



**ST. MARY'S UNIVERSITY  
SCHOOL OF GRADUATE STUDIES**

**ASSESSING SUPPLY CHAIN MANAGEMENT PRACTICES OF  
RAINBOW FOAM AND PLASTIC INDUSTRY P.L.C. ADDIS  
ABABA**

**BY  
TARIK HAILEMARIAM**

**JANUARY, 2018  
ADDIS ABABA, ETHIOPIA**



**ST. MARY'S UNIVERSITY  
SCHOOL OF GRADUATE STUDIES**

**ASSESSING SUPPLY CHAIN MANAGEMENT PRACTICES IN  
RAINBOW FOAM AND PLASTIC INDUSTRY P.L.C. ADDIS  
ABABA**

**By:**

**TARIK HAILEMAIAM**

**A THESIS SUBMITTED ON PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS  
IN BUSINESS ADMINISTRATION AT ST. MARY'S  
UNIVERSITY SCHOOL OF GRADUATE STUDIES**

**JANUARY, 2018**

**ADDIS ABABA, ETHIOPIA**

**ST. MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES  
FACULTY OF BUSINESS**

**ASSESSING THE PRACTICES OF SUPPLY CHAIN  
MANAGEMENT IN RAINBOW FOAM AND PLASTIC  
INDUSTRY P.L.C. ADDIS ABABA**

**By:  
TARIK HAILEMARIAM**

**APPROVED BY BOARD OF EXAMINERS**

\_\_\_\_\_  
**Dean, Graduate Studies**

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**Advisor**

\_\_\_\_\_  
**Signature**

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

\_\_\_\_\_  
**Signature**

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

\_\_\_\_\_  
**Signature**

## DECLARATION

I, the undersigned, declare that this is my original work, prepared under the guidance of Dr. Temesgen Belayneh. All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of learning in any degree.

Tarik Hailemariam

-----

-

Name

Signature

St. Mary's University, Addis Ababa

January, 2018

## **ENDORSEMENT**

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

---

Advisor

**St. Mary's University, Addis Ababa**

---

Signature

**JANUARY, 2018**

## **ACKNOWLEDGEMENTS**

First and Foremost, I would like to thank my Lord the Almighty God for helping me in every endeavor in my life.

Next, I would like to express my sincere gratitude to my advisor, Dr. Temesgen Belayneh for his support and guidance, comments and technical advice to strengthen the paper to be completed.

Further, I would like to express my heartfelt gratitude to my husband Ato Alemayehu Bekele and our son Iysau Alemayehu their valuable assistance and encouragement.

My special thanks go to my beloved colleagues Hiwot Fikade, Tesfaye Ejigu, and Taye Melese for their encouragement and valuable suggestions.

Finally, I want to express my deep gratitude to Rainbow Foam and Plastic Industry P.L.C. top managers, supervisors, and employees, especially those who filled and responded my questionnaires and interviews as well.



## ABSTRACT

*The purposes of this study, was to assess the supply chain management practices in Rainbow Foam and Plastic Industry. In order to attain the objectives of the study, mixed approach was entertained. As a means of data collection instrument; questionnaires structured and structured interview questions were applied to describe the supply chain practices using data obtained from secondary data sources. The populations of the study were 327 (three hundred twenty seven) employees of Rainbow Foam and Plastic Industry P.L.C, and interview with those at managerial level, responsible either directly or indirectly for the supply chain activities of the company. From a total of 190 (one hundred ninety) questionnaires distributed, only 174(one hundred seventy four) of them were correctly filled and applied in the study, and this revealed a response rate of 97% (ninety percent) The interviews were conducted with deputy manager, marketing manager, sales manager and production manager, and five branch supervisors. In order to analyze, interpret and present the data captured via questionnaire, Statistical Package for the Social Sciences (SPSS) was used. Descriptive analysis methods for analyses were used. All supply chain management practices/dimensions are not known The overall survey result indicate that, all the dimensions of supply chain management practices; strategic supplier partnership, information sharing, material management, and corporate culture to Rainbow Foam and plastic Industry P.L.C. in the light of the research findings, the researcher has pin pointed major constraints along with possible recommendations for the companies consideration foregoing observation.*

***Key words: Supply chain management, Strategic Supplier Partnership, Information Sharing, Customer Relationship, Material Management and Corporate Culture***



## **LIST OF ACRONYMS**

**CC:** Corporate Culture

**CR:** Customer Relation

**IS:** Information Sharing

**IT:** Information Technology

**RFPI:** Rainbow Foam and Plastic Industry.

**SC:** Supply Chain

**SCM:** Supply Chain Management

**SCMP:** Supply Chain Management Practices

**SSP:** Strategic Supplier Partnership

## **LIST OF TABLES**

Table 4.1. Demographic Information

Table 4.2. Responses for customer relationship practices

Table 4.3. Responses for information sharing practices

Table 4.4. Responses for material management

Table 4.5. Responses for corporate culture



## Table of content

<b>Contents</b>	<b>page</b>
ACKNOWLEDGMENTS.....	i
ABSTRACT.....	ii
LIST OF ACRONYMS.....	iii
LIST OF TABLES.....	iv
TABLE OF CONTENT.....	v
CHAPTER ONE: INTRODUCTION.....	1
1.1. Background of the study.....	1
1.2. Organizational profile.....	2
1.3. Statement of the problem.....	2
1.4. Research questions.....	7
1.5. Objectives of the study.....	7
1.5.1. General objectives.....	7
1.5.2. Specific objectives.....	7
1.6. Scope of the study.....	8
1.7. Significance of the study.....	8
1.8. Definition of terms.....	9
1.9. Organization of the paper.....	10
CHAPTER TWO: REVIEW OF RELATED LITERATURE .....	11
2.1. Theoretical Literature Review. ....	11
2.1.1. Supply Chain.....	11
2.1.2. Supply Chain Management.....	12
2.1.3. The Objective of supply chain.....	13

2.1.4. Importance of supply chain management.....	14
2.1.5. Collaboration.....	14
2.1.6. Supply chain management practices.....	16
2.1.6.1. Information Sharing.....	16
2.1.6.2. Customer Relationship.....	17
2.1.6.3. Strategic Supplier Partnership.....	18
2.1.6.4. Material Management.....	20
Transportation 2.1.6.4.1.....	20
2.1.6.4.2. Storage .....	20
2.1.6.4.3. Packaging .....	21
2.1.6.4.4. Packaging .....	21
2.1.6.4.5. Materials Handling .....	21
2.1.6.4.6. Inventory Control .....	22
2.1.6.4.7. Order Fulfillment.....	22
2.1.6.4.8. Forecasting .....	22
2.1.6.4.9. Production Planning .....	22
2.1.6.4.10. Procurement .....	23
2.1.6.4.11. Other Activities .....	23
2.1.6.5. Corporate Culture.....	24
2.1.7. Drivers of supply chain performance.....	25
2.1.8. Bullwhip Effect.....	26
2.1.9. Integration.....	26

2.1.10. Challenges of Supply Chain Managers.....	27
2.2. Conceptual Framework of the study.....	28
CHAPTER THREE: RESEARCH METHODOLOGY .....	29
4.2.2. Information Sharing practices.....	40
4.2.3. Material Management practices.....	43
4.2.4. Corporate Culture.....	48
3.1. Introduction.....	29
3.2. Research design and approach method.....	29
3.3. Population of the study.....	29
3.4. Sampling technique and sample size.....	29
3. 5. Sources of data.....	30
3.6. Procedure of data collection.....	32
3.7. Methods of data Analysis.....	32
3.8. Validity and Reliability .....	33
3.8.1. Validity .....	33
3.8.2. Reliability.....	33
3.9. Ethical Considerations .....	33

CHAPTER FOUR: RESULTS AND DICUSSIONS.....	35
4.1. Introduction.....	35
4.2. Results of the study.....	35
4.2.1. Customer relationship practices.....	37
4.2.2. Information sharing practices.....	40
4.2.3. Material flow management practices.....	43
4.2.4. Corporate culture practices.....	48
CHAPTER FIVE: CONCLUSIONS AND SUGGESTIONS.....	51
5.1. Summary.....	51
5.2. Conclusion.....	52
5.3. Recommendation.....	53
REFERENCES	
APPENDICES	

**ENDORSEMENT**

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

---

Advisor

**St. Mary's University, Addis Ababa**

---

Signature

**January, 2018**



# CHAPTER ONE

## INTRODUCTION

### 1.1 Back ground of the study

Traditional way of running business has become challenging by outside forces. These forces are globalization, technological advancement, organizational alliance, customers' greater expectation, and government policies & regulation (Coyle, Langley, Novack and Gibson, 2013 p.7). In realization of these forces, business organizations are forcibly adopting a new approach. As the field of competitive environment grew more severe, a single organization to survive by itself alone has become unthinkable. This situation led managers to the realization of the need to collaborate with other independent organizations (Lu, 2011 p.8; Crespo 2010 p.2).

“Competition is moving from organization against organization to supply chain against supply chain” Dawei, (2011). Competing solely among organizations becomes traditional. To survive in this global competition firms need to compete have to work together with other trading partners. He further stated that “the survival of any business today is no longer solely dependent on its own ability to compete but rather on the ability to cooperate within the supply chain”. The seemingly independent relation between the organizations within the supply chain becomes ever more interdependent. You ‘sink or swim with the supply chain’ (Dawei, 2011 p.8).

Similarly, other authors state that the competitive global environment, performance can no longer be solely determined by individual firms and actions that occur within a firm. The execution of all members involved contributes to the overall results of the supply chain. (Naslund and Williamson, 2010 p.11; Altekari, 2005, p.5). This shows that all members work effectively and the benefit gained from doing business individually is unthinkable.

The concept of supply chain management goes back to 1980s, it is said to gain recognition by top level business leaders in varied organizations since 1990s. They understood the key role that SCM could play in terms of enabling organizations to globally compete and thus, increase their market share with consequent improvement in shareholders' value (Coyle et al. 2013, p.14).

This shows that to maximize customer value and achieve a sustainable competitive advantage supply chain management is an indispensable necessity, as it helps the supply chain members to exert conscious effort towards effective and efficient management of their businesses.

Awad, & Nassar, (2010, p.51) state that supply chain embraces manufacturer, supplier, transporters, warehouses, retailer, third-party logistics provider and customer. The objective of supply chain management (SCM) is to manage these activities in order that product goes through the network in the shortest cost time possible and at the lowest costs. All movements in the supply chain can be of information, product or cash demand costs. Thus, the appropriate management of these flows is a key to supply chain success. “Effective supply chain management involves the management of supply chain assets and product, information, and fund flows to grow the total supply chain surplus” (Chopra, & Meindl, 2016, p.15; Naslund & Williamson, 2010, p. 13; Mentzer et al 2001 p.15).

Similarly, Handfield, & Nichols (1999) define that Supply chain is the entire network of firms directly or indirectly entwined and mutually dependent in serving the same customer. It consists of vendors that supply raw materials, producers who convert the material into products, warehouses that store the product, distribution centers that deliver to the retailers and retailers who bring the product to the ultimate consumer or end-user. It also facilitates timely information flow at all levels both upstream and downstream. The objective of supply chain management is to monitor and relate production, distribution, and shipment of products and services, with the objective of meeting customer needs (Handfield, & Nichols 1999, p.2). For most companies, supply chain is considered most crucial in terms of value creation to all involved in the chain.

Other authors state that Supply Chain Management (SCM) is a mechanism that enables efficient interaction of suppliers, manufacturers, warehouses, and store, in order for the desired products to be produced and distributed in the right quantities, to the right locations and at the right time, and at prices attractive to the consumers, with due attention to minimization of costs at all levels in the supply chain. The ultimate objective is to optimize effectiveness and returns to all partners in the chain while satisfying the final consumer. Supply chain management has many benefits: it develops better customer relation, creates better distribution mechanism, creates productivity, minimizes warehouse and transportation costs, enhances better inventory management, enable product delivery at the right place at the right time, thus, minimizing waste by achieving efficiency and effectiveness (Simchi-Levi, D., Kaminsky P., & Simchi-Levi, E., 2003).

Coyle et al. (2013) further points out that, time and distance have been compressed due to globalization. He emphasizes that companies seeking to rationalize their global networks raise the following questions: where to source materials and/or services? Where to manufacture products and/or services? Where to market and sale products and/or services? Where to store and/or distribute products? And what global transportation alternative is to consider?

Some important issues or challenge for supply chains of the global economy are fluctuations in demand/supply situation, the risk of product obsolescence, confusion arising from traditional organizational boundaries.

Organizations are therefore, obliged to be much more flexible, agile, and responsive in order to be able to survive the forces of fierce competition worldwide.

“Supply chain management practices have not yet been well adopted in developing countries.” Reddy & Raju, (2013:11) Supply chain enables supply chain members to use the advantage to add value progressively in the chain. The application of integrated supply chain has been recognized very problematic (Handfield, & Nicholas, (1999. p.9).

Supply chain management faces various challenges one being procurement. The technicality and complexity of the procurement process pose serious challenge to organizations. Some of these challenges relate to the lack of effective and efficient supply chain system, coupled with organizational structures that facilitate successful implementation of strategic supply plan, with integration of stakeholders and finance. This is because procurement activities require skilled and experienced personnel due to complex nature of the procurement activities. Effective execution of procurement activities is constrained by the lack of appropriate recruitment practices and inability to retain knowledgeable and experienced employees (Awad H, and Nassar, M 2010).

Knowing that, no study has been conducted on the Rainbow Foam and Plastic industry P.L.C, in respect to the application, of Supply Chain Management, the researcher has selected to study from the comprehensive concept of SCM with particular focus on five dimensions of SCM practices such as: information sharing; customer relationship; strategic supplier partnership; material flow management; and corporate culture. (Ibrahim, and Hamad, 2014)

Thus, by using the five dimensions of SCM, this thesis will assess the practices of supply chain management in Rainbow Foam and Plastic Industry P.L.C.

## **1.2.Organizational Profile**

Rainbow Foam and Plastic industry P.L.C. is a private limited company located in Addis Ababa Ethiopia. It was established in 1996 G.C, and it is a family owned company,run jointly by two brothers. It is engaged into main business lines. The first area extends mainly towards beds and related products. This first aspect of production line includes mattresses, pillows and cushions, rebounded foam (known also as bonded foam), foam sheets, custom made foam and scraps. In addition the company provides duvets and sleeping fabrics as well as comforters. The second sphere of activity within the company's furniture infrastructure department, and their products include sofas and chairs, desks, kitchen cabinets, bed frames, home décor, ceramics, and home lighting fixtures.

The firm has stated its vision as aspiring to continue to be the most successful and reputed foam industry within the East African Regions, and become key force in the foam market in Africa and beyond.

With respect to its mission the company states that its aim is customer satisfaction by providing quality foam at reasonable market prices.

Towards these end the company is run by two owner managers and under them are structured, Finance, Administration, production and Marketing/Sales/Customer service. The company has recently opened branch factory at Dukem, in addition it has sales branches numbering ten branches in Addis Ababa and three others in Nazareth,Debrebirhan, as well as Hawassa. Furthermore, it has twenty franchised branches around Addis Ababa. The companyemployees' number is 327.

The company imported raw material largely using one basic producer from abroad. When it encounters shortage of raw materials it buys from its competing firms.

## **1.3. Statement of the problem**

Supply chain management should be given serious consideration in the planning and implementation in order to deliver the right product, at the right time, at the minimum cost, in the right quantity and

quality to the right customer, the objective being achievement of greater profitability by adding value and creating efficiencies, thus, maximizing customer satisfaction.

With this in mind, according to preliminary survey, interviews were conducted with two responsible persons, one in production department and the other in the sales sections in order to secure reliable information for the study. The result of the interview revealed the following problems.

Lack of adequate storage facility, which in turn caused the company place work -in- process, and finished products as well as scrap materials all in one store; Shortage of finished products results in delayed delivery to customers and repeated stock- out.

The firm uses one store for work-in-process, finished products and scrap materials. This creates congestion which in turn hinders smooth running of storage operation. Shortage of finished products, and delayed delivery, causes customer dissatisfaction. Dissatisfied customers are likely to resort to other competing suppliers thus, causing the company loss of its customers, reputation, loss of profitability, loss of employee morale and other associated costs.

From the researchers' preliminary interview, it has been gathered that the firm frequently faces stock out problems. According to Murray, 2017 one of the worst things that can happen to a business is to have stock out this implies lack of stock will cause production stoppage resulting customer dissatisfaction for non fulfilled order. This is a matter to be dreaded and with it comes a substantial cost to the company. In reference to the same issue another researcher points out the following stock out consequences:

The customer, despite his/her dissatisfaction, may opt to wait for the product, provided the product is badly needed.

The customer may cancel the order, if he/she has an option of finding the item from another source. Delayed order frustrates the customer and causes him/her great dissatisfaction.

The customer cancels the order and no longer a customer. This is the worst situation as the vendor loses the customer to another competitor. In this regard, it must be noted that customers have more than one source of supply for their key items therefore they might find it easy to order from other sources instead of waiting. This obviously entails heavy cost on the part of the vendor. Heavy cost,

particularly if the customer was a major purchaser of goods. The cost would be even more severe as to put the firm on financial difficulty.

Lost customer results in lost sales and revenue: has a negative impact on the confidence of the entire organization; demoralizes sales and marketing staff; may be open up an opportunity for other competitors; can be the beginning of a bad reputation.

The interview results stated above in agreement with studies conducted by other researchers. Absence of effective coordination disrupts maintenance of smooth inventory level and in consequence leads to a more frequent stock out (Chopra, & Meindl, 2016 p.260). Other authors further state that, in facing frequent stock out, “The mismatch between supply and demand results in rise in the costs of stock out, accelerate transshipment, advertising and sale preparation, excess inventory” (Reddy, & Raju, 2013:114). Thus, resulting in lost sales and customer dissatisfaction and reduced benefit, both to organization and its stake holders.

This situation will open a way for competitors to engage in the supply of other competing products. As Porter points out, “buyers have a credible potential threat of integrating backward to produce the company’s product themselves if vendors are too profitable” (Porter, 2007: 5).

Managers have to keep the balance not to carry neither too little nor too much stock. (Kotler, 2008 .p.354). But, in the first observation it was perceived that Rainbow Foam and plastic Industry is facing frequent stock outs of its major products, which results in lost sales moreover, the company perceives, using same store for production work-in -progress and finished products are kept same place, this is not consistent with the internal control system. In consequence, this has caused the company to fail to satisfy its customers’ demands and expectations and therefore many loyal customers moved to competitors. The researcher has found out that no study of supply chain management has been made in respect of RFPI. Though Rainbow Foam and Plastic industry is known by its quality of product and has a good reputation of its long year service, it faces problems of timely delivery and resultant customer dissatisfaction, lost sales and decrease in profitability. This shows that as Chopra & Meindl, (2016) rightly stated, the company has lost its “only one source of revenue: the customer.”

#### **1.4. Research Questions**

In line with the above problem statements, the following research questions need to be addressed.

- What is the level of firm's awareness and knowledge about Supply chain management practices?
- What is the corporate culture of supply chain management practice of RFPI?
- What is the strategic supplier partnership practice of RFPI.
- What is the material management practice of the RFPI?
- What is the Customer Relationship practice in the firm?
- What is the information sharing practice of Rainbow Foam and Plastic Industry P.L.C?

#### **1.5. Objective of the study**

##### **1.5.1 General objective**

The general objective of the study is to assess the practices of supply chain management in Rainbow Foam and Plastic Industry, Addis Ababa, Ethiopia.

##### **1.5.2 Specific objectives**

The specific objectives of the study are to:

- Assess the level of firm's awareness and knowledge about SCM practices.
- Assess the corporate culture versus supply chain management in RFPI
- Investigate the strategic supplier partnership.
- Examine the material management practices of the RFPI

- Examine the Customer Relationship practice in the firm

-Assess the information sharing practice in Rainbow Foam and Plastic Industry PLC

### **1.6. Scope of the study**

The scope of the study is limited to three sets of criteria's:

1. Geographically,
2. Conceptually and
3. Methodologically

First, the firm has various sales outlets largely in Addis Ababa, it has also branch factory in Dukem. Further it has other sales centers in Nazareth, Debrebirhan and Hawassa. The main reason for geographical limitation is due to the fact that, the firm's sales outlets are found in Addis Ababa.

Second, conceptually the study is focused on material flow and information flow. As this were considered very crucial affecting the firm. This means it has not dealt with the financial flow aspect.

Third, methodologically, the study applied questionnaires and interview methods only, believing that these two methods can be sufficient to bring out the desired information

The study focuses on the practices of supply chain management in Rainbow Plastic and Foam Industry Addis Ababa, Ethiopia and it would be important if more whole sellers have been included in the research. However, it would be practically unattainable to include them due to lack of time and financial resources. Therefore, only company's managers and workers are selected for the study.

### **1.7. Significance of the study**

As a result of high level of economic development and urbanization, the demand for foam products is increasing from time to time and is forecasted to grow in the year to come. It is essential to analyze supply chain management will provide economical and appropriate cost effective, timely delivery and quality production system that will help all the parties involved in the foam production and acquisition process particularly the owner and employees.



The researcher believes that the study will create awareness about the concept, principles, and benefits of supply chain management for Ethiopian foam industry. The study helps foam manufacturer firms to understand how customer relationship, strategic supplier partnership, material management, information sharing and corporate culture versus supply chain management practices can play a prominent role in foam manufacturing performance improvement and increases the industry competitive positioning in the global market.

Managers and owners might also use the findings of this study to evaluate themselves, determine their competency needs and integrate supply chain management with business strategy. Finally, this study might also give green-light for academicians to further research on related areas in Ethiopian foam business context. Generally, the results of the study will be useful to the following categories.

-Academics, scholars or students who are interested in conducting research on supply chain management practices.

-Foam business managers who want to integrate supply chain management into their business strategy.

-It will remain the concerned of management to give due consideration on the desired supply chain management.

-it will contribute to the outcomes of the company's product.

-it will help as a base for other research that will study on the same related topics.

-provide appropriate recommendation based on findings of the study so that the firm could achieve its objective.

-Companies who engaged themselves in manufacturing business and who have planned to implement supply chains management concept, can approach their strategic planning based on the finding of the study.

In view of the above facts, this study would serve as an additional input for the researchers in the area of study different aspects of SCM through developing standardized system.

## **1.8. Definitions of Terms**

Definition of terms encompasses of theoretical and working definitions. Theoretical definitions of terms are definitions from the theoretical perspectives which needs explanations of cites. Whereas, working definition of a practical definition is given by the researcher as per the context of the text. Accordingly, for this thesis, theoretical definitions of words are used and are described below:-

**Supply chain:** - “is understood as a bridge between demand and supply it conveys the demand to the supply point and delivers the supply to the demand point. We can say that it is a network of facilitates and distribution options that perform the functions of procurement of materials, transformation of these materials into intermediate and finished products and the distribution of these finished products to customers(Altekar, 2005:3)

**Supply Chain Management:** - “can be seen as the process of strategically managing the procurement movement and storage of materials, parts and finished inventory (and related information flows) through the organization and its marketing channels in such a way that current and future profitability are maximized through the cost effective fulfillment of orders.”(Altekar, 2005:4)

**Collaboration:** -Collaboration begins when two or more organizations willingly decide to mix their assets in an effort to construct a new and more efficient, operational, and advantages in a significant business manner (Ahmed and Ullah, 2013)

## **1.9. Organization of the paper**

This research paper will have five chapters: the first chapter will be the introduction part and includes the general background of the study, statement of the problem, scope and limitation, significance of the study, of the study and organization of the study.

The second chapter will review the related literatures. Here, comprehensive literatures will be reviewed from books; journals and other possible sources to broadly understand about the definition and concepts of supply chain management in regard with its use and practice. Previous researchers on this area will also be given due emphasis.

Chapter three will cover methodology which contains the study area, the population of the study, data collection procedure, and research design and data analysis.

Chapter four will mainly focus on presenting, analyzing, and interpreting the results of the study.

The fifth chapter will be the conclusion and recommendation part. Here, conclusion will be drawn from the comprehensive literature review and results of the analysis. Suggested solutions will be recommended accordingly as per the result of the study.

## **CHAPTER TWO**

### **2.1. REVIEW OF RELATED LITERATURE**

#### **2.1.1. Definition of Supply Chain:**

There are many definitions of supply chain management in the literature today (Wisner, Leon and Tan 2005 p.5). As (Schary, 1998 p.40) cited in American Based Research Journal, 2013, the extent of supply chain extent the whole set of business from procurement of material and product components to delivery of finished product to a customer. This means that supply chain starts from procurement of raw materials in order to convert it to finished products to deliver the product to the end customers.

The supply chain encompasses all activities associated with the flow of goods from the raw materials stage (extraction) through to the end user. Included in the flows are material, information, and money, both up and down the supply chain flow both up and down the supply chain (Wisner et al 2005; Wei, and Xiang). This shows that, not only the raw materials are managed in the supply chain management but also the information and the fund need to be managed properly.

Caution buyers often buy products on the basis of reasonable cost; quality availability maintainability reputation that meets hoping that the products/service meets their requirement and expectations companies and their supply chains that meet the above requirements will be successful. In this regard it must be noted that some company may be enforced to return products or warranty repairs or just through products away or recycle them. These reverse logistics are also part of the supply chain. From the definition of SCM it is understood that core activities of SCM are planning, sourcing, execution, delivery and return, all designed to satisfying customers need and to maximize profit margins at all levels of the supply chain.

The supply chain activities begins with firms engaged in extraction of raw materials from the ground such as iron ore, oil, wood, and food and there after offering them to whom raw material

manufactures, this firms, acting on the basis of purchase orders and specifications they have received from component manufacturers, convert the raw materials into materials that are usable buy these customers (material like sheet steel, aluminum, copper, lumber and inspected food stuffs) the component manufacturers inconformity with orders and specifications from their customers (final product manufacturers) produce and such intermediate components (electrical wires, fabrics, plumbing items, nuts and bolts , molded plastic components, processed foods). Other companies are engaged in the production of final products. Such companies include IBM General Motors, Coca-Cola and the like. These companies assemble finished products and then sell them to distributors, wholesaler and retailers. The retailers are the last stage in the chain which provides product /services to end –users ((Wisner et al 2005).

This shows that, supply chain can be described as the network of all individuals, organizations, resources, activities, and technology involved in the production and sale of a product. The starting point could be from the delivery of source materials from the supplier to the manufacturer and subsequently through whole Seller and retailer to eventual delivery to the end user/consumer. One key of the supply chain, not clearly mentioned thus far, is distribution channel which is concerned with getting the final product from the manufacturer to the consumer.

Thus, the series of companies that eventually make products and services available to consumers, including all of the functions enabling the production, delivery, and recycling of materials, components, and products, and services is called a supply chain.

So, now that general description of a supply chain has been provided, what is supply chain management? A number of similar definitions are available in the literature and among various professional associations.

### **2.1.2. Definitions of Supply chain management:**

Supply Chain Management means changing a firm’s “supply chain” into best, competent, customer-satisfying practice, where the success of the whole supply chain is more significant than success of each individual department (Bala, 2014). This shows that the benefit of the business is not for the individual company but also for the whole firms participated in the supply chain.

“Supply Chain Management (SCM) includes the logistics flows, the customer order management, the production processes, and the information flows necessary to monitor all activities at the supply chain nodes” (Ensermu, 2015 p.19). This shows that the logistics flows; transportation, inventory, procurement, warehouses are parts of the supply chain management. In addition the information flows and the production processes as well are included in the management of the supply chain.

The institute for supply chain management describes supply chain management as “the design and management of seamless, value (Wisner,etal, 2005). This explains that in all the process of the supply chain there is an addition of value in all stages of the supply chain to bring customer satisfaction.

The supply- chain Council’s definition of supply chain management is “managing and demand, sourcing raw materials and parts, manufacturing and assembly, warehousing and inventory tracking, order entry and order management, distribution across all channels, and delivery to the customer”(Wisner et al, 2005).

Other authors define, Supply chain management as technique used to participate suppliers, manufacturers, warehouse and store to enable the production and distribution of merchandise with the quality needed, and timely reach the exact place for cost efficient and quality service satisfaction. (Chopra &Meindl 2016 p.15-16)

Finally, in a research paper authored by a notable expert in supply chain management, Dr. Hau Lee and his coauthor Mr. Corey Billington as cited in Wisner,etal (2005) define supply chain management as “the integration activities taking place among a network of facilities that procure raw materials, transform then final products, and, then final products, and deliver products to customers through a distribution system”(Wisner, et al 2005).

In brief, supply chain management is the coordination, direction and control of material, information, and finance as they move in a process from supplier to manufacturer to whole seller/ retailer to end user/ consumer. The three mail flows of the supply chain are the product flow, the information flow and the finances flow. The main activities of supply chain management reveals around coordinating and integrating these flows both within and among collaborating firms.

### **2.1.3.The objective of supply chain**

The purpose of every supply chain should be to optimize the entire benefit produced by the chain. These benefits or value also referred to as the supply chain surplus. The surplus equates to the difference between the amount the final consumer pays for the end product and the costs the total supply chain incurs in filling the customer's demand. (Chopra, &Meindl, 2016).

#### **2.1.4. Importance of supply Chain Management**

Council of Supply Chain Management Professionals (CSCMP) (2017) as cited in(Chopra, &Meindl, 2016).indefines Supply chain management as a significant aspect of most businesses and is necessary or indispensable for companies' successes and customer satisfaction. Effective SCM seeks to achieve furthering customer service through delivering the right product, in the right quantity, at the right time and place, ensuring after sale support; reduction in operating costs through decreasing purchasing cost, production cost and total supply cost; improving financial position through increasing profit margins decreasing fixed assets and increasing cash flows; ensuring human survival through helping sustenance of human life, improvement in human health care, protecting humans from climate extremes; improving quality of life through fostering economic growth, improving standard of living contributing to job creation and providing opportunity for the development of energy efficient supply chain that require fewer resources. Managing the supply chain helps to exert activities efficiently and effectively, as a result doing activities efficiently minimizes costs.(Chopra, &Meindl, 2016).

#### **2.1.5. Collaboration**

As Bowersox, et al (2003) cited in Ahmad &Ullah, (2013), Collaboration begins when two or more organizations willingly decide to mix their assets in an effort to construct a new and more efficient, operational, and advantages in a significant business manner. This means instead of doing business individually it is more efficient to collaborate with other organizations, in order to gain mutual value through the supply chain. (Ahmad&Ullah, (2013).

Another source points out that, in today's complex and competitive commercial situation, collaboration is the driving force behind effective SCM. In the context of supply chain, collaboration is to share the joint objective, intelligence, commitment, trust and admiration, skills and awareness, and intellectual agility. Supply chain collaboration offers paybacks to the chain participants about

topics in business area. Especially in today's difficult complex situation, collaboration is the driving force behind actual supply chain management. (Tsai, 2009p.2). This means that, without collaboration with other trading firms doing business in this global world is very difficult. The competition becomes severe unless the business is collaborating with other trading partners.

Furthermore, Benavides, Eskinazis, & Swan (2012) emphasize that, Companies that collaborate effectively throughout the supply chain have gained substantial reductions in inventories and costs, as well as improvements in speed, service levels, and customer satisfaction. This means that when firms collaborate, because of effectiveness costs such as inventory will reduce. The responsiveness to the end customer will increase as a result customer satisfaction will be fulfilled.

Collaborative manufacturing practices have been recognized as enhancing the achievement of value chain. It also enlarges profitability and addresses the ever changing market demands. It has been seen as a new method for gaining competitive advantage by the companies. Presently, industrialized firms have laid emphasis on collaboration in supply chain as a means of accomplishing competitive goals. (Chopra &Meindl 2016 p.273). The same authors further state that, sellers and buyers in a supply chain may work together along any or all of the following four supply chain activities:

Strategy and planning- the scope of the partnerships is determined by the partners. In this joint plan, significant activities such as promotions, new product introductions, store openings/closings and changes in inventory policy that affect demand and supply can be identified by the partners.(Chopra &Meindl 2016).

Collaborative sales forecast that emanates from retail level shops constitutes realistic customers' demand. This estimate is then changed to a collaborative order plan that constitutes future orders and delivery necessities based on the sales forecasts, inventory positions, and replenishment lead times. (Chopra &Meindl 2016).

Execution – the success of actual orders can be obtained from the strong forecasts related to production, shipping, receiving and stocking of products. (Chopra &Meindl 2016).

Analysis- identifying expectations and evaluating “metrics” used to assess performance or identity trends is the key analysis tasks.(Chopra &Meindl 2016).

The same author further points out that, the significant aspect of successful collaboration, is to help identification and resolution of exceptions. These exceptions refer to a gap between forecasts made by the two sides or some other performance metrics that may fall or likely to fall outside acceptable bounds. In the present globalized market situation, supply chain collaboration is a warm issue today. Companies that collaborate effectively throughout the supply chain have gained substantial reductions in inventories and costs, as well as improvements in speed, service levels, and customer satisfaction (Benavides, Eskinazis& Swan 2012).

## **2.1.6. Supply Chain Management Practices**

### **2.1.6.1. Information sharing**

As Mendelson, 2000, p.515; Tushman and Nadler, 1978 is cited in (Fawcett,Magnan, &McCarter (2005) Paul End....2007 p.359,) “To respond productivity to rapid change, a company must ‘be aware of new information generated in its environment and adopt structures that enable fast decision making...and practices that reduce information overload”.

The above mentioned authors point out that a company’s marketing effort should take into consideration the rapidly changing business environment towards the objective the company must be knowledgeable of new information brought out to its environment. For this reason it must implement structures that facilitate fast decision making. Thus, avoiding practices result in information overload.

Due to advances in the information technology, information sharing has become a key factor in collaboration. Suitable information system helps supply chain collaborations to link supplier, manufacturers, distributor and customers in order to achieve optimum productivity, overall satisfaction and pleasant relation. The media could be internet, decision support systems, online service and the like. Supply chain partner using IT can share information relating to customer demand, resource planning, automatic ordering, order-status tracking, invoicing, electronic payment and countless of other information. ( Ahmad andUllah 2013)

Information sharing has been defined as “the accesses to private data between business partners thus enabling them to monitor the progress of products and orders as they pass to various private business practices in the supply chain” ( Ahmad andUllah 2013)



Efficient and effective information sharing is a reflection of a firm's ability to provide timely information to its collaborative partners, thus contributing to the achievement of an integrated supply chain. ( Ahmad, Ullah 2013).

As forester cited in (Sahin 2002), "management is on the verge of a major breakthrough in understanding how industrial company success depends on the interaction between the flows of information, materials, money, manpower, and capital equipment."

### **2.1.6.2. Customer Relationship**

Customer relationship (CR) in the site of (Kotler, p.118) is " the process of carefully managing detailed information about individual customers and all customer "touch points" to maximize loyalty"

This refers to practices, strategies, and technologies that companies employ to manage and analyze customer interactions and data in order to enhance business relationships and customers, retention as well as enhancing business development. Customer relationship management is designed to access information on customers across varied channels contact points between customer and the company including web site, telephone, live chat, direct mail, marketing materials and social media.

Customer relation management also offers thorough information to the company's sales force linking to customer personal information purchase history, buyers selections and benefits (Rouse, 2014)

According to Jeffery (2002,) building customer relationships entails implementation of the following principles:

Customers lack of loyalty, since they have access to many choice of goods/services. And this required effective communication across all customer touch –points. All suppliers face difficulties in making effective communication between the parties involved, to achieve profitable and long term relationships.

Communicate like human being. When talking to a customer communication must be effective facing the customer straight ensure to use their names, humility is essential, putting yourself in the customers feet. (Jeffery 2002)

According Jeffery(2002), learn about your customer- know your customer thoroughly and address your customer by name, learning facts about their wants and desires, in detail know customers wants and preference.

Live for customer complaints – live up to expectations of your customers always paying due attention to their complaints or criticism. Customer criticisms are building blocks that can help improve your performance. Stay in regular contact with your customers be alert to closely follow your customer needs. Treat every communication as a grand opportunity. To identify possible complaints in order to make the necessary corrections. (Jeffery 2002)

According to Jeffery (2002), build trust with customers –Be committed to your customers, as this is crucial to successful long-term relationships. This results in increased profit, customer retention, willingness to refer and recommend.

Practice inbound marketing- to convey valuable content use pull-marketing instead of push marketing. Attract your customers through the use of effective media such as blog posts, video, e-books and whitepapers showing. (Jeffery 2002).

### **2.1.6.3. Strategic Supplier Partnership**

Strategic supplier partnership(SSP)is defined “as the long term relationship between the organization and its suppliers.”Li, Suhong, Nathan, Nathan, Rao(2006, p.109). The writers further state thatit is designed to influence the strategic and operational capacity of individual participating firms to help them achieveimportant ongoing advantage.

As Winser et al (2005), states the primary goals of purchasing are to ensure uninterrupted flows of raw materials at the lowest total cost, to improve quality of the finished goods produced, and to optimize customer satisfaction. Purchasing can contribute to these objectives by actively seeking better materials and reliable suppliers, working closely with and exploiting the expertise of strategic suppliers to improve the quality of raw materials, and involving suppliers and purchasing personnel in new product design and development efforts. Purchasing is the crucial link between the sources of supply and the organization itself, with support coming from overlapping activities to enhance

manufacturability for both the customer and the supplier the involvement of purchasing and strategic suppliers in concurrent engineering activities is essential for selecting components and raw materials that ensure that requisite quality is designed in to the product and to aid in collapsing design –to production cycle time.

As Campbell, 1985; Cunningham, 1982 cited in (Deshpande, (2012 p.5). “One of the important aspects of strategic purchasing involves selecting specific suppliers and maintaining effective interactions between suppliers and buyers”

Product quality, willingness to share technologies and information, quality- high consistent –it can be affect the finished goods, Cost- unit price of the material, reliability- financially stable order system and cycle time delivery lead time should be short, capacity to meet to fill orders to meet requirements and the ability to fill large orders if needed, communication capability, location for delivery lead time, service example, warranty. (Winsner et al, 2005).

According Massetti,(2016)six essential attributes are described regarding strategic supplier partnership. These are enumerated Shared vision & strategy

Vision is the most basis feature of a relationship between two companies for their business. The visions of the two companies involved must align or overlap in their respective market to ensure that the partnership can develop and remain strong. The relationship must incorporate the strategic plans of each entity.(Massetti, 2016 )

Shared Investment the partners must support their vision, strategy, and plans with the required amount of investment in human and non-human resources. With due commitment with to keep the business going.(Massetti, 2016)

According to Masseti, (2016), Shared planning & Management Systems once, they align their vision and strategy, the detailed plan must be agreed upon. The plan expects the necessary resources, goals for key activities, and responsibilities of both parties. Planning has to be mutual and the parties must be actively involved in the entire plan.

Shred Communications communication involves a high level of collaboration on the part of the supplier and customer to be successful. This requires structured and managed method to communications and commitment across all aspects of the relationship. (Massetti, 2016)

Shared Risk all business is subjected to risk. The risk becomes even more critical when two parties collaborate to a new undertaking. This means parties must give serious considerations to the risks that their business may face (Massetti, 2016).

Shared Reward supply chains with close, assigned and mutually – beneficial relationships will certainly achieve the most successful relationships result in increased mutual value than lesser relationships. When established properly the partnership will not face undesirable argument concerning who gets what. The benefits accrue to each partner are derive from market share growth access to technology and improved profits (Massetti, 2016)

In making decision relating to strategic partnership business, the parties must carefully consider the aforementioned elements to ensure that the partner selection is well found.

#### **2.1.6.4. Material flow Management covers the following**

According to Rahman(2014), the definition for “material management is the process which integrates the flow of supplies into, through and out of an organization to achieve a level of service which ensures that the right materials are available at the right place at the time in the right quantity and quality and at the right cost”. He extended his idea that it contains the functions of procurement, materials handling and storage, production and inventory control, packaging, transport and connected information systems and their functionall through the supply, manufacturing, service and distribution sectors. This shows that managing the material holds majority percentage of manufacturing business activities.

According to Coyle et al (2013), logistics channel is the network of intermediary involved in transmission, storage, handling, communication, and additional function that add to the efficient movement of goods. To control or to manage logistics of the incoming, the sorting of logistics into material management is beneficial. Normally, there is a difference between the movement and storage of raw materials and the movement of finished products.

##### **2.1.6.4.1 Transportation**

Transportation is a key activity in the logistics system, often involving substantial cost component. Physical movement or flows of goods are given serious considerations together with the network that transports the product. The network comprises trucking organizations that provide service for

shipping firm. The logistic manager is charged with the responsibility of selecting the type of carriers used in transporting raw material, components and finished goods. Furthermore the logistics manager may also engage in developing private transportation as an option.(Coyle et al 2013)

#### **2.1.6.4.2 Storage**

Storage has dual functions, the first being inventory management while the other relate to warehousing. There is a direct link among transportation, level of inventory and number of warehouses needed. For instance, if a certain company is using slow means of transportation like shipping lines, they need to have high amount of inventory levels and more warehousing. In order to minimize these impacts this company may consider utilizing quick transportation methods.(Coyle et al 2013)

#### **2.1.6.4.3 Packaging**

According Coyle et al (2013), Packaging is another area of major concern of logistics. It protects the product at the time of moving goods and storage. As the nature of transportation mode selection affects the packaging, the type of packaging requirement needs careful attention. For instance, to transport by rail or ocean it needs additional packaging expenditures. This is to avoid the possibility of damage to the goods. In this regard, the managers might choose the transportation mode such as, air and ocean, which can reduce the cost of packaging since it has less possibility of damage.

#### **2.1.6.4.4 Materials Handling**

Another aspect in logistics activities is materials handling. It is a key function which needs to be given critical attention. It plays a pivotal role in designing warehouse and in facilitating warehouse operations. Timely movement of goods into, and out of warehouse in order to make them available at the required places is a major concern for logistics managers.(Coyle et al 2013)

Decisions regarding what type of mechanical equipment and for which type of goods usually present a big challenge to logistics managers, their primary objective being ensuring suitability of the equipment used and the storage facilities.(Coyle et al 2013)

#### **2.1.6.4.5 Inventory control**

Another focal area in logistics activities is inventory control. Both warehouses and manufacturing facilities contains inventory, which has two aspects assuring sufficient inventory levels and certifying inventory accuracy. To assure adequate inventory levels, the logistics manager need to either place replenishment orders or schedule production in order to bring inventory levels up to a prearranged level. (Coyle et al 2013)

#### **2.1.6.4.6 Order fulfillment**

According to Coyle et al (2013), order fulfillment is another area that logistics might control. Filling and shipping customer orders, activities are included in these accomplishments. Order fulfillment is an important physical distribution factor to logistics. Timely order fulfillment is vital to logistics and since the time between the customers requisition and delivery is very important for satisfactory fulfillment of the order.

#### **2.1.6.4.7 Forecasting**

Accurate demand forecasting is a crucial management activity in relation to inventory requirements, materials and essential components for inventory control efficiency and customer satisfaction. To ensure proper inventory levels logistics personnel, in collaboration with marketing department, should develop inventory forecast.(Coyle et al 2013).

#### **2.1.6.4.8 Production planning**

Production planning and scheduling is becoming of increasing interest for logistics managers. After a forecast is finalized and the present inventory on hand and usage rates are determined production managers can calculate the number of units to be produced to ensure adequate availability at the required sales centers.(Coyle et al 2013).

#### **2.1.6.4.9 Procurement**

According to Coyle et al (2013), another activity included in logistics activity is procurement. The reason why procurement is included in logistics is that, the distance of inputs for an organization's manufacturing requirements involve cost.. The total logistics costs will be affected by the transportation and inventory costs and the quantities procured. For instance, purchasing of manufacturing component parts from China, from the United States might have a lead time of

some weeks. Monitoring properly the procurement process would prevent a plant shutdown. Purchasing is a technical thing which requires skilled and knowledgeable personnel, who can understand and implement appropriate procurement procedures, identify reliable sourcing, select competitive suppliers, to achieve monitor contract implementation, to ensure receipt of the right product, at the right price, in the right time with the ultimate objective of satisfying customers' requirements.

(As Wisner, et al (2005) The main aim of purchasing is to maintain continual flows of raw materials at the lowest total cost, to improve quality of the finished goods produced and to improve customer satisfaction. To better achieve secure quality raw material objective, purchasing department should seek better materials and reliable suppliers. In this process identification of reliable suppliers that are willingness to share its knowledge and expertise so that the purchaser can gain knowledge in the area of designing new product and development.

- 1) The communication process with the customer should be effective to attract and convince the customer to take order. Customers have varied attitudes, temperaments, and moods. Consequently, making them happy is not that easy. Irrespective of how you fill you must be always positive and professional
- 2) The quality of service an organization offers to its customers

Maintenance of acceptable inventory level and suitable location are vital to meet customer requirements. The logistics primary concern is delivering of the right product. In addition logistics main concern is guarantee the customer that the products order will be delivered in time. This necessitates coordination among inventory control, manufacturing, ware housing, and transportation to meet delivery time and products readiness

Another aspect of customer service is concerned with the level of service the organization commits to its customers. These service levels may embrace order fill rate, and on time delivery rate. Considerations must be given about inventories, transportation and warehousing to ensure product availability at customer levels. Customer service is not usually the sphere of logistics. However, logistics plays a key role in ensuring that the customer receives the right product at the right time, the right quantity. It is therefore, crystal clear that logistics decision about product availability of the needed products at the required place.

#### **2.1.6.4.10 Facility Location**

Determination of plant site location is another critical activity to logistics, because changing location can adversely affect relationships. Between facilities and supply chain point, as well as increased transportation cost service, together with customer service and inventory levels. Within view, must give due consideration to facility location.

#### **2.1.6.4.11 Other Activities**

Managers may also need to take into account logistical activities such as parts and service support, return goods handling, and salvage and scrap disposal. This necessitates the need to plan for and adopt a well- integrated logistical system that will enable the logistics managers to return used, broken, or obsolete products to the supplier for disposition. In addition managers need to give attention to reduce environment pollution. As Lewis and Gretsakis, 2001; Sarkis, 1995, 2001). Cited in (Zhu, 2005), with increased pressures for environmental pressures for environmental sustainability, it is expected that enterprises will need to implement strategies to reduce the environmental impacts of their products and services.

### **2.1.6.5. Corporate culture**

In establishing collaborative relationship, partners must realize that organizational culture can either be a bridge or a barrier. This implies that companies must give serious thought to their firms' cultural suitability as chain cultures can have direct or indirect influence upon supply chain performance. This being done, managers can setup supply chain arrangements and begin to consider working internally to train and develop their employees so that, educating one another by sharing knowledge and experience becomes possible.

According to Larry, (2017) Organizational culture consists of the following seven attributes:

- 1) Innovation (Risk Orientation):** Change oriented companies urge their employees to be creative and risk takers in carrying out their jobs, such that they become innovative.
- 2). Attention to Detail (Precision Orientation):** This type of organizational culture gives emphasis on accuracy, thus demanding that employees work without any fault. For this type of culture



precision takes high priority. Consequently, employees are expected to perform their duties to the highest possible degree of exactness(Larry, 2017).

**3). Emphasis on outcome (Achievement Orientation):** Result oriented companies focus on mere output rather than how that output has been achieved. Their objective is to maximize sales order at any cost, thus characterizing cultural practices that emphasizes outcome(Larry,2017).

**4).Emphasis on people (fairness orientation):** People oriented managers take their employees' interest into consideration when making any decision that affects their people. In so doing they handle their employees in a manner that is in keeping with human respect and dignity(Larry,2017).

**5).Teamwork (collaboration):** companies who appreciate the value of teamwork apply participatory approach in decision making. Here employees' opinions and suggestions are listened to and where appropriate, taken into consideration in the firm's decision making process. This style of management will enhance employee morale, improved relationship both with colleagues and supervisors alike.

**6). Aggressiveness (competitive orientation):**This aspect of organizational culture can reveal whether or not group efforts are directed towards overtaking the company's competitors or remain satisfied with current business affairs. Companies that aim at outsmarting competitors give high priority to aggressive marketing effort at any cost(Larry, 2017).

**7).Stability (Rule orientation):** a company with high value on stability is characterized by adherence to policies and procedures, predictability, and bureaucracy, thus, providing regular and knowable levels of output (Larry, 2017).

### **2.1.7. Drivers of supply chain performance,**

Chopra and Meindl (2004) state that, the strategic fit requires that a company achieve the balance between responsiveness and efficiency in its supply chain that best meets the needs of the company's competitive strategy. To understand how a company can improve supply chain performance in terms of responsiveness and efficiency, we must examine the six drivers of supply chain performance namely: facilities, inventory, transportation, and information pricing and sourcing.

First we define each driver and discuss its impact on the performance of the supply chain.

1. Facilities are the places in the supply chain network where product is stored, assembled, or fabricated. The two major types of facilities are production sites and storage sites. Whatever the function of the facility, decisions regarding location, capacity, and flexibility of facilities have a significant impact on the supply chain's performance (Chopra and Meindl, 2004).
2. According Chopra &Meindl (2004) inventory is all raw materials, work in process, and finished goods within a supply chain. Inventory is an important supply chain driver because changing inventory policies can dramatically alter the supply chain's efficiency and responsiveness.
3. Transportation plays a key role in moving goods from place to place in the supply chain. A mode of transportation has varied combinations and routes with its own performance features (Chopra and Meindl 2004)
4. Information comprises of data and analysis regarding facilities, inventory, transportation, and customers throughout the supply chain. As information directly affects each of the other drivers, it is potentially the biggest driver of performance. (Chopra and Meindl 2004)
5. Pricing is the amount of money that the supplier set in order to charge the customer. Pricing has implications on customers' behavior. And in consequence has an implication, on demand/supply chain performance. (Chopra, &Meindl, 2016)
6. Sourcing is the determination of who will accomplish a specific supply chain activity, such as production, storage, transportation or the management of information. Such decisions establish what activities a firm perform and what activities the firm out sources. (Chopra, &Mendiel, 2016).

These drivers not only determine the supply chain's performance in terms of responsiveness and efficiency, they also determine whether strategic fit is achieved across the supply chain.

### **2.1.8. Bullwhip effect.**

According to Winser et al (2005),“if there were long time intervals between orders, the members of the supply chain are faced with much uncertainty” and he further stated that “about the level and pattern of the demand, which usually resulted in higher inventory or stock out costs, a phenomenon known as the bullwhip effect”(Winser, et al 2005)

### **2.1.9. Integration**

Supply chain partners are said to do collaborative work together when they make joint decisions in the area affecting delivery, inventory, production and purchasing, as this has implications on the profitability of the supply chain. Failure or improper performance of one activity would mean disruption in the flows of goods and/or services along the chain, thus endangering the effectiveness of the entire supply chain. This indicates the need for supply chain integration. Supply chain integration requires that supply chain management be part of all the firms' strategic planning process. This practice involves that the participants jointly set objectives and policies directed at satisfying final customer needs. The ultimate goal of supply chain partners is to maximize total supply chain profits through, "optimal purchasing quantities, product availability, service levels, lead times, production quantities and technical and product support at each tier within the supply chain (Winston, et al 2005)

### **2.1.10. Challenges of SCM to managers**

According to Handfield and Nichols (1999), it is obvious that in implementing the strategy of the supply chain presents an increasing challenge due to globalization of manufacturing operation which requires a global procurement network that can support and react to a firm's supply chain needs. According to many procurement officers, selecting strategic suppliers that provides manufacturing locations with consistent global quality and a reliable local service is a challenge.

For many academics, and practitioners, the topic of integrated supply chains embraces great appeal. Although like the difficulty involved in applying this strategy is obvious.

- 1) Integrated management of information and materials
- 2) Reducing cost waste

The integrated management information and materials across the supply chain offers the benefits of increasing the value-added by supply chain managers, reducing waste, reducing cost and improving customer satisfaction. However, the process of applying an integrated supply chain has been revealed to be very problematic. In the one hand problems happen in the application of information systems,

such as the appropriate information is not obtainable to the people needing it, on the other hand lack of trust and fear that the information will be exposed to opponents.(Handfield and Nichols ,1999).

## **2.2. Conceptual framework of the study**

The dimensions of supply chain management practices

According Balal and Adam, (2014), “many authors studied supply chain management practices and there are various elements and dimensions have measured or used to measure supply chain management practice” one of dimensions of supply chain management practices is: information sharing, customer relationship, strategic supplier partnership, material flow management and corporate culture as fundamental variables of supply chain management practices.

In the present study according to model of Balal and Adam (2014) ,variables of information sharing, customer relationship, strategic supplier partnership, material flow management and corporate culture as fundamental variables of supply chain management practices



## **CHAPTER THREE**

### **Research Methodology**

#### **3.1. Introduction**

This chapter is to present the methodology used in this study and the choice of the suitable research method for the thesis. The research instrument, sampling design, and data collection procedure and data analysis techniques are the main sections that are going to be discussed in this chapter.

#### **3.2. Research Design**

The objective of this research is to assess the supply chain management practices of Rainbow Foam and Plastic Industry P.L.C. Consequently, the research attempted the practices of supply chain management practices and the awareness of the firm about the concept of supply chain management.

Accordingly, the type of the research design is descriptive type of research design. And the research approach is mixed qualitative and quantitative

### **3.3. Population of the study**

Sampling is the process of selecting some element from the entire population. The target population for the survey study is the employees (327) three hundred twenty seven. The company workers and management bodies are the main target population. In this study four staff members from the leadership positions: Deputy Manager, Marketing Manager, Sales Manager, and Production manager and five branch supervisors were interviewed.

### **3.4. Sampling techniques and sample size**

Moreover, 174 employees from the main and branch offices of the factory were consulted. The study considered one hundred seventy nine (174) employees from a total of three hundred twenty seven (327) serving in the main office and in different branch offices of the factory. A sample the 174 sample populations were chosen through convenience sampling technique. The study conducted on a sample of 4 people, who serve Rainbow Foam Plastic Industry P.L.C. at managerial level. They are the Deputy Manager, Marketing Manager, Sales Manager, and Production manager and five supervisors of the branches. In order to determine the sample size Yamane's (1967) sampling size determination formula is used. This formula is used at 95% of confidence level, and at 0.05, level of significance.

$$N = \frac{N}{1 + N(e)^2}$$

$$1 + N(e)^2$$

Where: n is the sample size and e is the level of precision

$$n = \frac{327}{1 + 327(0.05)^2}$$

$$1 + 327(0.05)^2$$

$$= 1 + 327(0.0025)$$

$$= 1 + 327(0.0025)$$

$$= 1.8175$$

=327/1.8175

=179

### **3.5. Sources of data**

The researcher used both primary and secondary data. For primary data, questionnaire and interview methods are used to collect the necessary primary data the information collected through the two tools will be cross- referenced and this helps to check. The researcher also used secondary sources of data like, books, web sites, journals, articles, company brochures which supported the study.

#### **Questionnaire**

The questionnaire has two parts. In the first part, the respondents were asked to report demographic information such as sex, age, work experience and educational level. Part two consists of items related to supply chain management. For the primary sources, the researcher designed questionnaires. The questionnaire was translated into Amharic in order to find adequate information. Then it was distributed to one hundred ninety (190) employees. In gathering the required data based on five supply chain management dimensions (information sharing, Customer Relationship, Strategic Supplier Partnership, Material flow Management and Corporate Culture). Rating responses, the writer used 5 likert scales. Regarding strategic supplier partnership the information was collected only from Deputy Manager through interview.

#### **Interview**

An exploratory interview was conducted with four purposely selected managerial level staff and five branch supervisors. (Deputy Manager, Marketing Manager, Sales Manager, production Manager and five branch supervisors. This is done with the intention to find relevant and adequate information on the study conducted. The interview questions are designed in accordance with their tendency to get information about what this study is trying to find out. Moreover, the researcher used this group of individuals during exploratory studies to identify the major dimensions to be incorporated in the instruments and to get their perspective, view, and opinion on supply chain management practices.

#### **Review of secondary data**

The first duty in the data collection stage has been reviewing secondary data, books, journals, thesis, has been used for secondary sources

A survey using self-administered questionnaire is conducted to assess supply chain management practices in rainbow Foam and Plastic Industry P.L.C. Respondents are asked to indicate their opinions for each listed item in the questionnaire by choosing one among the following five available options to them: (5) very high, (4) high, (3) average, (2) low, and (1) very low. In this study, a modified and used to measure the practices of supply chain management towards the likert scale questionnaire is adapted from the work of Wondimeneh (2013), and Sami (2013) towards material management, corporate culture, and strategic supplier partnership, information sharing respectively.

The questionnaire consists of four questions. The first one is designed to collect the related demographical data of respondents. The second section is designed to collect data about strategic supplier partnership, the third section is designed to collect data about customer relationship, the fourth one is designed to collect data about information sharing, the fifth section is designed to collect data about material management, and the sixth section is designed to collect data about corporate culture.

The researcher followed the following procedures: designed the questionnaire and the interview questions; approached the informants and got their confirmation; distributed the questionnaires; and follow up and collected the response.

Concerning the interview, the researcher did fix an appointment with the interviewees. And on the date of appointment, the researcher nicely and appropriately dressed and arrived in time. The researcher took due care to ensure conducive atmosphere for ease of communication.

### **3.6. Procedure of data collection**

To collect data, questionnaire and interview methods are used. The information collected through the two tools will be cross-referenced and this helps to check the credibility of the study.

Both primary and secondary sources of data are to be used. Books, journals, thesis, will be used for secondary sources, while, for the primary sources the researcher will design close and open ended questionnaires and both structured and unstructured interview were used in English, but to find adequate information from the ample population translated the question in to Amharic, Then



distributed to one hundred seventy nine (174) employees, who were selected in convenience sampling. In gathering the required data based on five SCM dimensions (Information Sharing, Customer Relationship, Strategic Supplier Partnership, Material Flow Management and Corporate Culture). Rating responses, the writer used of 5 likert scale. Regarding strategic supplier partnership the information was collected only from Deputy Manager through interview because technical workers may not have adequate information on this issue.

The researcher interviewed four managers (Deputy Manager, Marketing Manager, Production Manager, Sales Manager and 5 Branch Supervisors.) This is done with the intention to find pertinent and adequate information on the study conducted. The interview questions are designed in accordance with their tendency to get information about what this study is trying to find out.

### **3.7. Methods of data analysis**

The data analysis technique is both qualitative and quantitative. The data gathered using words for qualitative research method. The researcher collected data using questionnaire and structured interview. Thus, the method of data analysis of the study is descriptive method. During data analysis the researcher used frequency, percentage and means to analyze the data and also triangulate the questionnaire with the interview.

### **3.8. Validity and Reliability**

#### **3.8.1. Validity**

**Validity** determines whether the research truly measures that which it was intended to measure or how truthful the research results are.

To maintain the validity, the researcher will carefully formulate the questions according the literature review and will give the questionnaire to the professional before distribute it to the participants. And, a pilot study will be carried out to pre-test the instruments. Items will be sent to the pilot group to obtain ideas for amendment. And the population units in the pilot study will not be included in the final sample.

### **3.8.2. Reliability**

According to Cameron et al (2007), as cited in Araya Khailu, (2012)“reliability is a measure of the extent to which the result of the research can be repeated with the same result if the research is replicated”.

The researcher believes that this study is reliable as the respondents selected for the interview based on their position related to SCM practices in their firms and the sampling size for the questionnaire is representative. Basically the respondents are involved in the business and therefore given credible answers. The same answers would probably be given to another independent researcher. Furthermore, ambiguous terms were not used in questionnaires to avoid confusion.

### **3.9. Ethical consideration**

First the researcher presented the letter that was given from the university after the approval of the letter from the authorized person of the organization, and the researcher asked the participants consent. Also, the researcher ensures that the respondents were aware of the objective of the research and their contribution for the completion. Furthermore, the researcher treated the respondents with respect and good manners. This helped to get frank responses to the questionnaire. The secrecy of the participants in the study was protected and the responses were kept confidential.

## **CHAPTER FOUR**

### **Results and Discussion**

#### **4.1. INTRODUCTION**

This chapter deals with the presentation of data analysis, findings and interpretation. The purpose of this study is to assess supply chain management practices of Rainbow Foam and Plastic industry PLC. This section is divided into two parts which present the findings of the study. The first part presents the respondents profile/background information. The second part presents the findings which are related with the assessment of supply chain management practices, these are: Strategic Supplier Partnership, Customer relationship, Material flow Management, Information sharing, and Corporate Culture. Using data presented, accordingly, the analysis presents; how the research question was addressed.

#### **4.2 RESULTS OF THE STUDY**

##### **Table 4.1 Demographic Information**

No.	Respondents profile	Categories	Frequency	Percentage
1.	Rainbow employees survey respondents by gender	Male	112	64.40
		Female	62	35.60
		Total	174	100%
2	Rainbow employees survey respondents by age	Below 20	5	2.9
		Between 20 and 30	96	55.2
		Between 31 and 40	60	34.5
		Above 40	13	7.5
		Total	174	100.%
3	Rainbow employees survey respondents by work experience	Below 4 years	68	39.1
		Between 4-7 years	41	23.6
		Between 7-10 years	27	15.5
		Above 10 years	38	21.8
		Total	174	100%
4	Rainbow employees survey	Below 12	90	51.7

		Twelve complete	37	21.3
		Certificate	10	5.7
		Diploma	15	8.6
		BA Degree	19	10.9
		MA Degree and above	3	1.7
		Total	174	100%

*Own survey, 2017*

The above table shows the frequencies and percentage related to the respondents' profile. From the total 174 respondents, 62 (35.6%) of respondents are female while 112 (64.4%) are male. This implies that, the highest percentages of respondents are male. As it can be seen on the above table, 5 (2.9) %of respondents are in the age range of below 20, while 96 (55.2%) in the age range of 20 to 30, while 60 (34.5%) is from 31 and 40, and 13 (7.5%) are above 40.

This shows that, participated employees in the survey age are between 20 and 30. In the case of work experience of respondents, the survey showed that about 68 (39.1%) have work experience of below 4 years, while 41 (23.6%) have experience of between 4 and 7 years, and 27(15.5%) are between 7 and 10 while 38 (21.8%) have an experience of above 10 years.

The above table also shows the educational qualification of respondents, the survey showed that about 90 (51.7%) are below 12 grade while 37 (21.3%) are completed 12 grade, 10 (5.7%) have certificate, 15 (8.6%) have diploma, 19 (10.9%) have BA degree, and 3 (1.7%) have MA degree

**Table 4.2. Responses for Customer Relationship practices**

S. N	Description	Rating										mean	SD
		Very low		low		Average		High		V. high			
	No	%	No	%	No	%	No	%	No	%			
1	We frequently interact with customers to set reliability, responsiveness, and other standards for us.	37	21.3	95	54.6	39	22.4	3	1.7	0	0	2.05	.712

2	We frequently measure and evaluate customer satisfaction	62	35.6	57	32.8	45	25.9	5	2.9	5	2.9	2.0	.996
3	We frequently determine future customer expectations	48	27.6	45	25.9	47	27.0	22	12.6	12	6.9	2.4	1.214
4	We facilitate customers' ability to seek assistance from us	49	28.2	46	26.4	40	23.0	25	14.4	14	8.0	2.4	1.262
5	Our firm faced problem to fulfill customers need	33	19.0	41	23.6	28	16.1	32	18.4	40	23.0	3.0	1.452

**Under this part, customer relation with in the company will be discussed.**

As it is indicated in table one, the particular study reveals that the interaction of the firm with its customers. According to the respondents, 37(21.3%) replied very low while 95 (54.6%) of the respondents revealed the interaction with customers is low. On the other hand 39(22.4%) of the respondents, revealed that, the interaction is average. However, only about 3(1.7%) of the respondents revealed that the firms' interaction with its customers is high. This shows that the greatest majority of the respondents express dissatisfaction concerning this issue. The mean score of the result is 2.05 it is far below average, which confirms insufficiency of interaction with customers.

In regard to the measurement and evaluation of customers' satisfaction, 62(35.6%) respondents revealed the firm do measure and evaluate customer satisfaction on a very low basis, while, 57(32.8%) replied low. On the contrary, only 10(5.8%) of the respondents reported that the firm frequently, measures and evaluates customers satisfaction on a very high basis. 45(25.9%) of the respondents answered average. The mean score of the result is 2.05, this is far below average, indicating unsatisfactory measurement and evaluation of customers' satisfaction.

As to determination of future customer expectations from the firm, the data points out only 34(19.5%) of the respondents, replied that the firm frequently determines future customer expectations positively. However, the majority of the respondents i.e., 93(53.5%) respond that the firm does not determine future customer expectations, while 47 (27.0%) rates average. The mean score of the result is 2.45, it is below average, indicating absence of satisfactory forecast system.

In respect to the question whether the firm facilitates customers' ability to seek the firm's assistance, 49 (28.2%) of the respondents answered very low while 46 (26.4%) rates low. On the other hand, 40 (23.0%) rates average against 25(14.4%) who rates high and 14 (8.0%) rates very high. The mean score of the result is 2.48, it shows below average, revealing poor customer facilitation.

As to the fulfillment of customer needs, nearly 74(42.6%) of the respondents expressed satisfaction about their company's ability to fulfill customers' needs, while 28 (16.1%) respondents out of 174 stated the problem as average. The second larger group constituting 72(41.4%) expressed the company's failure to meet customers' needs. With respect to interview results, the researcher approached the Deputy Manager of the company and he confirmed that, because of extreme shortage of products, most customers are served on the basis of appointments. Even then, customers mostly fail to get the product they need. This gives rise to great customer dissatisfaction, lost sales, low employee morale for not meeting customers' requirements, as well as reduced profitability. The mean score of the result is 3.03, this is slightly above average, confirming the existence of customer dissatisfaction.

**Table 4.3. Responses for Information sharing practices**

S.N	Description	Very low		low		Average		High		Very High		V. high		Mean	S.D
		No	%	No	%	No	%	No	%	No	%	No	%		
	Measure														

1	We inform trading partners in advance of changing needs	62	35.6	47	27.0	35	20.1	22	12.6	8	4.6	8	4.6	2.24	1.196
2	Our trading partners keep us fully informed about issues that affect our business	67	38.5	50	28.7	39	22.4	16	9.2	2	1.1	2	1.1	2.06	1.041
3	Our trading partner share business knowledge of core business processes with us	59	33.9	54	31.0	41	23.6	13	7.5	7	4.0	7	4.0	2.17	1.102
4	We and our trading partners exchange information that helps establishment of business planning	68	39.1	47	27.0	36	20.7	13	7.5	10	5.7	10	5.7	2.14	1.184
5	We and our trading partners keep each other informed about event or changes that may affect the other partners	65	37.4	46	26.4	37	21.3	19	10.9	7	4.0	7	4.0	2.18	1.167
6	Our firm faces problem in information sharing	27	15.5	27	15.5	52	29.9	27	15.5	41	23.6	41	23.6	3.16	1.363
7	All activities are computerized	44	25.3	48	27.6	33	19.0	16	9.2	33	19.0	33	19.0	2.69	1.433

Source: own survey, 2017

**Under this part, information sharing in the company will be discussed**

When it comes the firm inform trading partners in advance of changing needs, 62 (35.6%) out of the total 174 respondents responded very low while 47 (27.0%) said low.35 (20.1%) respondents answered average. The rest 22 (12.6%) and 8 (4.6%) answered high, and very high respectively. The



mean score of the result is 2.24, it shows far below average, indicating unsatisfactory advance notification concerning changes affecting their business.

This shows that the firm's information sharing practice needs much improvement. In this regard the firm must be aware of new information generated in its environment and adopt structures that enable fast decision making as well as practices that reduce information overload.

Our trading partners keep us fully informed about issues that affect our business 67(38.5%) scored very low, 50(28.7%) replied low, while 39(22.4%) answered average, and 16(9.2%) high, 2 (1.1%) answered very low. The mean score of the result is 2.06; it is far below average, indicating poor information exchange.

Concerning the question that trading partners share business knowledge of core business process with the firm 59 (33.9%) respondents answered very low while 54 (31.0%) said low. 41 (23.6%) respondents provided the answer average, compared to 13 (7.5%) who said high, on the contrary 7 (4.0%) very high. According to the interview conducted with the deputy manager, he reveals that, suppliers had come to the firm to install the new machine and show the employees how to operate the new machine. Other than that there is no such an experience that the trading partners share business knowledge. The mean score of the result is 2.17, it is far below average, reflecting poor information sharing with suppliers.

Regarding information exchange with trading partners that helps establishment of business planning, 115(66.1%) of the respondents expressed that there is lack of information exchange with trading partners while insignificant amount that is 23 (13.2%) of the respondents agreed with the statement in between this 36(20.7%) provided their answers as average. The mean score of the result is 2.14, the result which is far below average, confirming there is no information exchange with trading partners that helps establishment of business planning.

When it comes to the question whether trading partners keep each other informed each other, concerning changes or events that may affect the other parties, out of 174 respondents, 65 (37.4%) respondents out of the total 174 gave their answers as very low, while 46 (26.4%) replied low. In the same manner 37 (21.3%) respondents said average compared to 19(10.9%) respondents who said high, the last 7 (4.0%) respondents replying very high. The mean score of the result is 2.18, this is far below average, indicating poor state of information sharing practices.

Concerning information sharing, 54 (31.0%) of the respondents responded that the information sharing practice of the firm is satisfactory, while 52 (30.5%) of respondents reported as average. The greatest majority of the respondents 68 (39.1%) replied that there is a problem of information sharing both within and outside of the firm. Interview result confirmed that there is limitation on information sharing. Concerning the application of modern information technology, the firm only managed to activities related to sales. As it was mentioned by the deputy manager, the firm communicates with its suppliers only through e-mail and telephone only. And the production manager also confirmed this fact. Information sharing has become a key factor in collaboration. Suitable information system helps supply chain collaborators to link supplier, manufacturers, distributor and customers in order to achieve optimum productivity, overall satisfaction and pleasant relation. The mean score of the result is 3.16, it shows above average, implying inadequate information sharing practices.

To the statement that activities are computerized, 92 (52.9%) out of 174 respondents responded very low and low and disagreed that all activities are computerized, while 33 (19.0%) scored average. The remaining 49 (28.2%) replied positively by confirming that all activities are computerized. Considering the proportion of the respondents from the table it can be inferred that most activities are not computerized. This fact has been confirmed by the interview with Deputy Manager. According to him, the company uses e-mail and telephone exchanges with its suppliers and customers alike. The mean score of the result is 2.69, it shows below average, pointing to the need for computerized operations.

Table 4. 4. Responses for Material Management practices

S.	Description	Rating		
----	-------------	--------	--	--

N	Measure	Very low		low		Average		High		V. high		Mean	S.D
		No	%	No	%	No	%	No	%	No	%		
1	Our firm maintains reliable controlling system for every inventory items	63	36.2	35	20.1	41	23.6	19	10.9	16	9.2	2.37	1.318
2	Our firm utilizes appropriate equipment for material handling	49	28.2	39	22.4	39	22.4	23	13.2	24	13.8	2.62	1.379
3	Our firm uses separate stores for raw materials, finished products, and work in processes	50	28.7	33	19.0	37	21.3	25	14.4	29	16.7	2.71	1.442
4	Our firm faces stock-out problems	30	17.2	29	16.7	51	29.3	27	15.5	37	21.3	3.07	1.367
5	Our firm meets customers need timely	57	32.8	47	27.0	34	19.5	27	15.5	9	5.2	2.33	1.227
6	Our firm maintains good practice of information sharing	46	26.4	38	21.8	48	27.6	30	17.2	12	6.9	2.56	1.242
7	Our firm has an adequate storage space	56	32.2	43	24.7	37	21.3	18	10.3	20	11.5	2.44	1.341
8	Our firm maintain reliable material plan	64	36.8	45	25.9	37	21.3	17	9.8	11	6.20	2.25	1.282
9	Our firm faces problem in acquiring raw materials	21	12.1	29	16.7	47	27.0	35	21.1	42	24.1	3.28	1.323
10	Our firm utilizes voucher for receiving vouchers for receiving, issuing, and transfer of goods	39	22.4	41	23.6	35	20.1	19	10.9	40	23.0	2.89	1.470

**Under this part, Material Flow Management in the company will be discussed**

In relation to the question whether or not the firm maintains reliable controlling system for every inventory items 63 (36.2%) out of 174 respondents provided their reply as very low while, 41 (23.6%) responded average. In like manners 35 (20.1%) said low, compared to, 19 (10.9%) of the respondents said high, the rest 16 (9.2%) replied very high. And for this study the qualitative study also in agreement with this finding that the production and the finished products are kept in the same room which is not convenient to make one person responsible for the finished products. The mean score of the result is 2.37, it is far below average, indicating, absence of controlling mechanism.

Concerning for the study, the firm utilizes appropriate equipment for material handling 49 (28.2%) out of 174 respondents replied very low, while 39 (22.4%) said low, the same number 39 (22.4%) of the respondents replied average, while 23 (13.2%) responded high and 24 (13.8%) said very high. The mean score of the result is 2.62, this confirms unavailability of proper material handling equipment.

Regarding the utilization of separate stores for different products, 83(47.7%) gave negative replies compared to 54(31.1%) who answered in affirmative while 37(21.3%) gave their answers as average from this information one can sense the existence of inadequate storage space and in consequence raw materials, finished products and work in process are stored in the same store. These responses also concur with the Deputy Manager's replies. From this analysis, it can be seen that the firm uses no separate stores. The mean score of the result is 2.71, this shows absence of adequate storage facility.

In connection with stock-out problems 59(33.9%) of respondents, expressed satisfaction about adequate availability of stock in comparison with 64(36.8) who are not satisfied, regarding to this issue that the stock is adequate for customers need. The rest 51(29.3%) state the problem as average. Generally speaking the data on the table reflect that stock out problems is chronic to the company under study. Furthermore, interview conducted with the Deputy Manager, Production Manager, Marketing Manager as well as Sales Manager confirm that there is frequent stock-out, thus forcing the management to buy raw materials from its competitors at very expensive prices. This in turn causes the firm's product to be sold at very high prices. This practice may lead to reduced sales, customer dissatisfaction which may force away customers to go to other competing firms. The mean score of the result is 3.07, this is above average; there is a stock out problem in the firm.

When it comes to satisfying customer needs, 104 (59.8%) of the respondents have shown great discomfort for not meeting customer demands in time. On the other hand 36(28.7%) of the respondents have shown satisfaction in terms of fulfilling customer requirement at the right time. In between this are 34(19.5%) respondents who answered the issue as average. On the whole, the greatest majority of the respondents confirm that the company is not meeting its customers' needs on timely bases. The mean score of the result is 2.33, it shows far below average, indicating customer great dissatisfaction.

In connection with information sharing 84(48.2%) of the respondents expressed lack of information sharing against 42(24.1%) who showed satisfaction in this respect. The remaining 48(27.6%) of the respondents gave their replies as average. This information reflects that availability of information sharing is not satisfactory. The mean score of the result is 2.56, this is below average confirming poor state of information sharing.

In regard to adequacy of storage facilities, 99 (56.9%) were not in agreement that the firm has an adequate storage space. On the contrary, 38 (21.5%) of the total respondents, strongly agreed that the firm has sufficient storage space. The remaining, 37(21.3) respondents of replied as average. This creates congestions leading to inefficient and ineffective handling of the materials giving rise to damage/waste. The mean score of the result is 2.44; this shows inadequacy of storage facility in the firm.

Concerning material planning, the study showed that the organization has done little on maintaining reliable material purchase plan. From the total of 174 respondents 109(62.7%) have said the organization effort was below average (low and very low) on the other hand 27(15.5%) said the organization effort is high on maintaining up to date and reliable material purchase plan. The remaining 37(21.3) said average work was done on the subject. This shows the organization has a lot to do on maintaining regular and up to date material purchase plan so that it can benefit from it. In addition having a written document on the purchase plan could solve the problem the organization is facing. The mean score of the result is 2.25 this confirms in availability of material planning in the firm.

In order to investigate the views of the respondents about availability of raw materials, 50 (28.8%) of respondents reported the firm has not faced problem of acquiring raw materials. 47 (29.3%) respondents reported average. As regards acquisition of raw materials 77(44.2%) of the respondents expressed their dissatisfactions about the adequacy and timely supply of the raw materials. The qualitative study also is in agreement with this finding. Interview conducted with the deputy manager showed that the firm faces problem in acquiring raw materials. In consequence there is frequent disruption of production and acute shortage and product availability. This chronic supply shortage causes the firms sales force to frustrate for not being able to meet the high customer demand, resulting in lost sales reduced productivity and profits, with negative impact on employees 'morale. The mean score of the result is 3.28, it shows above average this confirms the firm faces problem in acquiring raw materials.

As regards documentation, 80 (46.0%) of the respondents state that the company uses vouchers for receiving, issuing, and transferring goods while 59(33.9%) agree to the statement. Data on the same table reveals that 35(20.1%) of the respondents gave their reply as average. In view of this information the greatest proportion of the respondents' answers are on the negative. Thus, confirming non utilization of vouchers in the stores operation is almost none. The mean score of the result is 2.8, this shows that slightly below average, reflecting poor documentation.

**Table 4.5. Responses for Corporate Culture practices**

S. N	Description	Rating										mean	S.D
		Very low		low		Average		High		V. high			
	No	%	No	%	No	%	No	%	No	%			
1	Employee's pay is based on performance	64	36	45	25.9	39	22.4	16	9.2	10	5.7	2.21	1.200
2	Employees suggestions are listened to	85	48.9	48	27.6	28	16.1	12	6.9	1	.6	1.83	.976
3	Employees are encouraged to make improvements on the job	73	42.0	45	25.9	34	19.5	12	6.9	10	5.7	2.09	1.187
4	Employees are recognized for good work	76	43.7	50	28.7	30	17.2	11	6.3	7	4.0	1.98	1.109
5	Two-way communication is present	71	40.8	52	29.9	31	17.8	9	5.2	11	6.3	2.06	1.169
6	Employees have a feeling of belongingness	43	24.7	18	10.3	41	23.6	22	12.6	50	28.7	3.10	1.540
7	There is a good team work in the firm	42	24.1	24	13.8	42	24.1	30	17.2	36	20.7	2.97	1.454
8	Managers treat employees with respect and dignity	70	40.2	29	16.70	41	23.6	22	12.6	12	6.9	2.29	1.299
9	There is a disagreement between employees and managers	19	10.9	21	12.1	60	34.5	31	17.8	43	24.7	3.33	1.274

Source: own survey, 2017





### **Under this, Corporate Culture of the firm will be discussed**

Concerning the statement that employees pay is based on performance the greatest proportion 109(62.7%) of the respondents replied very low and low. While 39(22.4%) of the respondents said average. On the other hand only 26(14.9%) out of the total 174 respondents gave positive replies. From these it can be inferred that the firm has no realistic and fair pay system. The mean score of the result is 2.2, it is below average and shows employees pay is not based on performance.

As regards employees' suggestions given attention, 133(76.5%) of the respondents affirmed that employees' suggestions are not given attention to. Against this 13(7.5%) gave positive replies while 28(16.1%) said average. This shows that the firm's disregard employees' and participation in its decision making process communication flows being top down only. The firm needs to give due regard to its employees' opinion and suggestions to enhance employee morale, improved relationship both with colleagues and supervisors alike. The mean score of the result is 1.83, this is an indication of very poor attention for employees' suggestions.

Employees are encouraged to make improvements on the job in reference to the above the data in the table reveals that 118 (67.9%) out of the 174 respondents have disappointments about the lack of encouragement for improved work performance in contrast to 22(12.6%) replied positively. The rest 34(19.5%) said the encouragement is average. Absence of encouragement for improved work suppresses employee creativity and innovative effort. The mean score of the result is 2.09, this shows that there is little encouragement for improvements on the job.

Concerning employee encouragement for good work, the table shows that 126(74.4%) of the respondents expressed discouragement for non-reward for good performance while 30(17.2%) confirmed as average the last 17(10.3%) expressed satisfaction about the incentive provided for outstanding work this implies that the company needs to improve its incentive scheme to make as many employees as possible so that productivity of the employees and consequently the company's profitability may be increased. The mean score of the result is 1.98, this far below the average, implying poor encouragement for good work.

In regard to the statement , twoway communications is present, out of 174 respondents, 71 (40.8%) replied very low, 52 (29.9%) answered low, 31 (17.8%) replied average, and the rest 9 (5.2%) high, 11 (6.3%) very high. This shows that there is down ward communication only. This implies that the firm company must give serious thought to its cultural suitability as this can have direct or indirect influence upon its business performance. The mean score of the result is 2.06, it is below the average and this shows that two way communications is not present in the firm.

As regards employees' feeling of belongingness 72(41.3%) of the respondents expressed great satisfaction about the presence of employees sense of belongingness. On the contrary, 61(35%) of the respondents, there is high discouragement concerning the lack of employees sense of belongingness. The third group comprising 41(23.6%) showed satisfaction as average. Generally the data on the table points out that almost the greater majority of the respondents have a good feeling of belongingness. Interview conducted with deputy manager for this question the deputy manager replied not only the employees but also the customers feel that the firm is theirs. He elaborated the reason the owner used to support the athletes and had a significant contribution for this country. Besides that, the quality of the product is consistent because of this good image the firm's customers are still interested in the firm's product causing the company to survive even under difficult circumstances. The mean score of the result is 3.10, this shows that it is above the average and it shows there is a feeling of belongingness in the firm.

Interpretation of the data on regarding team work the data shows that 66(37.9%) of the respondents confirmed availability of team work and equal percent which is 66(37.9%) responded non presence of team work the remaining 42(24.1%) replied team work availability is average. The result shows that team work in the company is moderate. The mean score of the result is 2.97, it is near to the average it shows there is a moderate level of team work.

Despite the team work approach reported by the employees, respondents 119(56.9%) expressed their dissatisfaction in the way the managers of the firm treat them. The way the managers handle the employees is not in a respectful and dignified ways. However, still 41(23.6%) reported they have been treated with respect and dignity, while, 41 (23.6%), respond on the average level. The mean score of the result is 2.29, which is below the average. As a result, managers do not have respect for employees.

As regards management employee shows the survey result reveals that there is big disagreement 40(23.0%) respondents reported that they have been treated with respect and dignity. While very low, low, while 60(34.5%) expressed the respect was on the average level. 74(42.5%) respondents showed their dissatisfaction in the way the managers of the firm treat them. The mean score of the result is 3.33, this shows that the disagreement is above the average and there is a disagreement between employees and employer.

## **CHAPTER FIVE**

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

#### **5.1. SUMMARY OF FINDINGS**

The firm under study has been operating since 1996. However, modern supply chain management theories and practices are not known to the firm. This means that the firm still is doing business in traditional manner. In spite of this, the company business is still sound due to its good image built over the last two decades as well as its quality product.

The study has revealed that the Rainbow Foam and Plastic Industry P.L.C. has not established any collaborative relationship outside its company it is associated only with one supplier abroad for its supply of raw material. Supply chain management is unknown to the firm. Consequently, it runs its business on traditional basis.

With regard to Information sharing the study found out that the firm has no management information system that enables efficient and effective communication both within the company and outside with its customers even internally key operations such as production, inventory, purchasing, sales, finance, are not computerized. As a result firm's activities are operated manually.

There is no Inventory control mechanism to ensure adequate level of inventory. Consequently the firm frequently runs out of stock. This in turn causes customer dissatisfaction resulting from non availability of the badly needed products of the company. Customers are given appointments to get products of their choice and the waiting time is usually very long.

Concerning storage facility, the firm uses only one store for work- in- process, finished products, and scrap materials. However the firm has recently established a new factory at Dukem. The firm is equipped with new machinery, which is currently utilized for recycling scrap materials into bonded mattress. There are also other machines, apparently sophisticated ones which have been kept idle since the last two years.

There is no material planning in the firm and scheduling, the purchase being done on disorganized basis. No continuity in raw material supply.

Concerning employer- employee relationships the information flow is one sided, the employer giving orders and the employee complying with the supervisors' orders. In addition the employees suffer from disrespect.

The firm's production facility is so limited by space which causes under capacity utilization, coupled with raw material shortage. Beyond this, the production machinery is so obsolete that it requires frequent maintenance and causes production disruption as well as unnecessary wastage in the form of scrap materials.

## **5.2. CONCLUSIONS**

As indicated in the literature part, SCM have different benefits like: to increase productivity, and competitive advantage, reduce inventory cycle time and also to increase customer satisfaction, market share and profits of firms. However, as stated in the statement of the problem part, the firm's critical problem is related to stock out and inadequate storage to verify these problems the researcher made use of five dimensions, as has been mentioned in the earlier parts of this paper.

Regarding to the awareness of the firm about the concept supply chain management the firm under study does not seem to realize the benefit derived from supply chain management. With respect to collaboration the firm has no practices of collaborating with other organizations or firms to gain the competitive advantage associated with collaborative businesses. The firm solely operates on its own, isolating itself from, modern usage of technologies.

Regarding to corporate culture employer- employee relationships the information flow is one sided, the employer giving orders and the employee complying with the supervisors' orders. In addition the employees suffer from disrespect. In addition employees pay is not based on performance.

Regarding to information sharing, there is no proper information sharing. Absence of information sharing, both within the firm and outside with its customers, negatively affect timely information flow. This is because the firm has not introduced modern information system such as information technology (IT). This drawback adversely affects effective control of the firms operations related to material management, production process, inventory movement, distribution and sales as well as finances.

Concerning customer relationship, the firm faces problem to fulfill customers' need. And this might lead to customers' dissatisfaction. And dissatisfied customers can change suppliers to fulfill their need. This would reduce firm's profitability.

Concerning to material flow management the firm under study production process the machines are old and obsolete, requiring frequent maintenance this in turn causes discontinuity of the production process which in turn results in underutilization of facilities , shortage of finished products, wastage of materials in terms of scraps and damages. The company has no practice of material planning that enables timely procurement and continuity of raw material supply to its manufacturing plant, resulting in disruption in production and shortage of stock both in terms of raw materials and finished product. This in turn brings about customer dissatisfaction, lost sales, reduced profitability, low employee morale, fear of firing, and the like. Consequently, in time of acute shortage, the firm is forced to buy raw material from its competitors at very high prices. As can be inferred from the study the firm suffers from frequent stock-out both in terms of raw materials and finished products. Shortage of frequent raw materials causes disruption in the production process which impacts on inventory, finished products, and sales volume and profitability.-Regards storage facility, the firm utilizes only one store for work- in- process, finished products and scrap materials, thus causing congestion and extreme difficulties in handling the materials and finished products as well. This in turn causes unwanted wastage due to mishandling.

### **5.3. RECOMMENDATIONS**

The findings of the survey have revealed that the firm has serious constraints related tonon-application of supply chain management, and internally, absence of sales forecast, material planning, timely raw material supply, and production breakdown, inventory stock-outs,in adequate storage space, effective employer/employee relationships and poor customer relations. To be able to minimize these obstacles, the company may need to focus on the following issues:

The study has revealed that supply chain plays an important role in terms of enabling organizations to compete and thus increase their market share and consequently improve shareholders value suitable.

In recognition of this the firm must take initiative to be a party to supply chain management system.

Information system helps the company to efficiently and effectively share information to its customers and within the firm to monitor and control its operations including stock movement, sales, and production.Sharing information is a solution for accurate integration of supply chain to optimize

its performance. Information has to be captured and communicated efficiently between the company and its customers.

Therefore the firm needs to establish management information systems to computerize key operational areas such as finance; stock control warehouses operations and sales functions. Information sharing helps to produce the maximum quality, lowest possible cost and least time to serve. Therefore Rainbow Foam and Plastic Industry P.L.C., should use appropriate information technology to improve information sharing among their customers and within the firm itself.

The company should introduce and maintain material planning to ensure timely procurement so that adequate and continuous materials availability at the disposal of the production unit to avoid disruption in the production process. This will enable the firm to maintain acceptable inventory level so as to satisfy customers needs’.

Since the firms machine is rather old and obsolete, subject to frequent disruption and maintenance, the company needs to update the machinery and associated facilities to ensure production of quality materials, thereby minimizing wastes and scraps.

Establish Inventory control mechanism, with proper documentation such as goods receipts, issuance and transfer vouchers.

Improve warehouse facilities in order that raw material, goods-in-process and finished products are separately stored in orderly manner, thus facilitating efficient and effective movement of goods.

Develop and maintain good employer/employee relationship, to ensure conducive work environment for increased productivity and employee morale. In addition the management should practice two way communications in order that employees’ suggestions and opinions are listened to.

Introduce and implement customer relation, which refers to practices strategies and technologies that companies use to manage and analyze customer interactions and data throughout the customer life cycle, with the objective of improving business relationships with customer, assisting in customer relations and energizing sales growth.

## References

- Attekar, R.V. 2005. Supply Chain Management Concepts and Cases. New Delhi: Prentice Hall of India.
- Ahmed, S. and Ullah, A. (2013). Driving Forces of Collaboration in Supply Chain: A Review. *Interdisciplinary Journal of Contemporary Research in Business*, Vol. 5, No. 7, November 2013.
- Araya Khailu (2012) The Role of Supply Chain Management in Building Construction Projects :the Case of Addis Ababa
- Awad, H.A.H. & Nassar, M. O. (2010). A Broader View of the Supply Chain Integration Challenges, *International Journal of Innovation, Management and Technology*, Vol. 1, No. 1, ISSN:2010-0248. Obtained from: [https://www.kau.edu.sa.57869\\_28319.pdf/](https://www.kau.edu.sa.57869_28319.pdf/)
- Bala, K. (2004). Supply Chain Management: Some Issues and Challenges- A Review. *International Journal of Current Engineering and Technology*, Vol. 4, No. 2 Retrieved from: <http://inpressco.com/category/ijcet>.
- Benavides, L, Eskinazis. V.D., and, Swan. D. (2012). Six Steps to Successful Supply Chain Collaboration. McKinsey &Company July 2012.Retrieved from [https://www.mckinsey.com/practice-clients/perations /](https://www.mckinsey.com/practice-clients/perations/)
- Chopra,S., & Meldiel P., (2016) Supply Chain Management Strategy; Planning, and Operation (6<sup>th</sup> ed.)Pearon Educated Limited England
- Coyle, J.Langley,C.Novack, R.& Gibson, B.2013 Managing Supply Chains: A Logistics Approach Cengage Learning India private Limited 9<sup>th</sup> ed.
- Crespo, Adolfo Márquez, (2010), *Dynamic Modelling for Supply Chain Management: Dealing with Front-end, Back-end and Integration Issues*, © Springer-Verlag London Limited.
- Deshpande, A . (2012). Supply Chain Management Dimensions, Supply Chain Performance and Organizational Performance: An Integrated Framework. *International Journal of Business and Management*.,Vol. 7,No. 8. [www.ccsenet.org/ijbm](http://www.ccsenet.org/ijbm) Dminguez , Carlos.( 2011) Collaboration: What Does it really mean?. Retrieved from <https://blogs.cisco.com/news/collaboration-what-does-it-really-mean/>
- Ensermu, Matiws (2015), *Logistics Management: A Green Supply Chain Perspective (With Case Applications in Ethiopia)*, Artistic Printing Enterprise Ethiopia
- Fawcett, S.E., Osterhaus, P., Magnan, G.M., Baru, J.C. and McCarter, M.W.(2007). Information sharing and supply chain performance: the role of connectivity and willingness. *Emerald: International Journal* 12/5 (2007) 358-368. [www.emeraldinsight.com/1359-8546.htm](http://www.emeraldinsight.com/1359-8546.htm)
- Fawcett, S., Magnan, G. &McCarter, M. (2005) The effect of people on the Supply Chain World:Some Overlooked Issues[http://www. Business.unic.edu/working papers/ 05-118 pdf](http://www.Business.unic.edu/working papers/ 05-118 pdf).



- Hadfield, R., & Nicholas, E. (1999) Introduction to supply Chain Management –Hall Prentice New Delhi, India.
- Huam, A.C.T.H.T., Yusoff, R.M., Rasli, A.M. and Hamid, A.B.A.(2011). Supply Chain Management: Success factors from the Malaysian manufacture’s perspective. African <http://www.academicjournals.org/AJBM>.
- Ibrahim, S. & Hamid, A. August, 2014 Supply chain Management Practices and Supply Chain Performance Effectiveness. International Journal of Science and Research (IJSR) ISSN (Online):2319-7064 p. 188)
- Kotler, P Armstrong ,G (2008) Principle of Marketing (12<sup>th</sup> ed.). USA: Prentice-Hall, Inc.,
- Li, S., Nathan, B.R. Nathan, T.S.R. and Rao, S.S. (2006). The impact of Supply Chain Management Practices in competitive advantage ad organizational performance. Elsevier: Omega The International Journal of Management Science. Omega 34(2006) 107-124
- Li, Suhong, Nathan, B.R., Nathan, T.S.R., Rao, S. S.(2004). The impact of supply chain management practices on competitive advantage and organizational performance. Retrieved from [www.elsevier.com/locate/omega](http://www.elsevier.com/locate/omega)
- Lu, Dawei. (2011).Fundamentals of Supply Chain Management. Dawei Lu &Ventus publishing, London
- Massetti, M. Six Essential Attributes of Strategic Supplier Partnership. Retrieved from <https://mamassetti.wordpress.com/2016/02/21/6>,
- Murry, Martin(June,22,2017)Stock outs costs and effects on the supply chain. Retrieved from[https://www the balance.com/stockout-costs-and-effects-2221391/](https://www.thebalance.com/stockout-costs-and-effects-2221391/)
- Mentzer, J.T., Witt, W.D., Keebler, J.S., Min, S., Nix, N.W. and Smith, C.D. 2001. Defining Supply Chain Management. In Journal of Business Logistics, Vol. 22, No. 2, 2001. ( pp.1-25). Downloaded on November 29,2017 from: [www.aui.ma](http://www.aui.ma).
- Naslund, D. and Williamson, S. 2010. What is Management in Supply Management ChainManagement?- A Critical Review of Definitions, Frameworks ad Terminology. In Journal of Management Policy and Practice, Vol. 11(4), pp.11-27. Downloaded November 29, 2017 from: [www.na-businesspress.com/jmpp/naslundweb](http://www.na-businesspress.com/jmpp/naslundweb).
- Peel, J.2002 Redefining Customer Relationship Management Elsevier Science U.S.A
- Porter, Michael E. 2007. Understanding Industry Structure. Boston: Harvard Business School Publishing. Retrieved from: [www.tlp.org/wp-content](http://www.tlp.org/wp-content).
- Reddy, M.V. R. and Raju, N.V.S. 2013. Issues and Challenges of Supply Chain Management in India. In International Journal of Mechanical and Production Engineering (IJMPE). ISSN No: 2315-4489, Vol-2, Iss-1,2013. Downloaded December 29, 2014 from: [www.irnet.sg/irnet\\_journal/](http://www.irnet.sg/irnet_journal/)

Sahin, F. and Robinson, E.P. (2002). Flow Coordination and Information Sharing in Supply Chains: Review, Implications, and Directions for Future Research. *Decision Sciences*, Vol. 33, No. 4, Fall 2002.

Sami Tewfik 2014 Supply Chain Management Practices and Performances of Fast Food Share Company.

Simchi-Levi, D Kaminsky, P and Simchi-Levi E (2003), 2nd ed. McGraw-Hill America New York Designing and Managing The Supply Chain. America Newyork

Tsai, Ya-Ling (2006). Supply Chain Collaborative practice: A supplier Perspective IFPSM Retrieved from IFPSM (2006)]

Wei, Z and Xiang, W The Importance of Supply Chain Management: *International Journal of Business and Social Science* Vol. 4 No. 16; December 2013 [www.ijbssnet.com](http://www.ijbssnet.com)

Wondimeneh Sewye 2013 Supply Chain Management Practices of Pharmaceuticals Manufacturing Companies of Ethiopia: the case of Ethiopian Pharmaceuticals Manufacturing Share Company

Winsor, J. Leong, G. K. Tan, K. (2005) principle of supply chain management A balanced approach @2005 south western, Cengage learning ,India

Zhu, Q., Sarkis, J. and Geng, Y. (2005). Green Supply Chain Mngement in China: pressures, practices and performance. *Emerald: International Journal of Operations and Production Management*, Vol. 25, No. 5. [www.emeraldinsight.com/0144-3577.htm](http://www.emeraldinsight.com/0144-3577.htm)

## APPENDICES

### Appendix A: Survey Questionnaire

Dear Madam/Sir

I am a final year Master of Business Administration (MBA) student at St. Mary University. The purpose of this questionnaire is to gather data on assessing the practices of supply chain management in Rainbow Foam and plastic Industry. So I would appreciate if you could assist my research by completing the attached questionnaire that can only take few minutes time to complete.

There are two parts described below. The first part is a demographic question requiring respondent's. the second part covers questionnaires regarding the current practice of supply chain management. Accordingly, the respondents are required to tick(x) one from the alternative that that can represent their organization.

The research is purely for academic purpose only. So, your timely, genuine and frank response to the questionnaire is vital for the effectiveness of the study. Accordingly, please take a few minute from your schedule and reply to the questionnaire. Your response will be kept confidential and wouldn't be used for any other purpose. Thank you in advance for your participation in the research.

#### **Part I: Demographic questions** please put (X) for your response

1. Sex :            Female            Male
2. Age:-            < 2o years            20-30 years          
                         30- 40 years            > 40 years
3. Work for Rainbow Foam and Plastic Industry P.L.C.  
    <4 years        4-7 years        7-10 years        >10 years
4.    Education level:  
    Below grade 12                        Grade 12 completed                      
    Certificate                            Diploma                                      
    First degree                            Second degree and above

**Table 4.1 Demographic Information**

No.	Respondents profile	Categories	Frequency	Percentage
1.	Rainbow employees survey respondents by gender	Male	112	64.40
		Female	62	35.60
		Total	174	100%
2	Rainbow employees survey respondents by age	Below 20	5	2.9
		Between 20 and 30	96	55.2
		Between 31 and 40	60	34.5
		Above 40	13	7.5
		Total	174	100.%
3	Rainbow employees survey respondents by work experience	Below 4 years	68	39.1
		Between 4-7 years	41	23.6
		Between 7-10 years	27	15.5
		Above 10 years	38	21.8
		Total	174	100%
4	Rainbow employees survey respondents by education	Below 12	90	51.7
		Twelve complete	37	21.3
		Certificate	10	5.7
		Diploma	15	8.6
		BA Degree	19	10.9
		MA Degree and above	3	1.7
Total	174	100%		

**Table 4.2. Responses for Customer Relationship practices**

S. N	Description	Rating										mean	SD
		Very low		low		Average		High		V. high			
		No	%	No	%	No	%	No	%	No	%		
1	We frequently interact with customers to set reliability, responsiveness, and other standards for us.												
2	We frequently measure and evaluate customer satisfaction												
3	We frequently determine future customer expectations												
4	We facilitate customers' ability to												

	seek assistance from us													
5	Our firm faced problem to fulfill customers need													

**Table 4. 3. Responses for Information sharing practices**

S.N	Description	Rating										Mean	S.D	
		Very low		low		Average		High		V. high				
	No.	%	No.	%	No.	%	No.	%	No.	%				
1	We inform trading partners in advance of changing needs													
2	Our trading partners keep us fully informed about issues that affect our business													
3	Our trading partner share business knowledge of core business processes with us													
4	We and our trading partners exchange information that helps establishment of business planning													
5	We and our trading partners keep each other informed about event or changes that may affect the other partners													
6	Our firm faces problem in information sharing													
7	All activities are computerized													

Source: own survey, 2017

**Table 4. 4. Responses for Material Management practices**

S. N	Description	Rating										Mean	S.D
		Very low		low		Average		High		V. high			
		No	%	No	%	No	%	No	%	No	%		
1	Our firm maintains reliable controlling system for every inventory items												
2	Our firm utilizes appropriate equipment for material handling												
3	Our firm uses separate stores for raw materials, finished products, and work in processes												
4	Our firm faces stock-out problems												
5	Our firm meets customers need timely												
6	Our firm maintains good practice of information sharing												
7	Our firm has an adequate storage space												
8	Our firm maintain reliable material plan												
9	Our firm faces problem in acquiring raw materials												
10	Our firm utilizes voucher for receiving vouchers for receiving, issuing, and transfer of goods												

**Table 4.5. Responses for Corporate Culture practices**

S. N	Description	Rating										mean	S.D
		Very low		low		Average		High		V. high			
	No	%	No	%	No	%	No	%	No	%			
1	Employee's pay is based on performance												
2	Employees suggestions are listened to												
3	Employees are encouraged to make improvements on the job												
4	Employees are recognized for good work												
5	Two-way communication is present												
6	Employees have a feeling of belongingness												
7	There is a good team work in the firm												
8	Managers treat employees with respect and dignity												
9	There is a disagreement between employees and managers												

*Source: own survey, 2017*

## **Appendix B: Interview Questions**

### **For marketing and sales division**

- 1) How can you explain the overall supply chain management practices of the company
- 2) How do you select the supplier of raw materials for manufacturing foam
- 3) what are the major factors that affect raw materials availability
- 4) How do you measure the utilization of the production capacity of the available machines?
- 5) What are the major factors the decreases the utilization of the capacity of production in the company?
- 6) What are the inventory management across RFPI
- 7) Do you have backward integration to suppliers and forward integration to distributors of wholesalers as long term strategically
- 8) What are the parameters affecting the total supply chain response time from getting raw materials to use of the products by the customers
- 9) Do you have an experience sharing best experiences in the area of supply chain management from benchmark companies
- 10) What are the supply chain management problem faced so far with suppliers and distributors
- 11) What are recommendations or possible solution to solve such challenge raised so far
- 12) Is there anything you need to say regarding the supply chain management practices of the company?



## **Appendix C: Interview Questions**

### **For the Deputy Manager**

1. What is your supply chain management practice?
2. Is your firm considering quality as a number one criterion in selecting supplier?
3. Do you regularly solve problems jointly with your suppliers?
4. How do you help your suppliers to improve their product quality?
5. Do you have continuous improvement programs that include your key suppliers?
6. Do you include your key suppliers in your planning and goal setting activities?
7. Do you actively involve your key suppliers in new product development processes?
8. How does your corporate culture include?
9. Could you explain about your company's information sharing practice?
10. How do you select the suppliers of the raw materials s?
11. Do you have long term business relationship with suppliers or in tender basis?
12. What are the factors that affect the delay of raw materials availability?
13. What are external factors affecting to raw materials availability?
14. What measures are taking by the company to solve such challenge?
15. How do you measure order fulfillment lead time for raw materials?
16. Is there anything you would like to say regarding the suppliers relationship with company?
17. Are receiving, issuing, accounting and storing responsibilities properly segregated?
18. How do you manage return goods?
19. Do you have vouchers for receiving, issuing, and transfer of goods?

## Appendix D: Frequency Table

### Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	62	35.6	35.6	35.6
	Male	112	64.4	64.4	100.0
	Total	174	100.0	100.0	

### Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 20	5	2.9	2.9	2.9
	Between 20 and 30	96	55.2	55.2	58.0
	Between 31 and 40	60	34.5	34.5	92.5
	Above 41	13	7.5	7.5	100.0
	Total	174	100.0	100.0	

### Work Experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 4 years	68	39.1	39.1	39.1
	Between 5 and 7	41	23.6	23.6	62.6
	Between 8 and 10	27	15.5	15.5	78.2
	Above 10	38	21.8	21.8	100.0
	Total	174	100.0	100.0	

**Education Level**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 12	90	51.7	51.7	51.7
	12 complete	37	21.3	21.3	73.0
	Certificate	10	5.7	5.7	78.7
	Diploma	15	8.6	8.6	87.4
	BA Degree	19	10.9	10.9	98.3
	MA and Above	3	1.7	1.7	100.0
	Total	174	100.0	100.0	

**We frequently interact with customers to set reliability and responsiveness.**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	37	21.3	21.3	21.3
	Low	95	54.6	54.6	75.9
	Average	39	22.4	22.4	98.3
	High	3	1.7	1.7	100.0
	Total	174	100.0	100.0	

**We frequently measure and evaluate customer satisfaction**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	62	35.6	35.6	35.6
	Low	57	32.8	32.8	68.4
	Average	45	25.9	25.9	94.3
	High	5	2.9	2.9	97.1
	Very High	5	2.9	2.9	100.0
	Total	174	100.0	100.0	

**frequently determine future customer expectations**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	48	27.6	27.6	27.6
	Low	45	25.9	25.9	53.4
	Average	47	27.0	27.0	80.5
	High	22	12.6	12.6	93.1
	Very High	12	6.9	6.9	100.0
	Total	174	100.0	100.0	

**We facilitate customer' ability to seek assistance from us**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	49	28.2	28.2	28.2
	Low	46	26.4	26.4	54.6
	Average	40	23.0	23.0	77.6
	High	25	14.4	14.4	92.0
	Very High	14	8.0	8.0	100.0
	Total	174	100.0	100.0	

**Our firm faced problem to fulfill customers need**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	33	19.0	19.0	19.0
	Low	41	23.6	23.6	42.5
	Average	28	16.1	16.1	58.6
	High	32	18.4	18.4	77.0
	Very High	40	23.0	23.0	100.0
	Total	174	100.0	100.0	

**We inform trading partners in advance of changing needs**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	62	35.6	35.6	35.6
	Low	47	27.0	27.0	62.6
	Average	35	20.1	20.1	82.8
	High	22	12.6	12.6	95.4
	Very High	8	4.6	4.6	100.0
	Total	174	100.0	100.0	

**Our trading partners keep us fully informed about issues that affect our business**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	67	38.5	38.5	38.5
	Low	50	28.7	28.7	67.2
	Average	39	22.4	22.4	89.7
	High	16	9.2	9.2	98.9
	Very High	2	1.1	1.1	100.0
	Total	174	100.0	100.0	

**Our trading partners share business knowledge of core business process  
with us**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	59	33.9	33.9	33.9
	Low	54	31.0	31.0	64.9
	Average	41	23.6	23.6	88.5
	High	13	7.5	7.5	96.0
	Very High	7	4.0	4.0	100.0
	Total	174	100.0	100.0	

**We and our trading partners exchange information that helps establishment of business planning**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	68	39.1	39.1	39.1
	Low	47	27.0	27.0	66.1
	Average	36	20.7	20.7	86.8
	High	13	7.5	7.5	94.3
	Very High	10	5.7	5.7	100.0
	Total	174	100.0	100.0	

**We and our trading partners keep each other informed about event or changes that may affect the other partners**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	65	37.4	37.4	37.4
	Low	46	26.4	26.4	63.8
	Average	37	21.3	21.3	85.1
	High	19	10.9	10.9	96.0
	Very High	7	4.0	4.0	100.0
	Total	174	100.0	100.0	

**Our firm faces problem in information sharing**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	27	15.5	15.5	15.5
	Low	27	15.5	15.5	31.0
	Average	52	29.9	29.9	60.9
	High	27	15.5	15.5	76.4
	Very High	41	23.6	23.6	100.0
	Total	174	100.0	100.0	



**All activities are computerized**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	44	25.3	25.3	25.3
	Low	48	27.6	27.6	52.9
	Average	33	19.0	19.0	71.8
	High	16	9.2	9.2	81.0
	Very High	33	19.0	19.0	100.0
	Total	174	100.0	100.0	

**Our firm maintains reliable controlling system for every inventory items**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	63	36.2	36.2	36.2
	Low	35	20.1	20.1	56.3
	Average	41	23.6	23.6	79.9
	High	19	10.9	10.9	90.8
	Very High	16	9.2	9.2	100.0
	Total	174	100.0	100.0	

**Our firm utilizes appropriate equipment for material handling**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	49	28.2	28.2	28.2
	Low	39	22.4	22.4	50.6
	Average	39	22.4	22.4	73.0
	High	23	13.2	13.2	86.2
	Very High	24	13.8	13.8	100.0
	Total	174	100.0	100.0	

**Our firm utilizes separate stores for raw materials, finished products and work in processes**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	50	28.7	28.7	28.7
	Low	33	19.0	19.0	47.7
	Average	37	21.3	21.3	69.0
	High	25	14.4	14.4	83.3
	Very High	29	16.7	16.7	100.0
	Total	174	100.0	100.0	

**Our firm faces stock-out problems**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	30	17.2	17.2	17.2
	Low	29	16.7	16.7	33.9
	Average	51	29.3	29.3	63.2
	High	27	15.5	15.5	78.7
	Very High	37	21.3	21.3	100.0
	Total	174	100.0	100.0	

**Our firm meets customers need timely**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	57	32.8	32.8	32.8
	Low	47	27.0	27.0	59.8
	Average	34	19.5	19.5	79.3
	High	27	15.5	15.5	94.8
	Very High	9	5.2	5.2	100.0
	Total	174	100.0	100.0	

**Our firm maintains good practice of information sharing**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	46	26.4	26.4	26.4
	Low	38	21.8	21.8	48.3
	Average	48	27.6	27.6	75.9
	High	30	17.2	17.2	93.1
	Very High	12	6.9	6.9	100.0
	Total	174	100.0	100.0	

**Our firm has an adequate storage space**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	56	32.2	32.2	32.2
	Low	43	24.7	24.7	56.9
	Average	37	21.3	21.3	78.2
	High	18	10.3	10.3	88.5
	Very High	20	11.5	11.5	100.0
	Total	174	100.0	100.0	

**Our firm maintain reliable material plan**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	64	36.8	36.8	36.8
	Low	45	25.9	25.9	62.6
	Average	37	21.3	21.3	83.9
	High	17	9.8	9.8	93.7
	Very High	10	5.7	5.7	99.4
	8	1	.6	.6	100.0
	Total	174	100.0	100.0	

**our firm faces problem in acquiring raw materials**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	21	12.1	12.1	12.1
	Low	29	16.7	16.7	28.7
	Average	47	27.0	27.0	55.7
	High	35	20.1	20.1	75.9
	Very High	42	24.1	24.1	100.0
	Total	174	100.0	100.0	

**Our firm utilizes voucher for receiving, issuing, and transferring goods**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	39	22.4	22.4	22.4
	Low	41	23.6	23.6	46.0
	Average	35	20.1	20.1	66.1
	High	19	10.9	10.9	77.0
	Very High	40	23.0	23.0	100.0
	Total	174	100.0	100.0	

**Employees' pay is based on performance**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	64	36.8	36.8	36.8
	Low	45	25.9	25.9	62.6
	Average	39	22.4	22.4	85.1
	High	16	9.2	9.2	94.3
	Very High	10	5.7	5.7	100.0
	Total	174	100.0	100.0	

**Employees suggestions are listened to**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	85	48.9	48.9	48.9
	Low	48	27.6	27.6	76.4
	Average	28	16.1	16.1	92.5
	High	12	6.9	6.9	99.4
	Very High	1	.6	.6	100.0
	Total	174	100.0	100.0	

**Employees are encouraged to make improvements on the job**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	73	42.0	42.0	42.0
	Low	45	25.9	25.9	67.8
	Average	34	19.5	19.5	87.4
	High	12	6.9	6.9	94.3
	Very High	10	5.7	5.7	100.0
	Total	174	100.0	100.0	

**Employees are encouraged for good work**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	76	43.7	43.7	43.7
	Low	50	28.7	28.7	72.4
	Average	30	17.2	17.2	89.7
	High	11	6.3	6.3	96.0
	Very High	7	4.0	4.0	100.0
	Total	174	100.0	100.0	

**Two way communication is present**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	71	40.8	40.8	40.8
	Low	52	29.9	29.9	70.7
	Average	31	17.8	17.8	88.5
	High	9	5.2	5.2	93.7
	Very High	11	6.3	6.3	100.0
	Total	174	100.0	100.0	

**Employees have a feeling of belongingness**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	43	24.7	24.7	24.7
	Low	18	10.3	10.3	35.1
	Average	41	23.6	23.6	58.6
	High	22	12.6	12.6	71.3
	Very High	50	28.7	28.7	100.0
	Total	174	100.0	100.0	

**There is a good team work in the firm**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	42	24.1	24.1	24.1
	Low	24	13.8	13.8	37.9
	Average	42	24.1	24.1	62.1
	High	30	17.2	17.2	79.3
	Very High	36	20.7	20.7	100.0
	Total	174	100.0	100.0	

**Managers treat employees with respect and dignity**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	70	40.2	40.2	40.2
	Low	29	16.7	16.7	56.9
	Average	41	23.6	23.6	80.5
	High	22	12.6	12.6	93.1
	Very High	12	6.9	6.9	100.0
	Total	174	100.0	100.0	

**There is a disagreement between managers and employees**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low	19	10.9	10.9	10.9
	Low	21	12.1	12.1	23.0
	Average	60	34.5	34.5	57.5
	High	31	17.8	17.8	75.3
	Very High	43	24.7	24.7	100.0
	Total	174	100.0	100.0	



**Appendix:E**  
**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
Gender	174	0	1	.64	.480
Age	174	1	4	2.47	.677
Work Experience	174	1	4	2.20	1.178
Education Level	174	1	6	2.11	1.476
We frequently interact with customers to set reliability and responsiveness.	174	1	4	2.05	.712
We frequently measure and evaluate customer satisfaction	174	1	5	2.05	.996
We frequently determine future customer expectations	174	1	5	2.45	1.214
We facilitate customer' ability to seek assistance from us	174	1	5	2.48	1.262
Our firm faced problem to fulfill customers need	174	1	5	3.03	1.452
We inform trading partners in advance of changing needs	174	1	5	2.24	1.196
Our trading partners keep us fully informed about issues that affect our business	174	1	5	2.06	1.041
Our trading partners share business knowledge of core business process with us	174	1	5	2.17	1.102

We and our trading partners exchange information that helps establishment of business planning	174	1	5	2.14	1.184
We and our trading partners keep each other informed about event or changes that may affect the other partners	174	1	5	2.18	1.167
Our firm faces problem in information sharing	174	1	5	3.16	1.363
All activities are computerized	174	1	5	2.69	1.433
Our firm maintains reliable controlling system for every inventory items	174	1	5	2.37	1.318
Our firm utilizes appropriate equipment for material handling	174	1	5	2.62	1.379
Our firm utilizes separate stores for rawmaterials, finished products and work in processes	174	1	5	2.71	1.442
Our firm faces stock-out problems	174	1	5	3.07	1.367
Our firm meets customers need timely	174	1	5	2.33	1.227
Our firm maintains good practice of information sharing	174	1	5	2.56	1.242
Our firm has an adequate storage space	174	1	5	2.44	1.341
Our firm maintain reliable material plan	174	1	8	2.25	1.282
Our firm faces problem in acquiring raw materials	174	1	5	3.28	1.323

Our firm utilizes voucher for receiving, issuing, and transferring goods	174	1	5	2.89	1.470
Employees pay is based on performance	174	1	5	2.21	1.200
Employees suggestions are listened to	174	1	5	1.83	.976
Employees are encouraged to make improvements on the job	174	1	5	2.09	1.187
Employees are encouraged for good work	174	1	5	1.98	1.109
Two way communication is present	174	1	5	2.06	1.169
Employees have a feeling of belongingness	174	1	5	3.10	1.540
There is a good team work in the firm	174	1	5	2.97	1.454
Managers treat employees with respect and dignity	174	1	5	2.29	1.299
There is a disagreement between managers and employees	174	1	5	3.33	1.274
Valid N (listwise)	174				