflicts between accomplices if not very much oversaw. Min *et al.* (2005) recommend the capable firm in the production network should address the less capable accomplice's issues in commonly beneficial courses of action to reinforce the aggressive energy of the store network in general.

In view of RDT, IOS are the instruments that, by effectively getting to accomplices' assets, increment the production network's control over different firms or chains. While RDT has its

benefits, it has impediments in clarifying production network coordinated effort. RDT just contends that firms need to trade with their surroundings to get essential assets since no firm is independent. Exchange costs, skill advancement, and learning openings are not thought about (M. Cao and Q. Zhang, 2013).

5. The Relational view theory

Turkmen (2013) have efficiently inspected between hierarchical lease creating forms. They distinguished four sources that create social rents: Investments in connection particular resources, between firm learning sharing schedules, the consolidating of correlative assets and viable administration components. Firms can accomplish supernormal benefits by building up a particular association with their unions through these procedures. The point is to move far from a safe distance advertise connections, since contenders can undoubtedly copy this trade relationship since there is nothing one of a kind about the associations amongst purchaser and merchant. What takes after from the joint endeavors of the banding together firms in fashioning a relationship past a safe distance, is that rents are mutually produced and possessed by collaborating firms. Social rents are then piece of the system or dyad. A social lease is characterized by Turkmen (2013) as: "A supernormal benefit together produced in a trade relationship that can't be produced by either firm in disconnection and must be made through the joint peculiar commitments of the particular collusion accomplices".

6. Trust Based Rationalism

Trust based rationalism (TBR) employs a behavioral assumption of trustworthiness, fair play, responsibility, and altruism instead of betrayal, self-interest, and opportunism. It focuses on collaboration and cooperation rather than politics and conflicts as the primary interaction modes. Trust, relationship, and social capital are the key concepts in TBR. Trust is viewed as a critical determinant in establishing a relational mode of governance structure (M. Cao and Q. Zhang, 2013). Continuing supply chain collaboration is based more on trust and equity than on monitoring and control capabilities (Kim *et al.* 2005).

Social capitals and relationships between partners arise from the foundation of trust. Trust reduces transaction costs and even eliminates the need for detailed contracts and governance mechanisms. While opportunism may create short-term benefits, it incurs costs in the long run because it lacks of reputation and trust. Trust helps supply chain partners create a win–win strategy for collaborative advantage (M. Cao and Q. Zhang, 2013).

7. Learning and Knowledge Perspective

Another rationale for explaining supply chain collaboration is that firms establish partnerships to exploit opportunities for knowledge creation and organizational learning. Through knowledge creation and organizational learning, firms strengthen their competitive positions. In the face of high environmental uncertainty, it is important to have access to a broad and deep knowledge base in order to respond quickly to changing circumstances. Since great diversity of knowledge is distributed across the supply chain, collaboration provides an ideal platform for learning and facilitates partner-enabled market knowledge creation. Learning that takes place in supply chain collaboration can be divided into two kinds of activities: exploration and exploitation. Exploitation is to improve existing capabilities while exploration is to discover new opportunities (e.g., improve absorptive capacity). How much a firm can learn through supply chain collaboration is determined by the firm's absorptive capacity, ''the ability to recognize the value of new, external knowledge, assimilate it, and apply it to commercial ends.''. A firm's ability to learn is based on the employee quality, knowledge base, organizational culture, and the quality of IT systems. Supply chain collaboration can also be an effective means of transferring knowledge and new technical skills across organizations. A firm may find it difficult to buy a particular skill in the marketplace because of its tacit nature. It may acquire new skills and competencies by collaborating with firms that excel in that area. However, the level of privileged information sharing needed for collaboration, in fear of risky information leakage, is not adequately addressed by the learning and knowledge theory (M. Cao and Q. Zhang, 2013).

2.3. Empirical Literature Review

The empirical studies of supply chain integration and organizational performance were reviewed under the following sub-sections as the background of previous studies.

2.3.1. Supply Chain Integration

An efficient, integrated supply chain plays a major part in the success of the business strategies of its constituent companies. It is now recognized that, in many cases, competition is between supply chains rather than individual companies. Getting the product and service to the end consumer when they want it is critical. Consequently, the partner companies should work closely together to define and execute a supply chain strategy which will both satisfy customer needs and allow them to make an adequate return. The biggest challenge facing companies today is not the internet, by itself, or globalization or stakeholder needs. Rather, the greatest challenge is the integration of supply chains from vendors through manufacturers and distributors to satisfy end customers and obtain value for those companies. Supply chain management is the planning and flow of materials and products between a number of companies to deliver goods and services to end consumers. The insight examined in this research is that business supply chains are more likely to survive, grow and profit if they integrate the development of new products with a balanced supply chain in which each link combines to provide the goods that consumers want. To get full benefit from a supply chain it is necessary to link all the partners involved so that goods and services flow effectively to consumers. This is achieved by working collaboratively with customers, suppliers, trading partners and service providers. The overall aim is to create a flow of products exactly as required by customers, responding dynamically to changes in their orders. (Sadler, 2007).

Supply chain integration (SCI) is taken into account to be a comprehensive conception applied to varied links among functions within a firm however additionally among organizations (Chen *et al.*, 2009). There's a typical accord among researchers that because of the advanced international business setting, it's of a strategic importance for organizations to integrate activities each outwardly and internally (Danese *et al.*, 2013). In previous literature, Supply chain integration is associated to three main aspects like scope of integration, areas to integrate, and level of relationship (Näslund and Hulthen, 2012).

1. Scope of integration

Hulthen (2016) stated that the twofold scope of integration which of the foremost considered normal forms are external integration and internal integration.

Whereas each of these scopes signify a significant feature of Supply chain integration, there is an unlimited pact of overlay among them. In line with the meaning of Supply chain management, from suppliers to manufacturers to customers, and the supply chain operations reference (SCOR) model with three interconnected main processes, from source to make to delivery, it is arguing that the various scopes of Supply chain integration can be finally summarized to three main scopes: internal integration, suppliers' integration (SI), and customers' integration (CI). External integration (EI) holds together SI and CI in one. Information sharing, communication, demand coordination, relationship building, and so on have been generally combined into the II and EI ideas (Kumar *et al.*, 2017).

- **External Integration**

Related to external integration, the previous literature acknowledges two directions of integration: downstream integration (also referred to as forward integration) with customers and upstream integration with suppliers (also referred to as backward integration). Despite of the advantages acknowledged by many authors that as well as many tiers into the integrative relationships encompasses a positive result on performance of all concerned partners (i.e. increased quality and repair level, lower costs), in point of fact the two relationships are the foremost prevailing (Hulthen, 2016).

- **Internal Integration**

Before external integration with partners beyond the organization, the first stage of supply chain integration should be beginning at the organizational level within the various functions as well as departments of the firm. Internal integration is defined as the strategically aligned and coordinated internal processes and functions for the purpose of achieving maximum performance of an organization; it advances the organization's performance through decreasing expenses and restricting departmental capacity which wouldn't maximize the overall goals within the organization (Kumar *et al.*, 2017).

- **Supplier Integration**

According to Kumar *et al.* (2017), in order to advance customer service to serve better, customer-supplier integration process is the invaluable focus of the firm on strengthening the relationships between customer and supplier for the reason of achieving supply chain surplus. When suppliers are participated concerning information of the demand forecasts, production and inventory levels decision making of the organization, the organization and suppliers have a working partnership that maximize the benefits of both suppliers and the focal firm by reducing lead times, and in advancing innovations and quality.

- **Customers Integration**

The integration of customers in the supply chain gives the opportunity for firms to have an overview of the requirements and their specific needs giving them the advantage of serving them better. Integrating customers in a supply chain is centered on drawing information from customers such as their buying patterns, their preference for products and their ability to purchase products which would then be used in making better decisions during the manufacturing process or sales to customers. When firms collaborate with their customers, they are able to respond in a quick and efficient manner with their customers improving their order fulfilment as well as improving visibility (Lotfi, Z., Sahran, S., & Mukhtar, 2013).

- **Information Integration**

According to Leuschner, Rogers and Charvet (2013), information integration refers to the coordination of information transfer, collaborative communication and supporting technology among firms in the supply chain. The next dimension in the progression is when management integrates activities in addition to the sharing of information. Information integration has been found to be a necessity for firms looking to integrate with their customers and suppliers. Information integration however is not just restrained to the efficiency and application of technology. It requires the inputs and role playing of people, technological systems to originate, sort, process, and disperse information to the designated location at the right time for effectual decision making process. When information is shared across the supply chain, data can be collected in real time as closer communications are then created with other members in the supply chain which would lead to improved customer service and improved demand forecasting. Integration in the supply chain has been found to improve performance of the chain therefore it is important for partners in the supply chain. (Kumar *et al.,* 2017).

- **Measurement Integration**

It is the performance assessment of the supply chain as a whole that also holds each individual firm or business unit accountable for meeting its own goals (Scheinbaum, 2011).

2. Layers of Integration

Layers of integration lined in previous supply chain integration literature refers to, for instance, what to integrate and with whom to integrate. There are four areas of integration in supply chain which may create a chain of partnerships for parties which are collaborated through supply chain management; these areas are: flows (physical, data, financial), processes and activities, technologies and systems, and integration of actors (structures and organizations) (Hulthen, 2016). According to Barber (2008) elaborations, integration of each tangible and intangible parts must be integrated (i.e. processes, procedures, data, knowledge, innovations, and strategies).

The first task is to create a flow of information between chain partners so that physical flow takes place exactly as required. The second task is a series of physical movements: procuring parts, manufacture of the finished product and its delivery to the customer. The third task is the management of chains, and the fourth task is chain leadership. According to Hulthen (2016), it's very important to spot key processes to be joined with suppliers and customers. To integrate with all supply chain partners isn't possible and economically excusable. Thus, companies usually section their external relations and develop cooperative relationships with some supply chains partners whereas they keep arm's length with others (Lummus *et al.*, 2008).

3. Level of Integration

Constructing on the systematic ideas, reflect the connections among organizations in the supply chain. Such interactions between supply chain allies have a main impact on in what way the chain functions, by what means it flows goods or services to customers. The level of internal integration commences with a starting point of functional silos with freelance functions. within the next level the freelance silos are unit cross-functionally integrated through processes. As a result, the internal integration is affected to full integration involving seamless flow across structure functions. Then, the integration holds suppliers and customers, said as external integration. (Hulthen, 2016).

Concerning the external integration, not all business relationships with SC partners ought to be cooperative, and it's acceptable to be concerned in an arm's-length relationship if such behavior is suitable (Gimenez and Ventura, 2005). the extent of external integration could vary from arm´s length ones to collaboration and strategic alliances. Spekman *et al.* (1998) differentiate between four levels of external integration: open market negotiations, cooperation, coordination and collaboration (see Figure 2).

The open market negotiations, additionally referred to as Arm's length relationships, represent a pure exchange style of relationship between supply chain partners. There aren't any joint commitments or operations that mean that the link is terminated once the exchange ends (Shah *et al.*, 2002). in a very cooperation style of relationship, the stress is placed on data sharing or assets sharing between SC partners and distinctive areas of joint interest (Power, 2005). It's a primary stage concerning demand harmonization and cross-functional relations, taking part of relevant parties, strong kind of responsibilities (Ajmera and Cook, 2009).

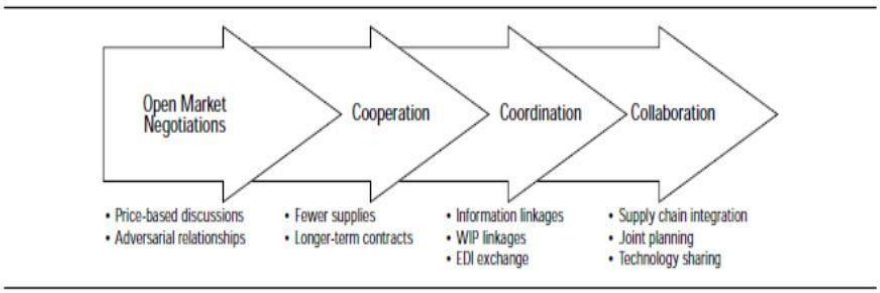


Figure 2.2 Transition from open-market negotiations to collaboration

(Spekman *et al.*, 1998)

Coordination, on the opposite hand, needs SC partners to figure conjointly to realize materials and data flows potency across the supply chain through aligned higher cognitive process to realize the general supply chain objectives (Sahin and Robinson, 2002).

The very best level of relationship refers to collaboration. It engages reciprocal relationships within which each partners possess equal power to avoid forced solutions by the opposite part (Ho *et al.*, 2002). Normally, it comprises joint designing and acting of activities like supplying, development and strategic designing (Ajmera and Cook, 2009).

2.3.2. Supply Chain Integration in Humanitarian Organization

According to Dullaert, (2017), the significance of operative administration of humanitarian supply chains is beyond doubt. However, there are numerous challenges that are faced by humanitarian supply chains, poor logistics infrastructures, sluggish coordination and response, disjointed technology and information systems, and high worker turnover are the most common one. Similarly, humanitarian supply chains are also surrounded by the utmost agile supply chains in existence. In order to attain the humanitarian goals which have been deal with the great risks in the humanitarian organizations, a well-managed supply chain is vital.

The excellence of collaboration that occurs between partners to attain an efficient, united and effective system is due to Integration. Supply chain integration is the step of strategic collaboration of an organization with its supply chain partners in managing both inter and intra organizational processes. The primarily objective of supply chain integration is to deliver ultimate value to the customer while attaining efficient and affective flows of products and services, information, money and decisions. (Anvar, 2013).

Numerous scholars have suggested that the humanitarian firms take lessons from the commercial organizations. It has, for example, been claimed that the humanitarian sector would well attain its objectives with superior supply chain collaboration and coordination, a part with which the commercial organizations have important practice. Even though such collaboration is often realized as beneficial, humanitarian firms also face complications in handling collaborative efforts, plus collaboration with the private companies. (Dullaert, 2017).

These complications may stalk from contradictory aims and responsibility, absence of enthusiasm to share data, obstacles of technology, structural conflict, cultural conflict or deficiency of performance metrics. The commercial world, which is extremely knowledgeable in these areas could, some argue, benefit humanitarian firms advance the humanitarian supply chain by taking pro of the assets and expertise of the commercial sector. (Beamon and Balcik, 2008).

Cross-organizational integrations have been argued as a way to settle the difficult cross-sectoral glitches that top the skill of a single organization. A cross-sector integration largely comprises the government (public), business (private), and non-profit (civil society, communities) sectors. By engaging in a cross-sector integration, an organization can narrow

its limits and realize results that are hard to be gained lonely. Though the clue of applying cross-organizational integration in the humanitarian firms have been advised by various examiners, the conversation on how such integration might profit humanitarian supply chains has not yet been studied exhaustively. Although the prospective contributions of the integration to the humanitarian organizations are anticipated to be encouraging and substantial, there is still a lack of research on how such contributions would benefits the humanitarian organizations (Dullaert, 2017).

2.3.3. Supply Chain Integration and Organizational Performance

The rising level of competition that exists among firms globally has brought a shift to do more than just strategy formulation and implementation but to go beyond that and seek partnerships with other firms which would lead to competitive advantage in the market place. Over the years, manufacturing firms have focused on developing strategies that would bring about the much desired level of change and operational performance in the organization. However, firms have realized that creating strategies along with integrating internal functions, suppliers and customers in a business relationship is the proper model for achieving competitive advantage. This created the platform for supply chain Integration (SCI) as practice being adopted by firms that were striving to improve firm performance with closer relationships being built among other links in the supply chain. The shift came with organizations moving from their previous strategies of vertical integration to being an association of firms that collaborate to procure, manufacture and supply products and services to their customers. supply chain integration as a concept is concerned with the synergy that exists between the internal functions of a firm and its external activities across its supply chain that leads to organizational performance. (Kumar *et al.*, 2017).

Several kinds of integration have been suggested in the existent writings, such as Internal Integration, Customer Integration, Suppliers Integration, technology and planning, measurement, relationship integration, and strategic integration. (Yanfang Huo1, Xinyue Jiang1, 2008).

Reflection of the scope of supply chain integration is vital to know the way that the different extents of integrations influence performance of the organizations, and also how each type of integration influence one another. Though some researches recommend supply chain integration as a unidimensional concept, others split supply chain integration into Internal Integration and External Integration, some accept extra scopes. Despite the fact that each of

these scopes signify an essential feature of supply chain integration, there is a countless overlap among them. Even if by considering the meaning of supply chain management that claim the various scopes of supply chain integration can be eventually condensed to three main scopes: Internal Integration, Suppliers Integration, and Customers Integration, (which is from suppliers to manufacturers to customers, and the supply chain operations reference (SCOR) model with three linked major processes, from source to make to delivery) (Huo, 2013).

This study tries to combined different views of dimensions of supply chain integration that many authors claimed on the classification in to Internal Integration, Suppliers Integration, Customers Integration and also extra classifies as External Integration. Information sharing, technological sharing, and LSPs.

Ascertaining the article, many investigations have elected organizational performance as one of the central concepts and have been demarcated differently. Organizational performance is problematic to measure and there is no commonly known meaning. But, Organizational performance deal with the way an organizations thriving to attain both the market oriented and financial oriented goals. This definition covers both financial performance and operational performance. Previously, organizational performance has been evaluated by many researches from financial and market criteria perspectives, such as return on investment (ROI), market share, profit margin on sales, the growth of ROI, the growth of sales, the growth of market share, and overall competitive position. This study is thought to habit both financial and non-financial indicators to measure the organizational performance. A constructive relationship among SCI practices and the organizational performance have been confirmed by several studies. (Wijetunge, 2016).

A journal of the literature on industry and organizational performance recommends an extensive kind of views concerning firm performance. Chen and Paulraj (2004a) claimed that financial performance should be the foremost idea of enterprise performance since the principal objective of a business is to create profits for shareholders, and to save life in case of humanitarian organizations. The idea of financial performance has been recycled broadly as a basic theory of organizational performance. But, other scholars have stated out the restrictions of merely trusting on financial performance in SCs. For instance, identified that a statistical performance idea may not define a system’s performance sufficiently and will be ambiguous and difficult to use for simple qualitative appraisals. (Huo, 2013).

While it is not within the range of this study to argument the qualities of every performance idea, given the difficulty of the performance idea matter, the researcher mostly follows one principle when we choose performance concepts, namely, a balanced approach. Such an approach, which uses a combination of qualitative and quantitative concepts (if possible) and a broader conceptualization of the performance idea, is important to present a perfect image of organizational performance, as it has been encouraged by various scholars (Gunasekaran *et al.,* 2003). For instance, some Supply Chain Integration studies have articulated both operational and financial performance as an indicators of organizational performance (Wijetunge, 2016).

In this study, the researcher uses two broad categories of performance concepts: financial and non-financial performance. And non-financial performance is further seen from two perspectives: Customer Oriented Performance which is defined as the organization's performance in serving its customers, that is, how the organization's performs for a key customer in areas of quality, flexibility, delivery, and so forth. Suppliers' Oriented Performance refers to the organization's perception of its key supplier's performance in serving the organization, such as the performance level of the key supplier as perceived by the organization in areas of quality, flexibility, delivery, and so on. While customer oriented performance and supplier oriented performance focus on the operational aspects of companies (Huo, 2013).

The possibility to instantly assess the overall result of SCI on firm performance whether the diverging construct size varieties alter the nature, or magnitude of the broader relationship, the researchers made the dignity between distinctive dimensions of integration that explicitly focused on the operational aspect: the progress of shared operational movements with consumers and/or suppliers. SCI defined as the degree to which a manufacturer strategically collaborates with its supply chain companions and collaboratively manages intra- and inter-group processes, stressing the strategic nature of SCI. Seeing that of such divergent definitions, a more comprehensive classification of constructs is crucial. Considering the fact that SCI requires investment, the objective of administration is to look a return on that funding. All articles in the sample demonstrated this connection. In keeping with the theoretical lenses, the view SCI as a resource, which enables the firm to attain an aggressive competencies and hence results in comparably higher efficiency. After reviewing these diverging, though related, views and analyzing the big pattern of empirical reports accrued

for the meta-analysis, three dimensions had been developed to examine and distinction the exact effects of SCI on firm performance. (Leuschner, Rogers and Charvet, 2013).

When administration in two organizations primary participates in SCI, they share information and know-how (Kim and Lee, 2010; Olorunniwo, and Li, 2011). As a result, (1st) knowledge integration refers to the coordination of knowledge switch, collaborative communique and aiding science amongst organizations in the supply chain. The subsequent dimension in the development is when management integrates events in addition to the sharing of knowledge (Kim and Lee, 2010): (2nd) Operational integration refers to the collaborative joint action development, work approaches and coordinated decision making among organizations in the supply chain. The final dimension built on the previous two and drives beyond activities by specializing in attitudes (Vander Vaart and van Donk, 2008): (3rd) Relational integration refers to the implementation of a strategic connection among organizations in the supply chain characterized with the aid of believe, dedication and long-time period orientation (Dyer and Hatch, 2006).

A considerable positive linkage between SCI and firm performance is found by several empirical studies whereas some also reveal substantial adverse effects, and the magnitude of the linkage varies considerably. To well comprehend this relationship, performance effects collected in the meta-analysis is shortened and assessed across three types. Financial firm performance is measured using either revenue minus cost-based measures, such as profitability and return on assets, or purely revenue-based measures, like sales and market share. Customer-oriented performance consists of measures related to an improvement in customer satisfaction and customer loyalty, or closely related constructs. Finally, operational performance consists of improvements in key competitive capabilities including cost, quality, delivery, flexibility and innovation. Analyses were conducted both on aggregate firm performance and each separate dimension. Several studies found a significant relationship between SCI and firm performance. Thus, SCI is positively correlated with different measures of firm performance. (Leuschner, Rogers and Charvet, 2013).

2.3.4. Drivers of Supply Chain Integration (SCI Drivers)

The supply chain integration functions of planning and coordinating procurement, inventory management and logistics can be viewed as a mechanism that has allowed goods and commodities to be distributed flexibly across space, time and institutional framework. Competitive advantage requires making the end-to-end process across the value chain from

requisition to payment as fast and as efficient as possible. Accelerating supply chain integration processes requires automation, although some processes will require human intervention at certain points, especially authorizations and exception handling, increasing the velocity of business requires automating as much as possible; even after automating processes, companies need to monitor and manage them in real time to continually improve and optimize the processes (Keller Seru Lisanza, 2013).

supply chain integration has been found to improve performance of the supply chain. In the study of 125 manufacturing firms in the UK, it was found that SCI and information sharing leads to improved supply chain performance. A study found that integrating with a firm's suppliers and customers along with the firm's competitive strategy will lead to improved operations performance. The relationship between supply chain linkages involving customer, supplier, and internal processes of the firm with performance has also been studied. Many firms seek to enter into new markets to boost their profitability. This has driven them to seek for better strategic relationships to give them the platform for such marketing opportunity to a larger customer network. The quality and safety have driven firms to integrate and increase the amount of information they share with their suppliers to ensure that there is visibility across the supply chain so that food products material sourcing can be tracked. Firms want to create value activities that would reduce their operational costs and boost profitability. This would require internal and external integration of their processes (Kumar *et al.*, 2017).

The study made on 122 manufacturing firms operating in the US found out that internal integration is the main strategy for cost reduction in the supply chain while supplier integration leads to better operational performance. Some performance measurements such as improved customer service, internal efficiency, demand flexibility, and product development are all indicators that firms try to improve and do so through SCI. (Hugos, M. H., 2011).

Another important driver for SC integration is the need for SCM agility. SCM agility requires an integrated infrastructure that enables rapid deployment of new solutions while leveraging existing IT investments. An agile SCM within humanitarian aid can't afford to rip and replace the existing systems. It requires real-time connectivity between people, systems, and functional entities. The need for cost reduction is also a very important driver of SCM integration. SC integration reduces wastages and costs and increases value addition. Two other important benefits that organizations gain from integrating their SCM functions are

increasing successful delivery to the end user and improving overall quality and efficiency through optimization of organizational processes. (Keller Seru Lisanza, 2013).

2.3.5. Benefits of Supply Chain Integration

Integration level has a positive influence on performance outcomes; according to most of SC integration studies, the view that the level of SC integration improves quality and operating performance holds the same. SC integration influences customer responsiveness and manufacturing performance by means of the basic association among sourcing and degree of manufacturing objective achievement through empirical proof of basic causal associations in a supply chain. According to a survey of industrial equipment distributors, that strategic integration results in improved economic return for the organization. Empirically identified that manufacturers with the widest extent of SC integration should have the highest levels of performance improvements. Specifically, they found a strong relationship from the largest level of supplier and customer integration to market share and profitability. It is suggested that integration of several functions at different organizational levels achieve above average financial and performance results. (Kim, 2009).

Both internal and external integration of operations is generally required for improved performance. simultaneous integration of internal and external operational processes infers the attainment of superior logistics performance, neither of which is a stand-alone advantage. Rodriguez *et al.* (2004) specify that higher logistics performance is interrelated to simultaneous integration of internal and external operational processes. According to Kim (2009), the greater the level of integrated upstream and downstream coordination the better the benefits proved empirically that external integration with suppliers and customers has a direct positive influence on market share, while internal integration has an influence on financial performance.

Supply chain performance is an important component in supply chain design and analysis. A number of performance measures are important for the evaluation of supply chain effectiveness. These measures can be either quantitative or qualitative. The objective of an integrated supply chain strategy is to synchronize the requirements of the final customer with the materials and information along the supply chain in order to find the balance between customer service and costs. So the researcher argues that supply chain performance has two dimensions: (1) service performance and (2) financial performance. Customer service is defined as the coverage of many service dimensions that are both general as well as

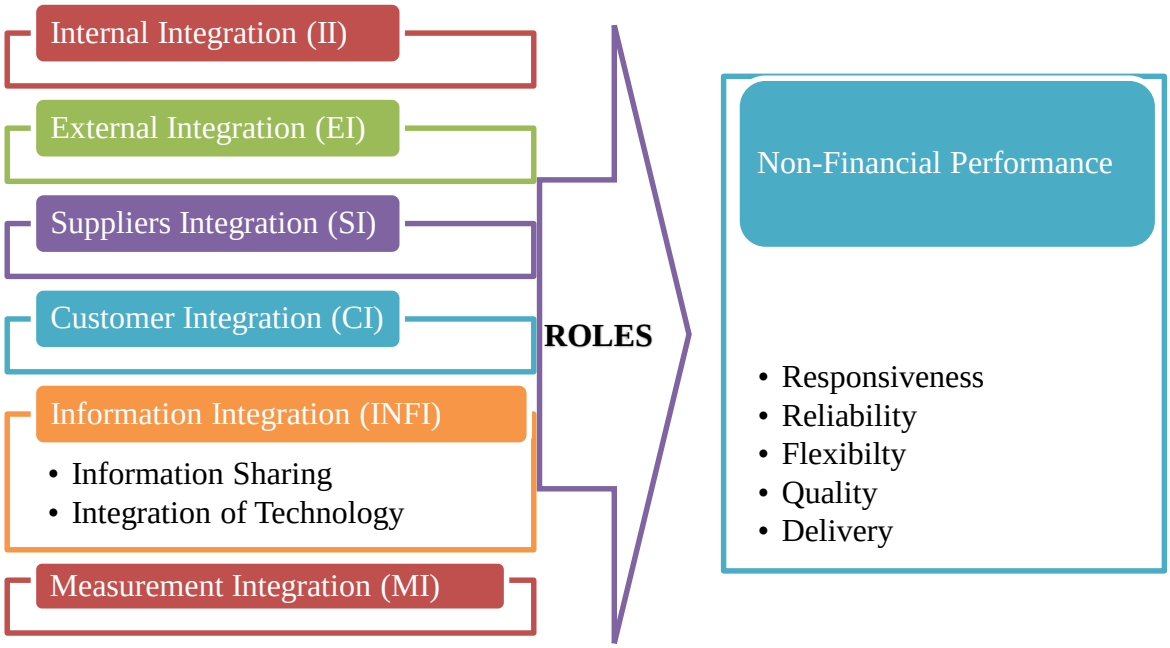
manufacturing service objectives. Financial performance is defined by the traditional performance measures which include Return on Assets (ROA), Return on Investment (ROI) and Return on Sales (ROS). Costs are a very important part of these financial performance indicators. Although two dimensions of firm performance are defined, the study recognized that at the end, financial performance is the most important performance. The study goes further in defining the performance of a supply chain and identifies four dimensions: (1) cost, (2) quality, (3) flexibility and (4) time performance. Both identify one financial dimension of supply chain performance. However, the researcher specified the financial dimension into different performance indicators. And classified the service performance as qualitative and the financial performance as quantitative. (Bas Leenders, 2010).

According to keller Seru Lisanza (2013), organizations also integrate their SCM functions because they need to collaborate with other organizations and better their relationships with key suppliers. Collaboration enables a SCM to focus on joint planning, coordination, and process integration between the firm and its suppliers, customers, and other partners such as the logistics providers. In addition to cost reduction, collaboration offers the advantages of reduced lead times, increased reliability and responsiveness.

2.4. Conceptual Framework

Supply Chain Integration **Organizational Performance**

Figure 2.3 Conceptual Framework of Supply Chain Integration



Source: *Scheinbaum, A. C., 2011; Hussein et al., 2014.*

2.5. Research Gaps

Supply chain integration has been the topic of literatures in the field of logistics and supply chain management believing that it is a crucial for existence of any organizations whether the firm is seeking for profit by sustaining a competitive advantage or striving to save human life and alleviating human suffer.

Hence, previously accomplished studies are mainly focused on commercial organizations, and supply chain integration of humanitarian organizations are largely ignored. Even, those researched studies on humanitarian supply chain integration have not considered supply chain integration from every dimensions, such as external integration, internal integration, supplier integration, customer integration, information integration, and measurement integration. Some of them has considered external integration and internal integration while others seen it from external integration, internal integration and information integration. So there are needs to be seen supply chain integration in humanitarian organization from all dimensions.

CHAPTER THREE

3. RESEARCH DESIGN AND METHODOLOGY

This section presents an overview of the methods that will be used in the study. Areas covered including the research approach and design, population and sample, data sources and types, ethical consideration, and data analysis.

3.1. Description of the Study Area

The World Food Programme is the world's largest humanitarian agency fighting hunger worldwide. In emergencies, the agency gets food to where it is needed, saving the lives of victims of manmade and natural disasters. After the cause of an emergency has passed, WFP uses food to help communities rebuild their shattered lives (WFP, 2015).

WFP is part of the United Nations system and is voluntarily funded. Created in 1961, WFP pursues a vision of the world in which every man, woman and child has access at all times to the food needed for an active and healthy life. WFP works towards that vision with sister UN agencies; the Food and Agriculture Organization (FAO) and the International Fund for Agricultural Development (IFAD) as well as other government, UN and NGO partners. WFP reaches more than 80 million people with food assistance in 75 countries each year (WFP, 2015).

WFP started its operations in Ethiopia in 1965. Currently, the country programme has 14 offices located at the Addis Ababa, Hawassa, Dessie, Dire Dawa, Dollo Ado, Gambella, Assosa, Jijiga, Degehabour, Gode, Kebridehar, Mekelle, Nazereth, and Semera with a total of 774 staffs. The guiding principle of WFP in Ethiopia is to support government programmes by addressing hunger through direct food assistance where it adds value and support to the government’s capacity. WFP development interventions in the country are relevant to and consistent with the national policies and programmes as well as with the Millennium Development Goals (MDGs) and UNDAF priorities. WFP’s main government partners are the Disaster Risk Management and Food Security sector (DRMFSS) of the Ministry of Agriculture, Ministry of Health, Ministry of Education and Ministry of Finance and Economic Development. WFP’s programmes range from relief, which is provided during emergencies, to activities designed to strengthen the resilience of households against future shocks, such as droughts and floods (WFP, 2015). WFP is now using a targeted approach to

relief assistance for people and communities in crisis, including social safety nets and livelihood support projects, some of which are provided on a seasonal basis when needs are greatest, such as between harvests. The organization is also concentrating on nutritional programming.

WFP's country programme of activities has consistently focused on food deficit areas, addressing land degradation, human resources development, urban HIV/AIDS, refugees and humanitarian relief. The Country Office has a well-developed vulnerability assessment mapping (VAM) unit which uses data to support emergency food needs assessment and the planning of development assistance. WFP is also managing the UN Humanitarian Air Service (UNHAS).

For food, WFP operates on three levels: Headquarters, regional and local. WFP's regional and country offices have delegated authorities to carry out their own procurement up to established financial limits. Purchases beyond these limits are conducted by WFP Headquarters Procurement (WFP, 2015).

In WFP, distributing safe and healthy food commodities is a collaborative effort throughout the entire supply chain, which involves suppliers, buyers, and governments at country, regional, and global levels. WFP endorses a comprehensive food safety and quality management system to control and manage the quality of the food delivered, from primary production to food distribution and final consumption. The system promotes adherence to standards in the form of food specifications, monitoring of vendors' performance (food suppliers, laboratories and inspection companies), improving the nutritional value of the food commodities and specialized nutrition products, and capacity building of actors throughout the supply chain. The World Food Programme's (WFP) Purchase for Progress (P4P) pilot program connects smallholder farmers (SHF) to markets using WFP's position as a major staple food buyer. WFP purchases more than 75 percent of its food annually from developing countries (WFP, 2015).

3.2. Research Approach

The study followed an inferential research approach, which is part of quantitative research approach in this study, to achieve its purpose. Therefore, this study focused on formulating research questions and objectives of the study that have been achieved throughout the processes of the study.

3.3. Research Design

The study was designed in explanatory cross-sectional research design (descriptive and inferential statistics). The descriptive study allowed the researcher to describe those data and helps to know the event that has been taken place whereas explanatory study examined the relationships and associations between variables (Independent and Dependent Variables).

3.4. Population and Sample

The population of the study was World food Programme (WFP) based in Ethiopia, country office. The World Food Programme is the biggest employer, but the study focus on logistics, procurement, finance, p4p, IT, administration, and food security units. However, with the Addis Ababa office population, it was proposed that a census respondent carried out with target population of Administration unit, Logistics unit, Procurement unit, Finance unit, IT unit, Purchaser for Progress Unit (P4P), and Food Security Programme, PSNP, as participants. The targeted population for the study comprised as of below table 3.1.

Table 3.1: Number of target population

UNITS	POPULATION
Administration unit	**21**
Logistics unit	**29**
Procurement unit	**11**
Finance unit	**17**
IT unit	**18**
Food Security Programme, PSNP.	**8**
Purchaser for Progress Unit (P4P)	**6**
Total	**110**

Source: *Survey Data, 2018*

The questionnaire was circulated to **110** all employees who are in the above different teams. The study was done based on Census. Therefore, the population for this study was 110 respondents of the organization.

3.5. Data Sources and Types

The focus of the study was on observing of current practices so that the significance of primary data undoubtedly analyzed. The secondary data also collected to augment the studies. The researcher collected data by administering a questionnaire, and other instruments. The sources of the data were an employees of the organization for primary data; whereas different journal articles, books, pamphlet, and others will be sources of secondary data.

3.6. Method of Data Analysis

The data was obtainend through the questionnaires and first checked for completeness. Whether the questionnaire found correctly filled and fitted for analysis, coded. All the data entered into statistical package for social sciences, and analyzed based on descriptive and inferential statistics. The descriptive statistics used included the frequencies, mean scores, standard deviation, percentages and ratios. Then was presented using tables for easier interpretation. The Reliability Analysis will be made using Cronbach's alpha (α) for the measure of internal and scale consistency (reliability).

A multiple linear regression model was done to establish the role of the six independent supply chain integration variables on the performance of the organization. To establish the relationship, a regression analysis was established. For each supply chain integration variables, an overall mean was computed and matched with the mean of performance of the organization. From this relationship, the model was generated to determine the relationship using the Multiple linear regression analysis assumptions, such as the relationship between the Y and each of Xi's is linear, those of nonexistence of multi-collinearity (the independent variables are not related among themselves), and another assumptions include those of homoscedasticity and normality distribution. The regression equation assumed the following form:

$$Y = \beta o + \beta 1\ X1 + \beta 2\ X2 + \beta 3\ X3 + \beta 4\ X4 + \beta 5\ X5 + \beta 6\ X6 + €$$

Where:

Y is organizational performance;

βi (i = 0 – 6) is the regression coefficient;

X1 – External Integration

X2 – Internal Integration

X3 – Suppliers Integration

X4 – Customers Integration

X5 – Information Integration

X6 – Measurement Integration

€ – Error Term or Unexplained variables not explained by the model

The F- test was conducted to determine the significance of the regression while the coefficient of determination, R2, used to determine how much variation in Y is explained by X. This was done at 95% confidence level, and correlation analysis carried out to find the degree and direction of the relationship between dependent variables and the independent variables.

3.7. Ethical Consideration

For the data collection processes, an appropriate ethical clearance was obtained from Addis Ababa University. Confidentiality of the information also ensured for the respondents by not recording any identifying things like the that of the respondents name and etc.

While conducting the study, respondents were informed that the research and collected information using instruments would have been used for the academic purpose only. Additionally, respondants were confirmed that the data collection process carried out whenever they are a willing to cooperate from their side. Moreover, they were promised that the copy of the research would has been given them as soon as the thesis finished before it is published.

CHAPTER FOUR

4. RESULTS AND DISCUSSIONS

4.1. Introduction

The objective of this study is to establish the relationship between supply chain integration and organizational performance of World Food Programme in Ethiopia. The aim of this chapter is to present and interpret the result, and also made discussions on the findings of the study.

4.2. Response Rate

Out of a total of 110 questionnaires that were distributed, 98 are returned. The returned questionnaires signify a response rate of 89% and this response rate would be adequate and enough to draw analysis.

4.3. Data Reliability and Validity

Selecting scales to include in the study is important to find scales that are reliable. There are a number of different aspects to reliability. One of the main issues concerns the scale's internal consistency. This refers to the degree to which the items that make up the scale 'hang together'. One of the most commonly used indicators of internal consistency is Cronbach's alpha coefficient. Ideally, the Cronbach alpha coefficient of a scale should be above .7.

Table 4.1 Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	**N of Items**
.789	**29**

Source: *Survey Data, 2018*

Each 29 items are included in the above reliability statistics; these were the questionnaire from 1 to 29. The list of items included in the reliability statistics test are listed down in the below item total statistics table 4.2.

Table 4.2 Reliability Item-Total Statistics

Item-Total Statistics				
Items List	**Scale Mean if Item Deleted**	**Scale Variance if Item Deleted**	**Corrected Item-Total Correlation**	**Cronbach's Alpha if Item Deleted**
Sourcing and tendering decisions are easily made due to SC Integration and information sharing.	106.01	46.959	.166	.788
There are external SC integration that fastens flows such as, physical and funds.	106.22	45.619	.248	.785
Distribution and delivery is made at the right time and place due to SC integration, information sharing and coordination.	106.08	44.096	.362	.780
There are integration of objectives, planning, and resources with external organizations.	106.27	45.517	.253	.785
Monitoring stock movement has been made easier as a result of the collaboration between procurement, logistics and warehouse/ inventory management.	106.18	44.832	.348	.781
There are internal integration of functions and activities.	106.24	45.445	.287	.784
With an integrated SC technologies and systems established, inter and intra organizations' communications are optimized.	106.14	47.629	.034	.792
Due to information and technology integration, there are access of tracking performances of SC partners.	106.14	42.021	.533	.770
A database of suppliers is easily maintained as a result of SC Integration.	106.07	47.345	.055	.793
With an integrated suppliers supply chain, logistics services are improved.	106.11	46.905	.090	.792
SC Integration has provided the organization the ability to quickly and easily relate with suppliers.	106.15	45.451	.349	.782
Supply chain integration is led to a better supplier relationship management.	106.29	44.928	.428	.779
orders are easily processed as a result of supplier integration.	106.17	42.990	.452	.775

SC Integration has assisted in improving the quality of goods, works and services offered to the beneficiary.	106.28	44.903	.279	.784
The speed of service delivery has been enhanced due to the supply chain integration process	106.49	46.417	.158	.789
Customer integration has enabled to deliver services easily and quickly.	106.31	44.318	.322	.782
The speedy customer collaboration has been maintained as a result of SCI.	106.34	44.576	.335	.781
Due to information and technology integration, there are access of tracking performances of SC partners.	106.07	44.830	.371	.780
With an integrated information and measurement SC, supply chain analysis has been done.	106.17	45.629	.283	.784
With an integrated suppliers supply chain, logistics services are improved.	106.20	43.154	.524	.772
There are external SC integration that fastens flows such as, physical and funds.	106.10	40.278	.649	.761
With an integrated SC technologies and systems established, inter and intra organizations' communications are optimized.	106.09	42.352	.541	.770
Distribution and delivery is made at the right time and place due to SC integration, information sharing and coordination.	106.28	44.449	.444	.777
With an integrated SC technologies and systems established, inter and intra organizations' communications are optimized.	106.08	45.107	.238	.787
The firm has maintained cost reductions	105.79	46.995	.067	.794
Uncertainty has been minimized in the receiving of products and services.	106.38	45.413	.128	.797
Cycle time reduced for some goods like that of assembled.	106.00	46.680	.251	.786
Reduced Inventory level in the organization.	106.07	46.232	.226	.786
Shorter lead times needed for delivery of orders	106.12	46.315	.204	.787

Source: *Survey Data, 2018*

The reliability test result (.789) proved that there were internal consistencies in those data constructed in questionnaire. There are four other columns of output. The two first after the item names show the change to the overall mean and variance if that particular item is omitted from the scale. However, the last two columns provide useful information and should now be inspected. The Corrected Item-Total Correlation column shows the degree to which each item correlates with the total score for the scale. Low correlations suggest the item is measuring something different to the scale as a whole. All the correlations are high and positive in this study. The right-hand column (Alpha if Item Deleted) shows the alpha value of the scale with that item omitted. What is looking for are the items, which if removed, would increase alpha (increase the internal consistency of the scale). The reliability of the scale used in the study (0.789), could be improved by deleting only the 26th question: Q26 alpha ⇒ .797. If any other items were to be deleted, the reliability of the questionnaire would actually go down. In this particular case it is not worth deleting the question. The difference is so slight that it could be just due to chance. Note that if you omitted this one item then all values would change because the overall scores obtained would change due to this omission.

Validity of research tool has three Components, such as construct validity, content validity and internal validity. Of all three types of validity, this study tests construct validity which deals with the consistency of the questions with the responses intended. This validity is assured by structuring the questionnaire according to the specific objectives.. The critical requirement to achieve validity is to measure the constructed data to ensure free from measurement error *(Mat Roni, 2014)*. Therefore, the constructed data in the questionnaire were valid that proved by the above reliability test result with insignificant (less than .3) measurement error.

4.4. Demographic Information of the Respondents

4.4.1 Gender

The Gender disaggregation of out of the 98 respondents of the study, 58 percent of the participants of the survey result is male while female respondents are account for 42 percent of the study.

Table 4.3 Demographic Information

Gender	Frequency	Percent
Male	**57.0**	**58.2**
Female	**41.0**	**41.8**
Total	**98.0**	**100.0**
Education	**Frequency**	**Percent**
Diploma	**15**	**15.3**
Degree	**37**	**37.8**
Masters	**34**	**34.7**
PhD	**12**	**12.2**
Total	**98**	**100.0**
Title	**Frequency**	**Percent**
Assistant	**2**	**2.0**
Associate	**51**	**52.0**
Senior Associate	**44**	**44.9**
Manager	**1**	**1.0**
Total	**98**	**100.0**
Experience	**Frequency**	**Percent**
2-5 years	**6**	**6.1**
6-10 years	**47**	**48.0**

>10 years	**45**	**45.9**
Total	**98**	**100.0**

Source: *Survey Data, 2018*

4.4.2 Educational Background

The respondents that are participated in this study have diverse educational background as it can be seen in the below Table 4.2.

Most of them, 72.5%, were a graduate of first degree and second degree. Those who have first degree are accounted for 38% of the total. PhD holders are only account about 12% of the respondents under study whereas diploma is the remained 15 percent of the responses.

4.4.3 Position in the Organization

The respondents were asked to indicate the positions they held, and there are also different compositions of the titles. They were provided with options to choose from; the findings in the table above indicated that associate, senior Associate and manager account for a total 98% of the respondents. This confirms that the respondents of this study were knowledgeable professionals who are well familiar with supply chain integration and organizational performance issues.

4.4.4 Experience

The research also sought to establish the duration that the respondents have had by the time of the study. The results illustrated in the table 4.2 confirm that 46% of them have been in operation for more than 10 years whereas 48% is from 6-10 years. This is an indication that most of the employees have had more than six years of experience. Hence, they would have been an experienced worker to measure the relationship that exists between supply chain integration and organizational performance in their firm.

4.5. Descriptive Analysis of Extent of Supply Chain Integration

The first objective of this study is to examine the extent of supply chain integration in the organization The participants were asked to respond on the extent of supply chain integration in their organization, and rated their responses on a five point Likert- type scale where:

5-to a very large extent, 4-to a large extent, 3-to a moderate extent, 2-to a small extent, and 1-to not occur. The findings were presented in the subsequent sub themes. In the process of examining of the data, standard deviation was used. Small standard deviations (relative to the value of the mean itself) indicate that data are close to the mean whereas a large standard deviation (relative to the mean) indicates that the data points are distant from the mean. The mean is a poor fit of the data. Standard deviation is a measure of how well the mean represents the data *(Field, 2009).*

Table 4.4 Supply chain integration extent, and organizational performance

Independent Variables	N	Mean	Std. Deviation
External Integration	98	3.8138	.33925
Internal Integration	98	3.7806	.30091
Suppliers Integration	98	3.8000	.34937
Customers Integration	98	3.6071	.49351
Information Integration	98	3.8214	.43524
Measurement Integration	98	3.8095	.50654

Source: *Survey Data, 2018*

According to the survey result, the mean of all the independent variables (External Integration, Internal Integration, Suppliers Integration, Customers Integration, Information Integration, Measurement Integration) are fall in the high extent from 3.6071 to 3.8214 for customer integration and information integration respectively. These accounts 72% to 76% of the survey measurement scale. The standard deviation of these variables have also low variance from .30091 to .50654; internal integration with the lowest deviation, .30091 whereas measurement integration is the highest deviation occurred in this result of analysis. Hence, this finding implies that there are high integrations of supply chain in the organization with three independent variables (Internal Integration, Suppliers Integration and Customers Integration) which were relatively low when compared to the remaining independent variables.

The findings of this survey result of extent of supply chain integration in the organization is substantially consistent with the results of the *Uwamahoro, 2018* that all the independent variables are with high mean values. This implied us that as there are indirect proportionality between mean values and significance level, since independent variables with high mean are produce insignificant level.

4.6. Supply Chain Integration and Organizational Performance

The second objective of the study is to determine the relationship between supply chain integration and organizational performance.

Correlation analysis is used to describe the strength and direction of the linear relationship between two variables. The correlation is used for the purpose of a relationship allows predictions to be made of one behavior from another; to demonstrate a test scale validity by

showing a significant relationship between it and another accepted scale for a related construct; to show reliability consistency of measurement on two occasions, to show internal consistency of scale items, and for theory verification use to support hypotheses that predict the relationships between variables. Pearson's Product-Moment Correlation is the best known correlation and the most used for interval data *(Beech, 2006).*

Table 4.5 Interpretations and characteristics of correlations

Interpretation	Correlation	Directions	Form	Degree
Small	0.10 – 0.29	+ve vs –ve	Linear vs Non-linear	Strength
Medium	0.30 – 0.49			
Large	0.50 – 1.00			

Source: *Beech, 2006*

The findings of the correlation matrix analysis between each indicators of supply chain integration (i.e., External Integration, Internal Integration, Supplier Integration, Customer Integration, Information Integration, and Measurement Integration) and organizational performance are shown in the table 4.6 below.

Table 4.6 Correlation Matrix

		External Integration	Internal Integration	Supplier Integration	Customer Integration	Informn Integration	Measurement Integration	Orgnl Performance
External Integration	Pearson Correlation	1	.454**	.391**	.236**	.396**	.051	.173*
	Sig. (2-tailed)		.000	.000	.010	.000	.308	.044
	N	98	98	98	98	98	98	98
Internal Integration	Pearson Correlation	.454**	1	.481**	.338**	.711**	.495**	.174*
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.043
	N	98	98	98	98	98	98	98
Suppliers Integration	Pearson Correlation	.391**	.481**	1	.191*	.342**	.078	.040
	Sig. (2-tailed)	.000	.000		.030	.000	.224	.347
	N	98	98	98	98	98	98	98
Customers Integration	Pearson Correlation	.236**	.338**	.191*	1	.342**	.058	-.159
	Sig. (2-tailed)	.010	.000	.030		.000	.284	.059
	N	98	98	98	98	98	98	98
Information Integration	Pearson Correlation	.396**	.711**	.342**	.342**	1	.674**	.154
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.065
	N	98	98	98	98	98	98	98
Measurement Integration	Pearson Correlation	.051	.495**	.078	.058	.674**	1	.465**
	Sig. (2-tailed)	.308	.000	.224	.284	.000		.000
	N	98	98	98	98	98	98	98
Organizational Performance	Pearson Correlation	.173*	.174*	.040	-.159	.154	.465**	1
	Sig. (2-tailed)	.044	.043	.347	.059	.065	.000	
	N	98	98	98	98	98	98	98
**. Correlation is significant at the 0.01 level (2-tailed).								
*. Correlation is significant at the 0.05 level (2-tailed).								

Source: Survey Data, 2018

As it can be seen from the findings of study, the Pearson correlation test conducted for external integration and internal integration, and organizational performance indicates that there is positive and small correlation between external integration and internal integration, information integration, and organizational performance with correlation coefficient of .173, .174 and .154, and significance value less than .044, .043 and .065 respectively. Adversely, there is no relationship between supplier integration and organizational performance with .04 coefficients of correlation and significance value of .347; a negative correlation of .159 and insignificance of .059 are happened between customer integration and organizational performance. The relationship between measurement integration and organizational

performance was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a moderate, and positive correlation between the two variables [r=–.465, n=98, p<.0001], with high levels of measurement integration associated with lower levels of organizational performance.

It can be concluded that the Supply chain integration and organizational performance has a small and moderate, and negative and positive relation based on Pearson correlation coefficient except with supplier integration which has no relationship with organizational performance.

4.7. Regression Analysis

4.7.1 Multiple Linear Regression Assumptions

1. Linearity Assumption

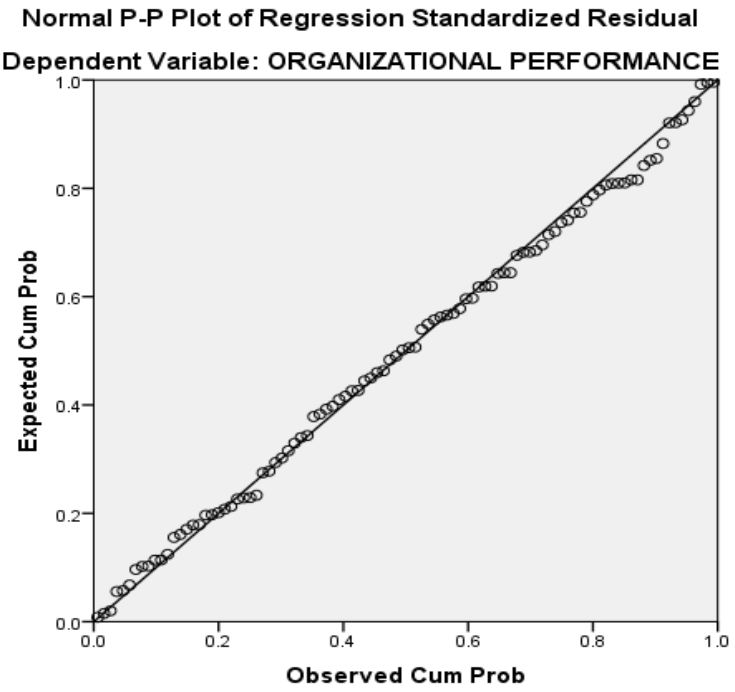
Linearity assumption states that the residuals should be linear relationship with the predicted dependent variables scores. Linear relationship between independent variables and dependent variables.

This set of assumption can be examined to a fairly satisfactory extent simply by plotting scatterplots of the relationship between each explanatory variable and the outcome variable. It is important to check that each scatterplot is exhibiting a linear relationship between variables (perhaps adding a regression line to help you with this). Alternatively, you can just check the scatterplot of the actual outcome variable against the predicted outcome. The term residual considered is the difference between outliers and influential cases a bit further *(J, 2010).*

The simple outlier influences the line to a far lesser degree but will have a very large residual (distance to the regression line). The influential case outlier dramatically alters the regression line but might be harder to spot as the residual is small - smaller than most of the other more representative points in fact. To examine the scatterplot, you can also use *influence statistics* (such as the Cook's distance statistic) to identify points that may unduly influence the model *(Wang, Rosner and Goodman, 2016).*

If it is looked at the scatterplots below, the plot of the below graph indicates that the residuals are normally distributed. Non-normal if points substantially deviate from the diagonal line.

Figure 4.1 Linear Multiple Regression Assumption



Source: *Survey Data, 2018*

2. Multicollinearity

Multicollinearity assumption states that independent variables should not be related to each other. If they are highly correlated, then multicollinearity exists High predictor-predictor correlation (r > .85) results in unstable regression model *(J, 2010).* The table 4.9 below shows that the relationships between explanatory variables, External Integration, Internal Integration, Supplier Integration, Customer Integration, Information Integration, and Measurement Integration, are below the correlation boundary line (i.e., .85) for all of the independent variables.

Table 4.7 Multicollinearity Correlation Matrix

		External Integration	Internal Integration	Supplier Integration	Customer Integration	Informn Integration	Measurement Integration
External Integration	Pearson Correlation	1	.454**	.391**	.236**	.396**	.051
	Sig. (2-tailed)		.000	.000	.010	.000	.308
	N	98	98	98	98	98	98
Internal Integration	Pearson Correlation	.454**	1	.481**	.338**	.711**	.495**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	98	98	98	98	98	98
Suppliers Integration	Pearson Correlation	.391**	.481**	1	.191*	.342**	.078
	Sig. (2-tailed)	.000	.000		.030	.000	.224
	N	98	98	98	98	98	98
Customers Integration	Pearson Correlation	.236**	.338**	.191*	1	.342**	.058
	Sig. (2-tailed)	.010	.000	.030		.000	.284
	N	98	98	98	98	98	98
Information Integration	Pearson Correlation	.396**	.711**	.342**	.342**	1	.674**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	98	98	98	98	98	98
Measurement Integration	Pearson Correlation	.051	.495**	.078	.058	.674**	1
	Sig. (2-tailed)	.308	.000	.224	.284	.000	
	N	98	98	98	98	98	98

Source: *Survey Data, 2018*

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

A more precise approach to check whether or not a given explanatory variable has a strong relationship with the other explanatory variables (an issue of multicollinearity exist in the model), Tolerance and VIF (variance inflation factor) is the good indicators. For example, Tolerance less than .1 (10%) hint at multicollinearity, and VIF (variance inflation factor) > 10 also implies multicollinearity. So that VIF must be between 1-10, otherwise VIF <1 or >10 indicates multicollinearity existence *(Ge, 2013).* The table 4.8 correlation coefficient below describes that both the tolerance and variance inflation factor (VIF) are greater than 10%, and below 10 respectively.

Table 4.8 Multicollinearity Test of Independent Variables

Coefficients[a]													
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	2.181	.474		4.598	.000	1.239	3.124					
	External Integration	.346	.105	.334	3.283	.001	.137	.555	.173	.325	.275	.677	1.477
	Internal Integration	.000	.156	.000	-.002	.998	-.310	.309	.174	.000	.000	.394	2.538
	Suppliers Integration	.033	.100	.033	.327	.744	-.166	.232	.040	.034	.027	.704	1.420
	Customers Integration	-.094	.066	-.131	-1.411	.162	-.225	.038	-.159	-.146	-.118	.808	1.238
	Information Integration	-.370	.123	-.458	-3.019	.003	-.614	-.127	.154	-.302	-.252	.304	3.293
	Measurement Integration	.529	.088	.762	6.029	.000	.355	.704	.465	.534	.504	.438	2.284

Source: *Survey Data, 2018*

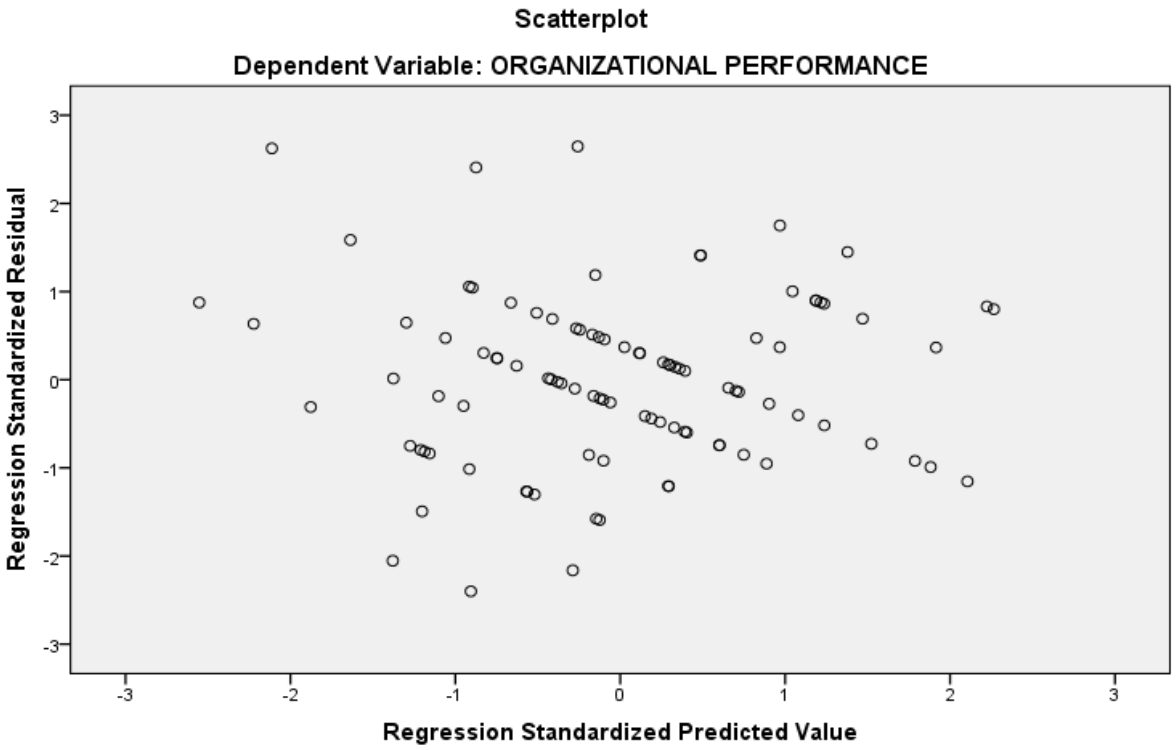
a. Dependent Variable: Organizational Performance

3. Homoscedasticity

Homoscedasticity assumption elaborates that the variance of the residuals about the predicted dependent variables scores should be the same for all predicted scores. Error variance is assumed to be the same across all values of other variable. As it can be seen from graph, the dots which are scattered evenly is the indication of a homogeneity assumption *(Mat Roni, 2014).*

It could be checked that residuals do not vary systematically with the predicted values by plotting the residuals against the values predicted by the regression model. And looking for any evidence that residuals vary in a clear pattern. Look at the following figure, the data points appeared fairly randomly distributed with a fairly even spread of residuals at all predicted values.

Figure 4.2 Homoscedasticity Multiple Regression Assumption



Source: *Survey Data, 2018*

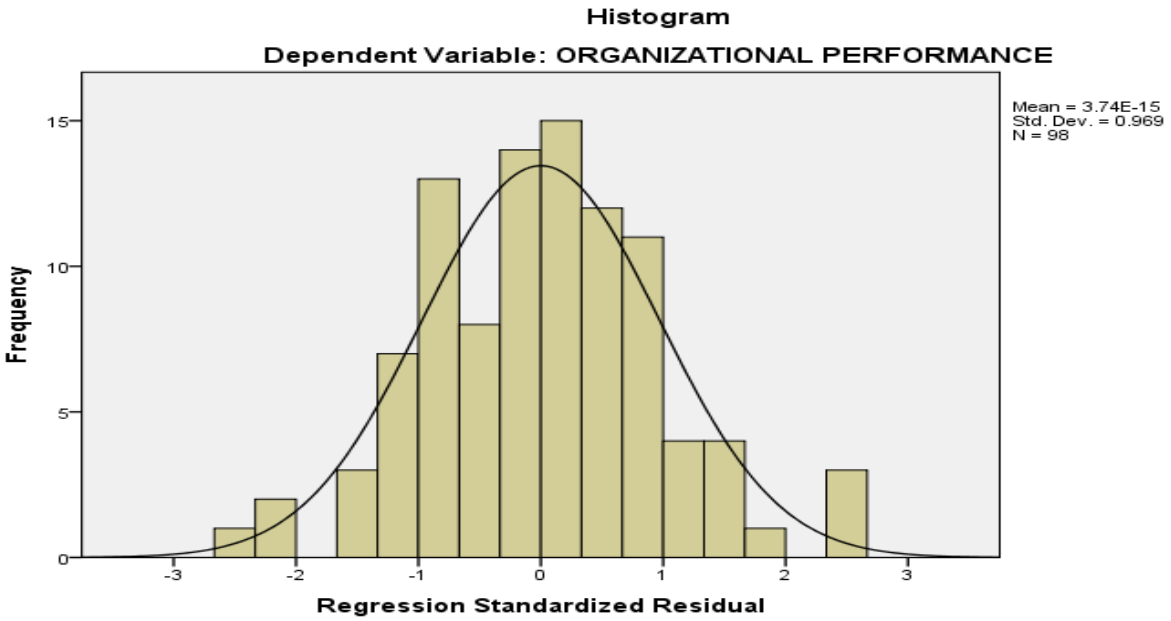
This scatterplot is a result of what a scatterplot might look like if the assumption of homoscedasticity is met. The data points seem to funnel towards both the negative of the x-axis, and also toward the positive of x-axis indicating that there is equal variability in the residuals at higher predicted values and at lower predicted values. This suggests that our model is equal accurate in estimating both lower values and higher values.

4. Normally distributed residuals

A histogram of the residuals (errors) in a model can be used to check that the residuals are normally distributed about the predicted dependent variables scores. However, it is often good to tell if the distribution is normal from just a histogram, and additionally, a P-P plot should be used as shown below figure.

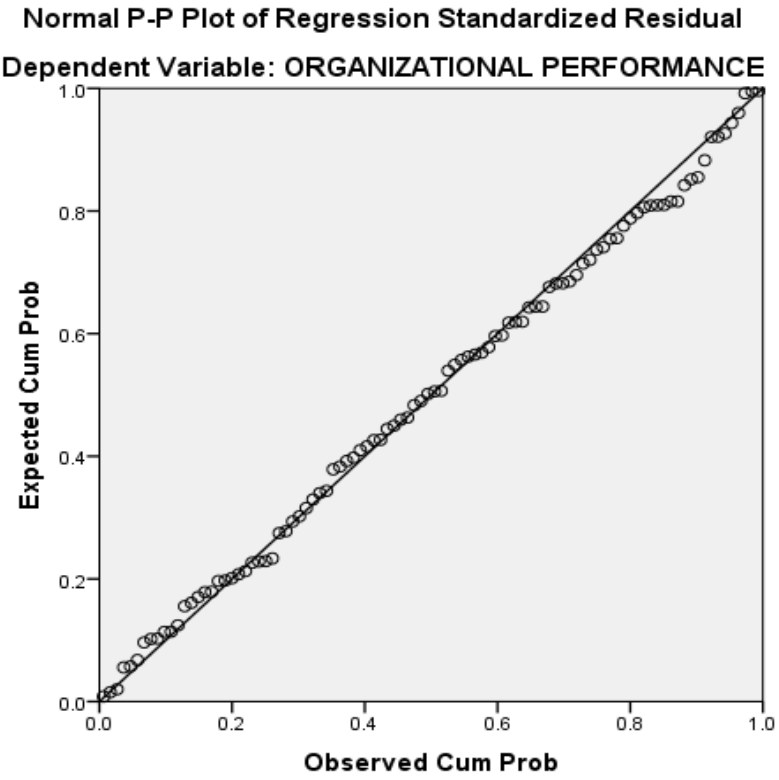
As it could have been seen from the below figure, the expected and observed cumulative probabilities are matched perfectly. This suggests that the residuals are seamlessly normally distributed. So in this survey result, the assumption of normality is not violated.

Figure 4.3 Normality Distribution Histogram



Source: *Survey Data, 2018*

Figure 4.4 Normality Distribution P-P Plot



Source: *Survey Data, 2018*

4.7.2 The Role of Supply Chain Integration for the Organizational Performance

The third objective of this study is to examine the role effect of supply chain integration on the performance of organization, since correlation cannot determine existence of cause and effect due to there may be a number of other unmeasured variables which could be interrelated and responsible for the relationship found. Multiple regression is not just one technique, but a family of techniques that can be used to explore the effect between one continuous dependent variable and a number of independent variables or predictors (usually continuous) *(Beech, 2006).*

A multiple regression analysis was conducted to predict the relationship between the supply chain integration (external integration, internal integration, supplier integration, customer integration, information integration, and measurement integration) and organizational performance using regression analysis. The Model Summary table shows how much variance is explained by each model. Whether the independent variables are a significant predictor of dependent variable will be indicated by the value in the Sig. F Change for this model. Note that the value for the next model reflects all independent variables entered.

R is the population correlation coefficient, and it takes on values between -1 and +1; 0 indicates no linear association; 1 indicates a perfect positive linear relationship; -1 indicates a perfect negative linear relationship *(Ge, 2013).*

Table 4.9 Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.603a	.364	.322	.28975

Source: *Survey Data, 2018*

A. Predictors: (Constant), Measurement Integration, External Integration, Customers Integration, Suppliers Integration, Internal Integration, Information Integration.
B. Dependent Variable: Organizational Performance

R is the square root of R-Squared and is the correlation between the observed and predicted values of dependent variable.

The finding of the analysis implies that there are an association of 60.3% between observed and predicted organizational performance. Therefore; from this result, it can be interpreted as there is a strong correlation between observed organizational performance and predicted performance of the organization.

R^2 is called the coefficient of determination, it is the proportion of the variance in the dependent variable (organizational performance) explained by variations in the independent variables, it shows the level of variance explained by the model; which indicates how the organizational performance varies with variation in supply chain integration practices, Measurement Integration, External Integration, Customers Integration, Suppliers Integration, Internal Integration, and Information Integration.

The finding shows that, the independent variables (Measurement Integration, External Integration, Customers Integration, Suppliers Integration, Internal Integration, and Information Integration) that were studied, explain only 36.4% the performance of the organization, in case of world food programme as represented by the R^2. Therefore, this means that another supply chain integration factors not studied in this research contribute 63.6% of the organizational performance. Therefore, further research should be conducted to investigate the others supply chain integration dimensions (63.6%) that have a role for the performance of the organization.

Table 4.10 ANOVA[a]

Model		Sum Of Squares	Df	Mean Square	F	Sig.
1	Regression	4.365	6.000	.72754	8.665671218	.000[b]
	Residual	7.640059363	91	0.083956696		
	Total	12.005	97.000			

Source: *Survey Data, 2018*

a. Dependent Variable: Organizational Performance

b. Predictors: (Constant), Measurement Integration, External Integration, Customers Integration, Suppliers Integration, Internal Integration, Information Integration.

The findings of the above table 4.12 indicated that the significance value of the model is p< .0005; which is less than the significance level of 0.05 at a confidence level of 95%, thus the model is statistically significant in predicting how Measurement Integration, External Integration, Customers Integration, Suppliers Integration, Internal Integration and Information Integration affect the performance of the organization. The F critical at 5% level of significance was 2.2. Since this value of F calculated is greater than the F critical (value = 8.67), this shows that the overall model is significant.

Table 4.11 Regression Coefficient

Coefficients[a]													
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval For B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-Order	Partial	Part	Tolerance	VIF
1	(Constant)	2.181	.474		4.598	.000	1.239	3.124					
	External Integration	.346	.105	.334	3.283	.001	.137	.555	.173	.325	.275	.677	1.477
	Internal Integration	.000	.156	.000	-.002	.998	-.310	.309	.174	.000	.000	.394	2.538
	Suppliers Integration	.033	.100	.033	.327	.744	-.166	.232	.040	.034	.027	.704	1.420
	Customers Integration	-.094	.066	-.131	-1.411	.162	-.225	.038	-.159	-.146	-.118	.808	1.238
	Information Integration	-.370	.123	-.458	-3.019	.003	-.614	-.127	.154	-.302	-.252	.304	3.293
	Measurement Integration	.529	.088	.762	6.029	.000	.355	.704	.465	.534	.504	.438	2.284

Source: *Survey Data, 2018*

a. Dependent Variable: Organizational Performance

The regression coefficient is the independent variable associated with it is contributing significance to the variance accounted for in the dependent variable. From the findings in the above table 4.13, the regression equation is: -

Y = 2.181 + 0.346x1 + 0.000x2 + 0.033x3 - 0.094x4 -.370x5+0.529x6 + €

Where Y is Organizational Performance

X1= External Integration,

X2= Internal Integration,

x3= Supplier Integration,

X4= Customer Integration,

x5= Information Integration

x6= Measurement Integration

€= Error term

From the above regression model, the significance value of three independent variables (external integration, information integration and measurement integration) is less than 0.05 which show that the model is statistically significance to predict the analysis of supply chain integration role on organizational performances, whereas the significance value of three independent variables (internal integration, supplier integration and customer integration) is greater than 0.05 which show that the model is statistically insignificance to predict the analysis of supply chain integration role on organizational performance. This implies that the independent variable such as, external integration, information integration, and measurement integration have the greater influence on the performance of the firm. On the other hand, internal integration, supplier integration, and customer integration have no impact for the performance. According to the finding, the multiple linear regression equation established that all independent variables taking to be zero (when Measurement Integration, External Integration, Customers Integration, Suppliers Integration, Internal Integration, and Information Integration are held at Zero), it was found that organizational performance would be increase by 2.181 constant. Increase in external integration**,** would lead to an increase in organizational performance by a factor of 0.346 while internal integration would lead to an increase in firm performance by a factor of 0.000. The study also found that effective supplier

integration increased performance of the firm by a factor of 0.033; a unit increase in customer integration and Information Integration will decrease performance of an organization to a 0.094 and .370 respectively while a unit increase in measurement integration will lead to a 0.529 increase in performance of the firm. This clearly indicates that there existed a positive relationship between supply chain integration practices and organizational performance.

These findings support other literature that argues the supply chain management integration have a role on the performances of the organization. When the results of this study compared with those of previous research on supply chain integration, the supplier integration, customer integration and internal integration findings that indicate as there are no significant impact in improving a firm's performance is consistent with the findings of *Uwamahoro, 2018, Devaraj, S., L. Krajewski and J.C. Wei (2007),* and *Chirchir and Richu, 2013* respectively.
The measurement integration result has significant result for the performance of the organization, this finding is aligned with the study made by *Klemencic, 2006.*
Information integration are very significant for performance of the organization is contingent with the finding of the *Wong, Lai and Cheng, 2016.* External integration with intra-organization has produced the significant result which is consistent with the finding of the previous study *(Barroso, Gouveia and José, 2016).*

CHAPTER FIVE

5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Summary of Major Findings

From the findings of the study's objectives of this investigation, the results found were summarized by the researcher in the following paragraphs.

The analysis made on the extent of dimensions of supply chain integration practices were revealed that the result of information integration (3.82), external integration (3.813), measurement integration (3.809), supplier integration (3.80), internal integration (3.78) and customer integration (3.61) ranked from one to six respectively. The result of the analysis implies the high extent of supply chain integration practices by the organization since all of the dimensions have been fall in the great rate as per the survey scale instrument.

The result of the second objective of the study to examine the correlation between supply chain integration and organizational performance has experienced that the relationships of the dependent variable (organizational performance) are small with external integration (.173), internal integration (.174) and information integration (.154), and moderate correlation with measurement integration (.465); the relationship between organizational performance and the supplier as well as customer integration somewhat unique from the others in non-existence of correlation with supplier integration (.04), and small in degree as well as negative relationships with customer integration (-.159). Accordingly, the findings of the result were implying that external integration, internal integration and information integration slightly vary together with organizational performance; measurement integration and organizational performance are substantially change together; but supplier integration is not completely change with organizational performance whereas customer integration adversely change with the change in organizational performance. The significance value of external integration, internal integration and measurement integration are less than the statistical level (i.e., .05), so these variables were statistically significant. The significance value of supplier integration, information integration and customer integration are greater than the statistical level (i.e., .05), so these variables were statistically insignificant. The result implies that the degree of external integration, internal integration and measurement integration changing together with organizational performance had relevant effects; adversely, the degree of supplier integration,

information integration and customer integration varying together with performance of the organization were not relevant.

The coefficient of determination (R2) of the model has produced that supply chain integration explained 36.4% variance of performance of the organization; indicating that 63.6% of the organizational performance could be explained by another factors which are not considered by the study. The regression coefficient (ß) of the model were also .346, .000, .033, -.094, -.370 and .529 for external integration, internal integration, supplier integration, customer integration, information integration and measurement integration respectively. Given that the statistical values of external integration (.001), information integration (.003) and measurement integration (.000) were significant. Thus, they have the power to impact the performance of the organization. Generally, the model was statistically fit in predicting organizational performance since its statistical value (P<.0005) less than statistical level (ά .05).

5.2. Conclusions

There is high extent of practices of supply chain integration by the organization since all of the dimensions have been fall in the great rate as per the survey scale instrument.

The external integration, internal integration and information integration slightly vary together with organizational performance; measurement integration and organizational performance are substantially change together; but supplier integration is not completely change with organizational performance whereas customer integration adversely change with the change in organizational performance. External integration, internal integration and measurement integration were statistically significant. The supplier integration, information integration and customer integration were statistically insignificant. Hence, that the degree of external integration, internal integration and measurement integration changing together with organizational performance had relevant effects; adversely, the degree of supplier integration, information integration and customer integration varying together with performance of the organization were not relevant.

The supply chain integration explained 36.4% variance of performance of the organization; 63.6% of the organizational performance could be explained by another factors which are not considered by the study.

External integration and measurement integration dimensions have a direct as well as positively influenced the performance of the organization, provided that developed external relationships between firms, and supply chain partners performance assessment which holds each individual firms or units accountable for meeting its deadline lead to high performance of the organization; information integration that coordinated information transfer, collaborated communication and supported technology has an indirect potential to improve organizational performance. Both internal, supplier and customer integrations which haven't achieved organizational performance indicated that integrated internal processes and functions, reduced lead times and inventory levels, and customer's requirement and order fulfilment haven't influenced firm performance. The overall assessment results of the structural model revealed that the model had satisfactory statistical power in predicting the research model. Generally, the study showed that the superior organizational performance can be attained through supply chain integration impact.

5.3. Recommendations

Grounded the study's summary of major findings and conclusions careworn, the here under listed recommendations are projected as a way forward from findings of the study.

- Continuous improvement of supply chain integration practices should be undertaken in the organization, so that optimal performance would be achieved with all partners in the chain.
- The degree of variance amongst supply chain integration dimensions and organizational performance should be increased through systems automation, framework agreement, relationship management and performance assessment.
- Another factors of supply chain integration that have not seen in this study, but might have explained organizational performance should be considered and retreated in order to minimize the effects of unpracticed supply chain integration.
- All the dimensions of supply chain integration should be created as well as practiced by the organization to attain superior performance.

5.4. Suggestion for Further Study

The present study's geographical scope was limited to country office, Addis Ababa; so that the future studies should have to consider expanding this scope to cover the whole countries branch. Moreover, the study was also limited to the World Food Programme only, future studies should have to incorporate partner organizations, such as supplier, customer, and intra-organizations.

Finally, I would like to suggest that the future studies have to focus on the three variables (internal integration, supplier integration and customer integration) that were insignificant by this study.

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Appendices

Appendix I

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	MEASUREMENT INTEGRATION, EXTERNAL INTEGRATION, CUSTOMERS INTEGRATION, SUPPLIERS INTEGRATION, INTERNAL INTEGRATION, INFORMATION INTEGRATION[b]	.	Enter

a. Dependent Variable: ORGANIZATIONAL PERFORMANCE

b. All requested variables entered.

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	98	100.0
	Excluded[a]	0	0.0
	Total	98	100.0

a. Listwise deletion based on all variables in the procedure.

Scale: ALL VARIABLES

Reliability Statistics

Cronbach's Alpha	N of Items
.789	29

Item Statistics			
	Mean	Std. Deviation	N
EXTERNAL INTEGRATION			
Sourcing and tendering decisions are easily made due to SC Integration and information sharing.	3.95	.390	98
There are external SC integration that fastens flows such as, physical and funds.	3.73	.602	98
Distribution and delivery is made at the right time and place due to SC integration, information sharing and coordination.	3.88	.707	98
There are integration of objectives, planning, and resources with external organizations.	3.69	.616	98
INTERNAL INTEGRATION			
Monitoring stock movement has been made easier as a result of the collaboration between procurement, logistics and warehouse/ inventory management.	3.78	.601	98
There are internal integration of functions and activities.	3.71	.574	98
With an integrated SC technologies and systems established, inter and intra organizations' communications are optimized.	3.82	.415	98
Due to information and technology integration, there are access of tracking performances of SC partners.	3.82	.778	98
SUPPLIERS INTEGRATION			
A database of suppliers is easily maintained as a result of SC Integration.	3.89	.515	98

With an integrated suppliers supply chain, logistics services are improved.	3.85	.598	98
SC Integration has provided the organization the ability to quickly and easily relate with suppliers.	3.81	.490	98
Supply chain integration is led to a better supplier relationship management.	3.67	.493	98
orders are easily processed as a result of supplier integration.	3.79	.750	98
CUSTOMER INTEGRATION			
SC Integration has assisted in improving the quality of goods, works and services offered to the beneficiary.	3.68	.698	98
The speed of service delivery has been enhanced due to the supply chain integration process	3.47	.578	98
Customer integration has enabled to deliver services easily and quickly.	3.65	.734	98
The speedy customer collaboration has been maintained as a result of SCI.	3.62	.666	98
INFORMATION INTEGRATION			
Due to information and technology integration, there are access of tracking performances of SC partners.	3.89	.572	98
With an integrated information and measurement SC, supply chain analysis has been done.	3.79	.542	98
With an integrated suppliers supply chain, logistics services are improved.	3.76	.643	98
There are external SC integration that fastens flows such as, physical and funds.	3.86	.849	98
MEASUREMENT INTEGRATION			
With an integrated SC technologies and systems established, inter and intra organizations' communications are optimized.	3.87	.727	98
Distribution and delivery is made at the right time and place due to SC integration, information sharing and coordination.	3.68	.549	98

With an integrated SC technologies and systems established, inter and intra organizations' communications are optimized.	3.88	.736	98
ORGANIZATIONAL PERFORMANCE			
The firm has maintained cost reductions	4.17	.643	98
Uncertainty has been minimized in the receiving of products and services.	3.58	.962	98
Cycle time reduced for some goods like that of assembled.	3.96	.349	98
Reduced Inventory level in the organization.	3.89	.495	98
Shorter lead times needed for delivery of orders	3.84	.512	98

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Sourcing and tendering decisions are easily made due to SC Integration and information sharing.	106.01	46.959	.166	.788
There are external SC integration that fastens flows such as, physical and funds.	106.22	45.619	.248	.785
Distribution and delivery is made at the right time and place due to SC integration, information sharing and coordination.	106.08	44.096	.362	.780
There are integration of objectives, planning, and resources with external organizations.	106.27	45.517	.253	.785
Monitoring stock movement has been made easier as a result of the collaboration between procurement, logistics and warehouse/ inventory management.	106.18	44.832	.348	.781
There are internal integration of functions and activities.	106.24	45.445	.287	.784
With an integrated SC technologies and systems established, inter and intra organizations' communications are optimized.	106.14	47.629	.034	.792

Due to information and technology integration, there are access of tracking performances of SC partners.	106.14	42.021	.533	.770
A database of suppliers is easily maintained as a result of SC Integration.	106.07	47.345	.055	.793
With an integrated suppliers supply chain, logistics services are improved.	106.11	46.905	.090	.792
SC Integration has provided the organization the ability to quickly and easily relate with suppliers.	106.15	45.451	.349	.782
Supply chain integration is led to a better supplier relationship management.	106.29	44.928	.428	.779
orders are easily processed as a result of supplier integration.	106.17	42.990	.452	.775
SC Integration has assisted in improving the quality of goods, works and services offered to the beneficiary.	106.28	44.903	.279	.784
The speed of service delivery has been enhanced due to the supply chain integration process	106.49	46.417	.158	.789
Customer integration has enabled to deliver services easily and quickly.	106.31	44.318	.322	.782
The speedy customer collaboration has been maintained as a result of SCI.	106.34	44.576	.335	.781
Due to information and technology integration, there are access of tracking performances of SC partners.	106.07	44.830	.371	.780
With an integrated information and measurement SC, supply chain analysis has been done.	106.17	45.629	.283	.784
With an integrated suppliers supply chain, logistics services are improved.	106.20	43.154	.524	.772
There are external SC integration that fastens flows such as, physical and funds.	106.10	40.278	.649	.761
With an integrated SC technologies and systems established, inter and intra organizations' communications are optimized.	106.09	42.352	.541	.770
Distribution and delivery is made at the right time and place due to SC integration, information sharing and coordination.	106.28	44.449	.444	.777
With an integrated SC technologies and systems established, inter and intra organizations' communications are	106.08	45.107	.238	.787

optimized.				
The firm has maintained cost reductions	105.79	46.995	.067	.794
Uncertainty has been minimized in the receiving of products and services.	106.38	45.413	.128	.797
Cycle time reduced for some goods like that of assembled.	106.00	46.680	.251	.786
Reduced Inventory level in the organization.	106.07	46.232	.226	.786
Shorter lead times needed for delivery of orders	106.12	46.315	.204	.787

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
109.96	47.998	6.928	29

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
EXTERNAL INTEGRATION	22.7065	2.440	.416	.395	.695
INTERNAL INTEGRATION	22.7396	2.237	.742	.606	.636
SUPPLIERS INTEGRATION	22.7202	2.472	.365	.296	.705
CUSTOMERS INTEGRATION	22.9131	2.386	.240	.209	.749
INFORMATION INTEGRATION	22.6988	1.907	.748	.724	.601
MEASUREMENT INTEGRATION	22.7107	2.051	.474	.687	.682
ORGANIZATIONAL PERFORMANCE	22.6325	2.626	.216	.364	.735

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
26.5202	2.996	1.73079	7

Appendix II: Research Questionnaire

Introduction

This questionnaire has been designed for academic use only, with the sole purpose of collecting data to determine the relationship between Supply Chain integration (SCI) and the performance of World Food Programme in Ethiopia.

Please note that the data you provide will be treated with extreme confidentiality. Your response is highly prized.

Instruction: Please Mark X where necessary.

Section A: General Information (Make "X" Symbol for Your Answers)

1. Sex:

_____Male _____Female

2. Age: - _____

3. Level of Education: -

Certificate	Diploma	Degree	Masters	PhD
☐	☐	☐	☐	☐

4. What is your position in this organization?

1) Supply chain:

Director	Manager	Officer	Specialist	Assistant
☐	☐	☐	☐	☐

2) Operation Director: -

Director	Manager	Officer	Specialist	Assistant
☐	☐	☐	☐	☐

3) Logistics Directorate: -

Director	Manager	Officer	Specialist	Assistant
☐	☐	☐	☐	☐

4) Procurement Directorate: -

Director	Manager	Officer	Specialist	Assistant

☐ ☐ ☐ ☐ ☐

5) Finance Team: -

Director	Manager	Officer	Specialist	Assistant
☐	☐	☐	☐	☐

6) IT Directorate: -

Director	Manager	Officer	Specialist	Assistant
☐	☐	☐	☐	☐

7) Food Security Programme: -

Director	Manager	Officer	Specialist	Assistant
☐	☐	☐	☐	☐

8) Others

_____

5. How long have you been stayed at this organization?

_____< 2 Years _____2–5 Years

_____6-10 Years _____Over 10 Years

Section B: Extent of SC Integration

Please indicate the extent to which the following statements concerning the level of SC Integration within your organization occur.

Use the scale of:

1) does not occur
2) small extent
3) medium extent

4) large extent
5) very large extent

No	Statement	1	2	3	4	5
	Extent of Supply Chain Integration					
External Integration						
	Sourcing and tendering decisions are easily made due to SC Integration and information sharing.					
	There are external SC integration that fastens flows such as, physical and funds.					
	Distribution and delivery is made at the right time and place due to SC integration, information sharing and coordination.					
	There are integration of objectives, planning, and resources with external organizations.					
Internal Integration						
	Monitoring stock movement has been made easier as a result of the collaboration between procurement, logistics and warehouse/ inventory management.					
	There are internal integration of functions and activities.					
	With an integrated SC technologies and systems established, inter and intra organizations' communications are optimized.					
	Due to information and technology integration, there are access of tracking performances of SC partners.					
Supplier Integration						
	A database of suppliers is easily maintained as a result of SC Integration.					
	With an integrated suppliers supply chain, logistics services are improved.					
	SC Integration has provided the organization the ability to quickly and easily relate with suppliers.					
	Supply chain integration is led to a better supplier relationship management.					
	orders are easily processed as a result of supplier integration.					

Customer Integration						
	SC Integration has assisted in improving the quality of goods, works and services offered to the beneficiary.					
	The speed of service delivery has been enhanced due to the supply chain integration process					
	Customer integration has enabled to deliver services easily and quickly.					
	The speedy customer collaboration has been maintained as a result of SCI.					
Information Integration						
	Due to information and technology integration, there are access of tracking performances of SC partners.					
	With an integrated information and measurement SC, supply chain analysis has been done.					
	With an integrated suppliers supply chain, logistics services are improved.					
	There are external SC integration that fastens flows such as, physical and funds.					
Measurement Integration						
	With an integrated SC technologies and systems established, inter and intra organizations' communications are optimized.					
	Distribution and delivery is made at the right time and place due to SC integration, information sharing and coordination.					
	With an integrated SC technologies and systems established, inter and intra organizations' communications are optimized.					

Section C: Organizational performance.

Please indicate the extent to which the following statements concerning the relationship that exists between your SCI and the performance of your organization occurs.

Use the scale of:

1) Very low extent
2) Low extent
3) Moderate extent

4) Great extent

5) Very great extent.

No	Statement	1	2	3	4	5
	Organizational performance					
	The firm has maintained Responsiveness and Flexibility of deliveries.					
	Uncertainty has been minimized in the receiving of products and services.					
	Cycle time reduced for some goods like that of assembled.					
	Reduced Inventory level in the organization.					
	Shorter lead times needed for delivery of orders					

Please state any other relationships:

_____

_____

_____

_____

_____