FACTORS AFFECTING IMPLEMENTATION OF SUPPLY CHAIN MANAGEMENT PRACTICES: THE CASE OF RESEARCH TRIANGLE INSTITUTE INTERNATIONAL IN ETHIOPIA PROJECT, FEED THE FUTURE ETHIOPIA

BY
LAMROT GETNET

ADVISOR: KIRUBEL BIRUK (PHD)

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

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Thesis Approval Sheet

As a member of the board of Examiners of Master of Art (M.A) thesis open defense examination, we have read and evaluated this thesis prepared by Mrs Lamrot Getnet entitled **"FACTORS AFFECTING IMPLEMENTATION OF SUPPLY CHAIN MANAGEMENT PRACTICES: THE CASE OF RESEARCH TRIANGLE INSTITUTE INTERNATIONAL IN ETHIOPIA PROJECT, FEED THE FUTURE ETHIOPIA**" We hereby certify that, the thesis is accepted for fulfilling the requirements for the award of the degree of Master of Art (M.A) in "Logistic and Supply Chain Management"

Board of Examiners:

Name of External Examiner	Signature	Date
Name of Internal Examiner	Signature	Date
Name of Chairperson	Signature	Date

Declaration

This is to certify that this thesis entitled "**FACTORS AFFECTING IMPLEMENTATION OF SUPPLY CHAIN MANAGEMENT PRACTICES: THE CASE OF RESEARCH TRIANGLE INSTITUTE INTERNATIONAL IN ETHIOPIA PROJECT, FEED THE FUTURE ETHIOPIA**" submitted in partial fulfillment of the requirements for the award of the degree of Master of Art in "**Logistic and Supply Chain Management"** to the Graduate Program of College of Commerce, Addis Ababa University by Mrs **Lamrot Getnet** (ID. No GSE/0489/14) is an authentic carried by her under our guidance the matter embodied in this project work has not been submitted earlier for award of any degree or diploma to the best of our knowledge and belief.

Name of the student

Lamrot Getnet

Signature and date: _____

Name of the Supervisor

Kirubel Biruk (Phd)

Signature and date: _____

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Abstract

Supply chain management techniques, such as information technology application and decision-making frameworks, information exchange, teamwork, and management integration, have helped various industries enhance their supply chains by reducing inefficiencies, raising customer satisfaction, and lowering operating expenses. Consequentially, researcher examines factors that have an effect on the implementation of supply chain management practices in international organizations. The researcher uses an explanatory survey design with a target population of 107 employees in total for the RTI International Ethiopian project. The researcher used a census and sent out a questionnaire to all of them, and primary data was collected from the responses of the employees and secondary data from published resources. In order to determine the relative importance of each variable with regard to the organization's implementation of supply chain management practices, the quantitative data collected was analyzed using descriptive statistics like frequency, percentages, mean, and standard deviation using Statistical Package for Social Science (SPSS) version 24. The results were then presented using frequency tables and figures. According to the result, the researcher concluded that information sharing, inventory management, organizational size, human capital efficiency, and management support have a big impact on how supply chain management strategies are implemented. In light of this, those factors positively affect the application of SCM. From the mentioned variables, good human capital efficiency, a good inventory management system, and a good information sharing method have the highest contribution to the implementation of SCM at the organization. The researcher recommends that the management needs to support their team in different ways, and they also need to reevaluate their organizational size and determine in what way it is affecting the implementation of SCM at the organization.

Keywords*: Supply chain management, information sharing, human capital efficiency, organizational size, management support, inventory management*

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List of Abbreviation

EMS - Executive/ Management Support

EVP - Ethical value and principle

EOQ-Economic Order Quantity

HC- human capital efficiency

HSCM - Humanitarian supply chain management

ICT - Information communication technology

IM – inventory Management

IS- information sharing

JIT-Just-in-Time

MS-Management support

NGO - Non-Government Organization

OS- organizational size

RBV- Resource based view

RTI- Research Triangle Institute

SC- Supply chain

SCM- Supply Chain Management

SPSS- Statistical Package for the Social Science

VIF-Variance inflation factor

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CHAPTER ONE

1. Introduction

In this chapter the researcher focuses on providing readers with a background of the study, statement of the problem, research question, objective of the research (general and specific objective) significance of the study, scope of the study, definition of terms and organization of the paper.

1.1 Background of the study

Supply chain is the integrated and coordinated flows of products from point of manufacturing to point where it is distributed to the customers, as well as the related information flows (Little, 2000). An activities done in an organization to achieve effective and efficient supply chain management is referred as supply chain management practices (Lee & Ng, 2009)

Supply chain management (SCM) is a business improvement tool that has become increasingly powerful. It allows companies involved in product creation, distribution, and sales to collaborate to create a supply network that gives them a competitive advantage, International businesses are pursuing supply chains as the newest approach to cut expenses, boost customer happiness, optimize asset use, and generate new revenue (Deveshwar et al, 2010).

Global sourcing and expansion, the development of international firms and strategic alliances, and environmental issues are all covered under supply chain management. Supply chain management is currently the most important discipline in the world due to these new problems that are emerging in the internal and external environments of enterprises. (Chopra & Meindl, 2007).

Supply chain management (SCM) has a vast web of practices ensuring a smooth flow of goods to the customer. It starts with the collaboration of consumers and suppliers, strategic planning, designing efficient supply networks, and building strong relationships with suppliers. SCM involves joint planning processes, information sharing, and performance metrics to ensure alignment with overall supply chain goals (Mentzer et al, 2016).

Demand forecasting and inventory management are crucial for keeping the right amount of product on hand, while production planning and scheduling ensure the efficient use of

resources to meet that demand. Companies utilize various forecasting techniques and implement inventory management models like just-in-time (JIT) or economic order quantity (EOQ) (Krajewski et al,2016). Warehousing, picking, packing, and transportation move products efficiently, while risk management protects the supply chain from disruptions. Sustainability practices are becoming increasingly important, focusing on reducing waste and environmental impact throughout the entire chain. Based on the study of Handfield and Nichols (2019), The precise practices used will vary depending on the specific business and industry, but all contribute to a well-functioning supply chain. In logistics and transportation, companies might rely on a mix of commercial transportation and partnerships with local organizations for last-mile delivery in remote areas. Considerations include cost, speed, and infrastructure limitations.

A successful supply chain requires balancing several key competitive priorities. Minimizing costs through practices like lean manufacturing is crucial, but it shouldn't come at the expense of customer satisfaction. Companies need to be responsive to customer needs, ensuring fast and accurate deliveries of high-quality products. Speed is especially important in today's e-commerce world, necessitating efficient logistics and warehouse operations (Fisher 2005).

Innovation is another key factor. Companies that embrace new technologies like automation and explore sustainable sourcing strategies can gain a competitive edge. Sustainability is no longer an option; reducing environmental impact and ethical sourcing are becoming increasingly important considerations. The optimal balance between these priorities depends on the industry, company strategy, and customer base (Krajewski et al,2016).

One of the contextual factors that affect SCM is industry, Different industries have vastly different supply chain needs. Organization Size: Larger organizations, like multinational corporations, tend to have more complex supply chains than smaller businesses due to the sheer number of suppliers, products, and customers they manage (Sodhi et al, 2018).

Supply Chain Length and Structure: The length and structure of a supply chain significantly impact its efficiency. Longer supply chains, spanning multiple countries, can be more challenging to manage due to communication complexities (Christopher, 2016). Demand Uncertainty: The level of uncertainty in demand can significantly impact SCM. If demand is highly unpredictable, it can be difficult to plan for production and inventory levels effectively (Krajewski et al, 2016). Information Quality: The quality of information shared between

different parts of the supply chain is essential for efficient SCM. Inaccurate or incomplete information can lead to delays, errors, and increased costs (Sodhi et al, 2018).

Supply chain management practices face many challenges in order to be implemented in a proper way. Some of the factors that affect supply chain management are: NGOS mainly relies on donations and grants, leading to restricted budgets for procurement, storage, and transportation. Human resource limitations as skilled personnel in supply chain management can be scarce in NGOS, which impacts the efficiency of SCM (chipepo & Dr-richard, 2018).

Uncertain environments and complex logistics are the main operational challenges most NGOS face since they frequently operate in disaster zones and regions with unpredictable conditions. Delivering aid to remote areas or large beneficiary groups necessitates adaptable logistics strategies (Merschel & Van, 2008).

Other important factors faced by the SCM are information sharing and collaboration; building trust and effective communication with partners throughout the supply chain is crucial. Risk management: NGOS need to be prepared for potential distribution, including theft, spoilage, or political instability.

Human capital efficiency plays a critical role in effective SCM organizations. A skilled work force in procurement, logistics, and warehouse management can optimize resource allocation and improve decision-making. A skilled work force fosters better communication and collaboration with partners throughout the supply chain (Brian & katherine, 2010).

Inventory management is a crucial aspect of SCM. Having a managed inventory will help to control the cost by minimizing overstocking and understocking. Overstocking ties up valuable funds and risks spoilage, while understocking leads to stock outs and delays. Having the right inventory levels ensures a quick response to emergencies (Loundry, 2010).

Strong management support is also critical for effective SCM; it has an impact on strategic direction, resource allocation, and the culture of collaboration (Bechini, 2022).

1.2 Statement of the problem

Supply chain management techniques must be implemented correctly for humanitarian groups to function effectively. Non-governmental or humanitarian groups frequently struggle to manage their supply chains due to a lack of staff, adequate supply chain management, declining knowledge, and a shortage of inventory or stock. (Kovács & Spens, 2007).

There are different perspectives on how human capital impacts supply chains. As seen in studies by Krajewski et al. (2016), they emphasize efficiency and cost reduction through practices like lean manufacturing. While this can be beneficial, it might overlook the strategic value of a skilled workforce. Research by Huo et al. (2014) suggests that human capital indirectly influences supply chain performance by improving operational efficiency, where a highly skilled workforce can be a source of competitive advantage. Lee and Ng (2009), argue that companies with a more skilled workforce achieve better results in areas like inventory management, on-time delivery, and customer satisfaction, but based on Gnasekaran and Ngai (2005) they discussion the potential of automation to improve efficiency in some SCM tasks, they suggest that automation can free up human capital resources for more than strategic activities.

Based on the study of Gligor et ai,(2019), industry sectors can have a stronger influence on SCM than company size. The company's business strategy (cost leadership) shapes the SCM practice more than the size of the company. Beamon, (2003) agrues that based on their size Small companies prioritize flexibility, cost efficiency, and personal relationships. Medium companies focus is on scalability, process standardization, and diversification. large company’s aims for global efficiency, advanced technology Each size category faces a unique challenge and opportunity in SCM.

Based on the report of National Retail Federation (2003), storing inventory incurs storage, insurance, and handling costs; having too much stock incurs costs like warehousing and potential storage. Excessive inventory can strain resources and reduce profitability, but according to the Aberdeen Group report (2005), holding a large amount of stock makes companies less adaptable to market shifts. If demand for a product wanes, they are stuck with potentially obsolete inventory. This also works with international organizations that work on humanitarian activities.

NGOs in Ethiopia use a variety of supply chain management (SCM) techniques; a greater proportion of NGOs and international organizations have not successfully implemented SCM strategies (Mohammed, H.A., 2012). Research has not been conducted to evaluate the appropriate application of SCM methods, despite the fact that the Research Triangle Institute (RTI) has been using them. Without the necessary academic background, the majority of the department's professionals or human resources were transferred from another department. With their existing level of understanding of SCM procedures, the SCM team is not adequately capacitated. It lacks effective inventory management, and CEOs and other management bodies do not provide the SCM department with adequate support. Inadequate communication of information between staff and management.

On the basis of it, the factors were looked at to see how they impacted the SCM practice's implementation. As a result, for supply chain management to be successful, human capital efficiency, inventory management, information exchange, managerial support, and company scale are essential; nevertheless, there is frequently a disconnect between these components. This disparity shows up as a deficiency in alignment and integration. A knowledgeable workforce should ideally use management support and information sharing to maximize inventory management, which would then feed into a more comprehensive and adaptable supply chain strategy.

1.3 Research Questions

1. How human capital efficiency affect the implementation of supply chain management practices?

2. How inventory management affect implementation of supply chain management practices?

3. How management support affect implementation of supply chain management practices?

4. How information sharing/ communication affect implementation of supply chain management practices?

5. How the size of a company affects the implementation of supply chain management practice?

1.4 General objective of the research

Generally, the objective of this study is examine factors affecting implementation of supply chain management practices: the case of RTI international in Ethiopia project" feed the future Ethiopia.

1.4.1 The specific objectives of the research

1. To investigate how supply chain management practices are implemented in relation to the effectiveness of human capital.

2. To comprehend how supply chain management practices are implemented in relation to inventory management.

3. To investigate how management assistance affects, supply chain management practice implementation.

4. To investigate information sharing/ communication strategy on implementation of supply chain management practice.

5. To review effect of company size on the implementation of supply chain management?

1.5 Significance of the study

For the managers,

The purpose of this study is to look at the variables that influence supply chain management techniques and how they are applied in the RTI International Ethiopia project. It gives great importance to the operation managers in the organization by guiding them through the factors that have a significant effect on supply chain practice. Based on the findings, the managers must pay good attention to the size of the organization and give support from the management to supply chain management teams.

The study gives great importance to purchasing managers and operation managers at RTI International Ethiopia by taking management support and organizational size into consideration. Other comparable effects are also observed in NGOS, since the study's findings offer a framework of guidelines for implementing supply chain management techniques.

1.6 Scope of the study

Conceptual Scope

The RTI Ethiopia project was used in the study's theoretical investigation of the variables influencing supply chain management techniques in multinational corporations. The study is limited to analyzing the effects of the following characteristics (human capital efficiency, inventory management, information sharing, management support, and organization size) on the application of supply chain management methods due to its unique goal and objective.

Geographical Scope

Geographically, the study was conducted at one of the biggest international organizations (RTI) research triangle institutes in Addis Ababa City. Due to the research objective and physical accessibility to certain regions, the research is limited to a single project of the organization.

Methodological Scope

In terms of methodology, the study uses quantitative research approaches and a cross-sectional survey research design. The targeted populations in this research are those who can provide adequate information. For this research, the researcher uses both primary and secondary sources of data.

1.7 Definition terms

Human capital efficiency: - is the sum of all the knowledge, skills, abilities, experience, intelligence, training, judgment, and wisdom that members of a population possess both individually and collectively. Optimizing people's skills, knowledge, and talents at different stages of the supply chain to improve overall performance and competitiveness is the relationship between human capital efficiency and supply chain management (Akintoye et al, 2010).

Information Sharing/ Communication strategy:

Information sharing or communication strategy are Channels or practices a company use to communicate and sharing information within the organization Information and communication strategies facilitate information exchange, which is essential for the dissemination of novel concepts and ideas (Burns, L. R., 2012). Information sharing in a supply chain refers to the

exchange of relevant ideas, insights and knowledge among, supply chain partners to enhance coordination, visibility and decision making across the network (Lambert & Cooper,2000).

Inventory Management:

Activities used to keep each inventory item at its ideal quantity or number, Laundry (2010). Planning and designing structures for the transportation of materials or handling logistics for the tangible components of a supply chain are all part of inventory flow management. (Lambert & Cooper,2000).

According to Gunasekaran, (2009) inventory management involves with determining the appropriate level of inventory, ordering and the right quantity of items, storing them properly and tracking where they are located and where they are used.

Supply Chain Management:

The responsibility of uniting organizational units along a supply chain and coordinating flows to meet customer requests in order to increase the supply chain's overall competitiveness is an activity related to supply chain management (SCM) (Adebayo & Fisher, 2012).

All the steps involved in getting a product from raw materials to customers—from sourcing parts and raw material manufacturing and assembly to warehousing and inventory tracking, distribution across channels, customer delivery, order entry and order management, and the information system required to track these activities—are collectively referred to as supply chain management. (Akintoye et al, 2010).

1.8 Organization of the paper

Five chapters comprise the organization of the research. Background information, the issue statement, the research questions, the study's significance, its scope, and a list of definitions are all included in the first chapter. The theoretical, empirical, and conceptual underpinnings of the study are included in the literature reviews in the second chapter. The research technique for this study is described in Chapter 3, and the results are covered in Chapter 4. Lastly, the discussion, conclusion, and recommendations for future study directions are given in Chapter Five.

CHAPTER TWO

RELATED LITERATURE REVIE

2. Introduction

This section consists of different literatures written on the area an overview in the supply chain management practice, theoretical review, empirical review, identification of Gap, definition of factors that affect supply chain management practice and conceptual frame work.

2.1 Theoretical Review

2.1.1 Supply chain management

The supply chain is made up of all entities involved in fulfilling a customer request, whether directly or indirectly. The supply chain involves not just suppliers and manufacturers, but also carriers, warehouses, retailers, and even end users. “The supply chain encompasses all operations involved in receiving and fulfilling a client request inside a company. New product creation, marketing, operations, distribution, financing, and customer support are just a few of these roles" (Chopra & Meindl,2007).

Suppliers, distribution services, and customers are the constituent parts of a supply chain, which is defined by Simchi-Levi (2007) as a combinatorial system with four processes: plan, source, make, and deliver. It has been demonstrated that supply chain management is a very effective method for offering dependable, quick delivery services at the lowest feasible cost.A network of interdependent businesses working together to control, monitor, and improve the flow of goods and information from suppliers to end users is referred to as the supply chain (Aitken J, 2000).

2.1.2 Supply chain management concept

Materials normally travel downstream from suppliers to customers in a supply chain, which is a network of manufacturers, distributors, retailers, suppliers, and customers. Information also goes both ways in this system. Supply chain management (SCM) is the process of organizing, directing, and monitoring the flow of products from suppliers to consumers. Consequently, decisions pertaining to strategy, tactics, and operations need to be taken (Charu & Swatantra, 2004). The distribution network configuration, inventory management, supply contracts,

outsourcing and procurement strategies, human capital efficiency, distribution strategy partnering, information technology and decision support systems, and customer value are the common key issues that face SCM activities (Charu & Swatantra, 2004).

The process of developing, implementing, and controlling aid flow in a way that is both economical and efficient is known as humanitarian supply chain management, or HSCM. It is a subset of supply chain management that encompasses nearly all of the functional activities performed by commercial supply chain management, including information management, sourcing, procurement, inventory management, logistics, and distribution (Tomasini & Van, 2004).

However, in contrast to the commercial supply chain, the humanitarian supply chain functions in extremely unpredictable circumstances, as several academics have emphasized. This is because, according to Wassenhove (2011), forecasting is very challenging due to the unpredictable nature of disaster occurrences and the severity of damage. Second, the catastrophe region is significantly impacted by the typical infrastructure collapse in the affected area. Third, system management is particularly challenging due to the transient nature of the humanitarian supply chain network. Meanwhile, it is challenging to predict when the necessary material and financial resources will be raised because every situation is unique. These elements work together to create a delicate and complicated system that is the humanitarian supply chain, making its administration more difficult than

2.1.3 Supply Chain Management practice

The entire range of steps performed by businesses to enhance internal supply chain performance is covered by the SCM practice. SCM procedures are defined as an assortment of activities that businesses perform in order to accomplish effective supply chain management (Suhong, 2006). The practice of supply chain management (SCM) explains how businesses coordinate their internal manufacturing, logistics, materials, distribution, and transportation functions as well as how they leverage the capabilities, technology, and processes of their suppliers to enhance supply chain performance and obtain a competitive advantage (Billington, 2001).

Supply chain management (SCM) practices are essentially the tools and techniques businesses use to optimize the flow of goods and services from raw materials all the way to the end

customer. An efficient supply chain minimizes waste and costs while ensuring products get delivered on time. Practices to consider are:

- **Strategic Planning**: This involves setting clear goals for your supply chain, like reducing delivery times or minimizing inventory costs. Understanding your business objectives is essential for crafting an effective SCM strategy (Jabbour et al, 2011).
- **Supplier Management:** A seamless supply chain depends on establishing solid bonds with suppliers. This involves practices like selecting reliable vendors, negotiating good contracts, and collaborating on forecasting and planning (Soosay et al, 2008).
- **Inventory Management:** Keeping the right amount of inventory on hand is a balancing act. Too little stock can lead to stock outs, while too much ties up capital and can lead to spoilage or obsolescence. Techniques like just-in-time (JIT) inventory management can help achieve this balance (Gunasekaran, A. (2009).
- **Information Sharing:** Cooperation throughout the supply chain requires open communication and information exchange. This could entail sharing information with all pertinent stakeholders about inventory levels, production schedules, and delivery estimates via technological platforms. (Mentzer et al,2016).
- **Technology Adoption:** Numerous technologies, such as enterprise resource planning (ERP), warehouse management, and transportation management systems, can increase the effectiveness of the supply chain. (Ahn et al, 2015).
- **Talent Management:** Developing a Skilled Workforce**:** A qualified and well-trained workforce is essential for efficient supply chain operations. This involves investing in training programs, talent development initiatives, and fostering a culture of continuous learning within the supply chain (Mentzer et al,2016).

2.1.4 Factors affect supply chain management

Several factors influence supply chain management methods. The supply chain management practices are influenced by both external and internal influences..

External factors,

- **Customer Demand:** According to Chopra and Meindl (2016), accurately anticipating customer needs and buying patterns plays a crucial role in efficient production planning and inventory management.

- **Supplier Relationships:** based on the study of Mentzer et al, (2016) such partnerships can enhance the reliability of supply, improve product quality, and contribute to better cost control throughout the supply chain.

- **Environmental Uncertainty:** Wieland et al, (2013) investigated how global supply lines are affected by geopolitical uncertainty. According to their research, supply networks can be severely disrupted by natural catastrophes, political unrest, and economic downturns, leading to delays and stock shortages.
- **Sustainability Concerns:** Seuring and Müller, (2008) discuss the growing trend of integrating environmental and social responsibility practices into supply chains. They propose a shift from a linear to a circular economy model where resources are reused and waste is minimized throughout the supply chain.

Internal factor

- **Inventory Management:** Krajewski et al,(2016) delves into the importance of inventory control policies for balancing inventory levels with customer demand. They discuss various methods, like EOQ (economic order quantity), to minimize total inventory costs while ensuring stock availability. Lee and Ng (2009) emphasize the significance of accurate forecasting in inventory management. explores various forecasting techniques like moving averages and exponential smoothing to predict demand fluctuations and optimize inventory levels.
- **Information Sharing:** Christopher, (2016) highlights the critical role of information sharing in supply chain management. He emphasizes the need for seamless communication and data visibility across all participants in the supply chain for effective coordination and responsiveness to changes.

- **Company size:** Company size plays a significant role in shaping supply chain management practices. Larger companies tend to have more resources for complex systems, while smaller companies prioritize agility and cost-effectiveness. Understanding these differences can help businesses optimize their supply chains for efficiency and success, regardless of their size (Stadtler & Kilger,2008).
- **Human capital efficiency**: In the context of supply chain management, simply getting the most value out of your workers has a big impact on processes. By investing in human capital efficiency through training, empowerment, and performance

management, companies can build a skilled and engaged workforce. This translates into better decision-making, collaboration, and problem-solving, ultimately leading to more efficient and adaptable supply chain practices (Gunasekaran, 2009).

2.1.5 Theory on supply chain management

- **Resource Based View Theory**

According to the Resource Based View (RBV) Theory, a firm's capacity to establish and maintain a competitive advantage and enhance SC performance is influenced by its ability to identify and own internal strategic resources (Barney, 2012). If a resource satisfies certain requirements—it must be valuable, non-replaceable, unique or uncommon, and imitable to improve the firm's SC performance it is deemed strategic. Given the dynamic external circumstances that a firm encounters in the cutthroat business world, resources must be effectively managed and utilized (Lippman & Rumelt, 2003).

A well-managed supply chain is essential to creating a competitive advantage and adding value to the company in today's fiercely competitive global market (Lambert & Cooper, 2000). According to Min and Mentzer (2004), competition is now characterized as supply chain against supply chain rather than firm against firm. The establishment of connections between a company and its suppliers and consumers facilitates the management of material flow and quality into and out of the business, which should have a direct positive impact on operational performance (Miyare, 2014). As a result, this theory highlights the components as a valuable tool for international humanitarian organizations implementing supply chain management techniques.

2.2 Empirical Review

There are different perspectives on how human capital impacts supply chains. As seen in studies by Krajewski et al, (2016), they emphasizes efficiency and cost reduction through practices like lean manufacturing. While this can be beneficial, it might overlook the strategic value of a skilled workforce. Research by Huo et al. (2014) suggests that human capital indirectly influences supply chain practice by improving operational efficiency. This aligns with the RBV perspective, where a highly skilled workforce can be a source of competitive advantage. Accordingly, Lee and Ng, (2009) argue that companies with a more skilled workforce achieve better results in areas like inventory management, on-time delivery, and customer satisfaction, but based on Gnasekaran and Ggai (2005) they argue on the potential of

automation to improve efficiency in some SCM tasks, they suggest that automation can free up human capital resources for more than strategic activities.

Roy and Wilkinson,(2004) emphasize the strategic importance of human capital for effective supply chain management, particularly in today's globalized environment. The research highlights the need for assessing the specific tasks and skills required within an organization's supply chain and aligning workforce development accordingly. Richard and Gray (2009) argue that training programs specifically tailored to supply chain needs are crucial. Aligning the overall human capital management strategy with the organization's supply chain management goals fosters a more efficient and effective supply chain.

Inventory management is a critical aspect of business operations, impacting factors like cost, customer satisfaction, and overall profitability. Effective inventory management is statistically significantly correlated with profitability as determined by gross margin, according to research by Ganas et al. (2015).This suggests that companies can improve profits by optimizing inventory turnover and managing different inventory categories effectively. But Gokhale and Kaloji,(2018) emphasize the importance of striking a balance between ordering and carrying costs. Inefficient inventory management can lead to stock outs (lost sales) or excessive inventory (higher storage costs).

Research suggests that traditional inventory control models like EOQ might not always be suitable for highly volatile demand patterns or situations with frequent product updates. In such cases, more dynamic inventory management approaches might be necessary. Chandra and Rai (2016) found that implementing sophisticated inventory management systems can be complex and require significant resources, especially for smaller businesses. Studies acknowledge these challenges and suggest that the complexity of the system should be balanced with the size and needs of the organization. (Handfield et al,2003).

Information sharing is a crucial aspect of collaboration, knowledge management, and decision-making across various contexts. Studies by zhe and wanpracha (2015) points that information sharing among employees led to better-informed decisions. This highlights the value of knowledge exchange for effective decision-making. On the other hand, Eric (2006) suggests that information sharing within design team’s fosters creativity and innovation by allowing team members to build on each other's ideas. Open communication and knowledge exchange are crucial for generating new solutions. Studies by Schols and Veer, (2005) says that

information sharing improves workflow efficiency. Timely access to relevant information allows individuals to avoid duplication of effort and complete tasks more effectively.

Davenport et al. (1998) discuss the potential for knowledge loss through information overload and information leakage in situations where everything is shared freely. Organizations might need to find a balance between openness and protecting sensitive information. Tsai and Ghoshal (1998) suggest that unrestricted information sharing can stifle creativity in certain situations. Competition for ideas or fear of criticism might discourage individuals from sharing ground-breaking ideas freely.

Andebe,(2013) highlights the importance of management allocating resources (financial, human, and technological) necessary for effective SCM implementation. Without dedicated resources, initiatives may struggle to gain traction. he also emphasizes the need for management to align SCM strategies with overall organizational goals. This ensures all departments work towards the same objectives and fosters collaboration across the supply chain. Jüttner et al. (2003) point out that a limited understanding of SCM concepts among executives can hinder support. Education and awareness campaigns can bridge this gap.

Adebayo and Fisher, (2012) acknowledge that some management teams prioritize short-term financial results over long-term investments in SCM initiatives. It's crucial to demonstrate the long-term benefits of effective SCM practices.

2.2.1 Identified literature Gap

According to the different reviews human capital efficiency, inventory management, information sharing, management support and company size are all crucial for successful supply chain management; based on the researches there is a gap between different reviews that supports this factors have a significant positive effect on SCM practices.

One issue with supply chain management techniques affects RTI International, a global business. In their crisis response operations, the majority of NGOS employed a variety of supply chain strategies, including inventory optimization and working with customers and beneficiaries. However, the setting of large organizations is where supply chain management concerns are examined further.

Based on the reports of the organization (2021 and 2022), the company is not giving that much attention to the listed factors; the implementation of supply chain management practices is not getting any attention from the management; the report shows that those practices are implemented by different departments.

A gap also exists between these elements. This gap manifests as a lack of integration and alignment. Ideally, a skilled workforce would leverage information sharing and management backing to optimize inventory management, all feeding into a broader and more responsive supply chain strategy. Often, however, departments operate in isolation, employees lack proper training, and management fails to provide the necessary resources. Bridging this gap requires creating cross-functional teams, up skilling the workforce, implementing relevant metrics, and securing leadership commitment. By fostering integration and collaboration, organizations can achieve

Loundry, (2010) demonstrates that information sharing fosters collaboration among supply chain partners. Real-time data visibility allows better planning, resource allocation, and joint problem-solving. Burns, (2012) highlights how information sharing improves demand forecasting accuracy. By sharing sales data, production plans, and market trends, partners can anticipate fluctuations and respond more effectively. Lambert and Cooper, (2000) also suggest that information sharing can lead to reduced lead times and inventory holding costs. Better visibility across the supply chain allows for just-in-time inventory management and faster order fulfillment.

2.3 Study Variables

2.3.1 Human Capital Efficiency

A grouping of resources; all the information, aptitudes, capacities, experience, intelligence, education, discernment, and knowledge that members of a population possess both individually and collectively According to Akintoye et al. (2010), new graduates still require on-the-job training and experience, despite the growing tendency of hiring entry-level planners, analysts, and schedulers from universities and colleges. When evaluating new hires, 66% of companies suggest that a bachelor's degree in logistics, supply chain management, or a similar field is necessary.

2.3.2 Inventory Management

Planning and designing for the transportation of materials or handling logistics related to the triangle-shaped supply chain's components are all part of inventory flow management (Alverson, 2003). It primarily addresses obtaining replacement components and spare parts, ordering and purchasing quality control, shipping regulations, and warehousing. Data from the inventory system and master schedule are used by the material need planning system. The master schedule item is then broken down into sub-assembly and raw material requirements. These are compared to what is already on hand, and the particular requirements for each item are computed. In order for components to be available as indicated in the planned master timetable, it specifies when orders should be released. In the event that a procurement item indicates (Loundry, 2010), the master schedule remains unchanged.

Optimizing inventory management at every stage of the supply chain is essential to high-performing supply chains. Reduced risk of obsolescence, cheaper overall supply chain costs, and enhanced responsiveness and flexibility are some advantages of lower inventories (Gunasekaran, 2009).

2.3.3 Management Support

Four facts are provided by managerial support to guarantee that the suggested procedures are implemented completely in the sectors. Among them are managerial accountability, A greater degree of managerial commitment and leadership is required for the implementation of supply chain management techniques. Furthermore, the success or failure of any application may be influenced in part by the organizational culture. It is likewise not acceptable to overlook or give up on an organization's core management systems. In light of this, resource management is a crucial prerequisite for offering an engaging training program that helps businesses achieve operational excellence in areas like infrastructure, work environment, and staff development (Andebe, 2013).

2.3.4 Information Sharing

Application of supply chain management practices heavily relies on communication and information sharing. Information and communication strategies facilitate information exchange, which is essential for the dissemination of novel concepts and ideas (Kazi, 2012).

He talks about how ideas and thoughts exchanged through information sharing can serve as catalysts for the efficient use of supply chain management. Innovation in the supply chain is heavily dependent on ideas and concepts that are best communicated by utilizing information and communication technology to improve processes. The majority of businesses that have prospered by using innovation in supply chain management make significant investments in cutting-edge technologies, such as information and communication technology. ICT improves systems and processes, enabling businesses to operate more cost-effectively and efficiently.

2.3.5 Organizational size

Resource Availability, Larger companies generally has more resources to invest in sophisticated technologies this allows them to potentially achieve greater efficiency and optimization in areas like inventory management and transportation planning Carter et al,2003). Larger companies often have more complex supply chains with a greater number of suppliers, products, and distribution channels. This complexity necessitates robust SCM practices to manage information flow, inventory levels, and potential disruptions effectively (Mentzer et al, 2016). Smaller companies often have fewer resources to dedicate to sophisticated SCM practices. This can limit their ability to invest in expensive technologies or hire specialized personnel for SCM functions (Lambert & Cooper, 2000).

2.3.6 Supply chain management (SCM)

Supply chain management refers to all of the procedures that go into bringing a product from raw materials to the consumer (SCM). Parts and raw material procurement, manufacturing and assembly, inventory tracking and warehousing, multichannel distribution, customer delivery, order entry and management, and the information systems needed to monitor these processes are some of these processes (Lummus & Vokurka, 2008). According to their research, six constructs—supply chain integration, chain characteristics, information sharing, supply customer service management, and JIT capability—have been derived from supply chain management methods.

2.4 Conceptual frame work

Wilson et al. (2015) define a conceptual framework as a written or visual output that, either narratively or visually, defines the main concepts, variables, or items to be explored along with

the presumed link between them.The conceptual framework for this investigation is shown in Figure 1. Based on the study objectives, literature, and hypothesized relationship between the factors and supply chain management practices, the conceptual framework identifies the elements influencing supply chain management practices in one of the international organizations projects in Ethiopia. The supply chain practice is the dependent variable in this study, whereas information sharing, inventory management, human capital efficiency, supply chain management, and organization size are the independent variables.

Independent variable dependent variable

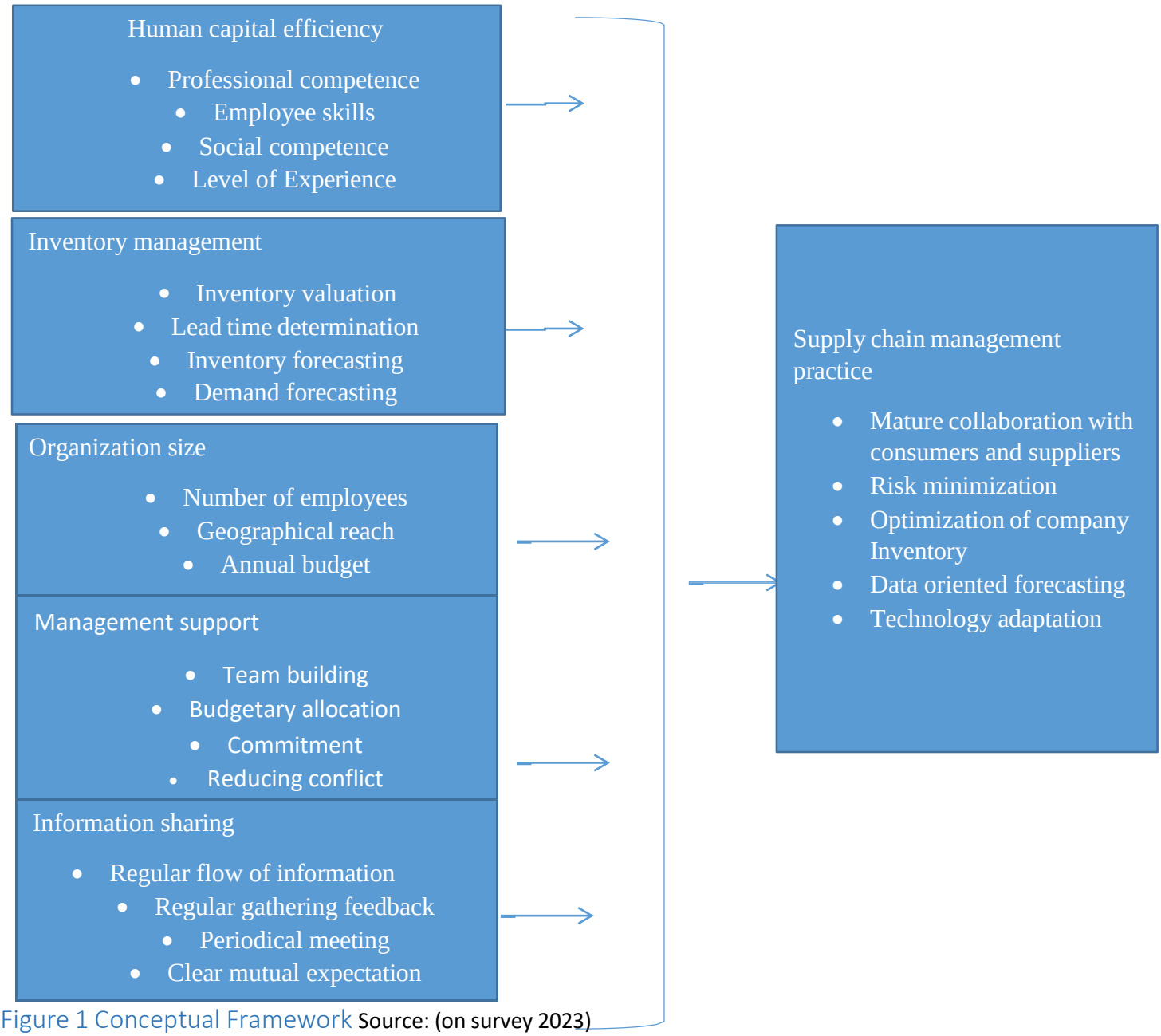

Figure 1 Conceptual Framework Source: (on survey 2023)

2.4.1 Hypothesis summery

HO1. There is significant relationship between human capital efficiency and implementation of supply chain management practices.

HO2. There is significant relationship between inventory management and implementation of supply chain management practices.

HO3. There is significant relationship between executive/ management support and implementation of supply chain management practices.

HO4. There is significant relationship between information sharing/ communication strategy and implementation of supply chain management practices.

HO5. There is significant relationship between organization size and implementation of supply chain management practices.

CHAPTER THREE

Research Methodology

3. Introduction

This chapter presents the useful techniques that were applied to address the research questions and achieve the study's goals. Which includes research design, research approach, target population data collection and the validity of the measurements used. The primary motivation for this study is the conviction that determining the variables influencing supply chain management practice implementation is essential to enhancing the organization's performance over the long run.

3.1 Research design

The research uses an explanatory research design. Explanatory research aims to identify cause-and-effect relationships between variables. It goes beyond simply describing an association between variables and seeks to understand why one variable influences another (George,2022). The study applies a cross-sectional survey in the field, which involves planning and creating a structured set of questions to gather information from a targeted group of individuals.

3.2 Research approach

In this study, the researcher uses a quantitative research approach. The quantitative approach provides researchers with a structured and systematic method for studying phenomena, generating empirical evidence, and drawing meaningful conclusions based on the statistical analysis. The quantitative research approach aims to collect data through a survey questionnaire.

3.3 Target population

The study includes all employees working in the RTI international operations and supply chain management department, which consists of 107 managers and employees in total since every employee is involved in the supply chain activity. In order to ensure that everyone gets the chance to participate, the researcher uses a census survey method, which yields more precise and dependable data than sampling. A census can be expensive and time-consuming to conduct. The benefit, though, is that it enables the researcher to obtain precise data (John, 2009).

3.4 Data collection method

Data were collected from primary and secondary sources that are directly related to the research. The primary source of the data was the employee's response to the structured questionnaire that was used to collect crucial information from RTI international employees. The structured questionnaire ensures consistency in data collection, making it easier to analyze and compare responses across different participants. It is also used to measure the attitudes, behaviors, and characteristics of a population. Written items pertaining to the organization, such as articles, published and unpublished materials, served as the secondary source of the data.

3.5 Data analysis

Using SPSS version 24, the gathered data were examined using regression and descriptive statistics including frequency, percentages, mean, and standard deviation. Descriptive statistics is used to describe and summarize the main features of the dataset. It helps a researcher understand the basic characteristics of the data, such as central tendency and variability. By providing a clear and concise summary of the data, descriptive statistics allow for easier interpretation and communication of findings to others. To help with understanding of the variables, frequency tables and graphs were used to present the findings.

3.6 3.6 Ethical Consideration Confidentiality

the respondents were assured that they would not be confused and that their response would remain confidential. The information they provide is confidential and used for academic purpose only. Purpose of the study was explained to the respondents prior to the collection of data.

3.7 Validity of the Measurements Used

Sound measurement claims require validity and reliability testing (Kothari, 2005). Validity, or the degree to which an instrument accurately measures what it is intended to assess, is determined by discussion with the research adviser. Reliability is the degree of accuracy and precision of a measurement technique.

Dependent and Independent variable	Cronbach's Alpha	N/items
Human capital efficiency	.713	4
Inventory management	.758	4
Management support	.774	4
Information sharing	.788	4
Organizational size	.733	3
Supply chain management	.757	5
Overall Reliability statics	**.732**	**6**

Table 3.1: reliability test result of variables
Source: on survey-2024

Cronbach's Alpha is a method used to determine an instrument's credibility (reliability). The test's value ranged from zero to one. High internal consistency in the items is indicated by a higher value. According to George and Mallery (2003), the reliability test categories are Excellent (1-0.9), Good (more than 0.8), Acceptable (more than 0.7), Questionable (greater than 0.6), Poor (higher than 0.5), and Unacceptable (less than 0.5). The study's reliability analysis is shown above, for all of the study's components, the overall Cronbach's Alpha's coefficient is 0.732 which is an acceptable level to conduct the rest thesis.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4. Introduction

The results from the study's primary instrument are covered in this chapter. It talks about the traits of the participants and their perspectives for evaluating the elements influencing supply chain management techniques in international non-governmental organizations in Ethiopia. The researcher included tables and graphs that summarized the respondents' collective comments to help streamline the conversations.

4.1 Response rate

Out of 107 Questionnaires that were distributed to the organization's employees 90 questionaries' are returned and that explain 84% of the questionaries' are returned the remaining questionnaires were not collected for various reasons. 84% response rate on returned questionnaires is used as the basis for the analysis. The response rate is sufficient for further investigation.

4.2 Demographic Information of the Respondent

Demographic information provides data regarding research participants and it is necessary for the determination of whether the individuals in a particular study are representative sample of the target population for generalization purpose or not. The demographic part of the questionnaires is consisting of Gender, Academic qualifications and experience.

4.2.1 Gender respondent

As can be seen from Table 4.1, there are more male respondents than female respondents, suggesting that the organization has an unequal gender distribution. Out of the 90 respondents who were fully fielded and returned, 72(79.1%) are male respondents, while 18 (19.8%) are female respondents.

Table 4.1 Gender responder

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	72	79.1	80.0	80.0
	Female	18	19.8	20.0	100.0
	Total	90	98.9	100.0	
Missing	System	1	1.1		
Total		91	100.0		

Source: on survey-2024

4.2.2 Educational Level

In terms of education, 61 respondents, or 67%, have received their first degree, while 4 respondents or 4.4%, have acquired a diploma and 25 respondents or 25% of the respondents have second degree or postgraduate degree. This shows us that the respondents were educated individuals who could read and comprehend the survey and they all are able to understand relationships between the factors that stated at the questionaries' and the SCM system. So researcher believes that the appropriate information is then gathered.

Table 4.2 Educational Level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Diploma	4	4.4	4.4	4.4
	First Degree	61	67.0	67.8	72.2
	Masters	25	27.5	27.8	100.0
	Total	90	98.9	100.0	
Missing	System	1	1.1		
Total		91	100.0		

Source: on survey-2024

4.2.3Experience Respondents

Work experience up the final demographic factor. Out of 90 respondent 83 (92.2%) employees have an experience of more than 4 year at the company and the rest 7.8 % or 7 employees have an experience between 0 up to 3 year at the company. because of more than 92% employees fall in the experience categories of more than 4 years which helps the researcher that the respondent give their answer in a well manner which they understand what is happening at company regarding the implementation of SCM at the company regarding the listed independent variable. Thus, the information gathered is reliable

Table 4.3 Experience at the organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0_3	7	7.7	7.8	7.8
	4_7	28	30.8	31.1	38.9
	8_12	35	38.5	38.9	77.8
	more than 12	20	22.0	22.2	100.0
	Total	90	98.9	100.0	
Missing	System	1	1.1		
Total		91	100.0		

Source: on survey2024

4.3 Descriptive Analysis of Measurement Items

In descriptive research, all mean value determinations are predicated upon the average scope measurement reported by Sadeghi et al. (2012). A mean score falling below 3.39 is considered poor, a mean score between 3.80 and 3.99 is considered high, and a mean score between 3.40 and 3.79 is considered intermediate. The standard deviation's value was determined using Joshka's standard deviation decision rule. According to the formula "estimate the coefficient of variation (CV=standard deviation/Mean)," a variation level that is low (CV = 1) or >= 1 implies a moderately substantial level of variance. Consequently, distributions with high variance have a coefficient of variation (CV) greater than 1, while distributions with low volatility have a CV less than 1.

The below tables show a summary of the mean and standard deviation values for respondents' agreements on all variable-related factors. The total mean value for the Human capital variable is 4.42, and the standard deviation is 0.416, which is a small fluctuation. According to Sadeghi et al,(2012) mean scope measurement, the overall mean score of 4.42 is in the high ranges, indicating that the organization's human capital efficiency has a great extent effect in employee's professional competence in developing their skills and also in their social competence and increasing their experience at their work.

Table 4.4 Descriptive Statistics

	Mean	Std. Deviation	N
SCM	4.49	.313	90
IM	4.43	.386	90
HC	4.42	.416	90
MS	3.27	.524	90
IS	4.44	.403	90
OS	3.21	.665	90

Source: on survey-2024

According to the four items in the questionnaires, which are the average or the mean shown in Table 4.4, 90 respondents were asked to rate how much they agreed with the statement on the impact of inventory management on supply chain management implementation throughout the firm. The responses indicate the respondents' level of agreement. the combined mean value of those items/statements is 4.43 and the standard deviation is0.386 which tells as previously said, the mean score ranges from 3.80 and above are considered high. according to Sadeghi et al, (2012), and when its compared to this mean score measurement's aggregate mean value of 4.43

for inventory management the outcome is high. From this the researcher concludes inventory management of the organization have effect on the implementation of SCM at organization regarding the forecasting of demand and inventory itself and also regarding the invisibility and lead time determination.

The mean and standard deviation summary values of respondents' agreements on items of the management support variable is shown in the tables above for a total of 90 respondents, the combined mean value of those items/statements is 3.27, and the standard deviation is.524 as was previously said, the mean score ranges below 3.4 are considered low Sadeghi et al, (2012). When the management support variable's aggregate mean value of 3.27 is compared to this mean score measurement, the outcome is low. From this the researcher concludes that the employees believe that there is moderate or low management support in the implementation of SCM at the organization regarding the team building, budgetary allocation, commitment and reducing a conflict at the organization. The tables show an overview of the means and standard deviations for respondents' agreement with various information sharing variable items for a total of 90 respondents, the combined mean value of those items/statements is 4.44 with .4034 standard deviation which means score ranges above 3.80 are considered high accordingly researcher can conclude that there is a very great effect or relationships between information sharing and SCM at the organization regarding the regularly information sharing, regular flow of information, clear mutual expectation and periodical meetings which leads the team to a good result at their work.

The mean and standard deviation summary values of respondents' agreements on items of the organizational size variable is shown in the tables above for a total of 90 respondents, the combined mean value of those items/statements is 3.21, and the standard deviation is 0.665 as was previously said, the mean score ranges below 3.4 are considered low. When the organizational size variable's aggregate mean value of 3.21 is compared to this mean score measurement, the outcome is low. From this the researcher can concludes that the employees believe that there is moderate or low relationships or effect between organizational size and the implementation of SCM at the organization regarding the effect of number of employees, geographical reach and annual budget at the organizational SCM implementation.

4.4 Correlation Analysis

In this part, a bivariate correlation analysis (Pearson correlation r) is conducted between the independent variable and the dependent variable in order to ascertain the direction and degree of the association among factors. Correlation analysis can be used to gauge how strongly variables are related linearly and the coefficient represented by the letter R (Saunders,2014). It can take on any value between +1 and -1. A value of +1 represents a perfect positive correlation. Weaker positive and negative correlations are represented by correlation coefficients in the range of +1 and -1(Saunders, 2009). In addition, Schober, (2016) confirm that a monotonic link between two variables is measured via correlation. The covariance is a dimensionless percentage of the Pearson association coefficient; which equals range from – 1 to +1. If the value is -1, there is a perfect negative relationship, if the value is 0, it is an indication of there is no connection, and +1 denotes a perfect positive relationship.

Table 4.5: Interpreting a Correlation Coefficient Conventional

Schober, P., C. Boer, and L. A. Schwarte (2018, p.1765)

Absolute Magnitude of the Observed Correlation Coefficient	Interpretation
0.00–0.10	Negligible correlation
0.10–0.39	Weak correlation
0.40–0.69	Moderate correlation
0.70–0.89	Strong correlation
0.90–1.00	Very strong correlation

Tables 4.5 shows whether there is a positive connection between independent variables and a dependent variable, the aforementioned correlation analysis was conducted. As per the explained in the below tables human capital efficiency and SCM had a moderately positive relationship (r=.556, n=90, P0.01, significant level 0.000, 2-tailed). According to Schober, Boer, and Schwarte (2018), a moderate correlation has a correlation coefficient that lies between 0.40 and 0.69 so, when we see the relationships between SCM and inventory management they have a moderately good relationship (r=.445, n=90, P0.01, significant level 0.000, 2-tailed). A Person correlation between SCM and management support has moderate and positive relation (r=.475, n=90, P0.01) at a 0.000 significant level, two-tailed. There is also a moderate and positive relationships between SCM and information sharing and organizational size (r=.543, n=90, P0.01, and r=.498, n=90, P0.01 significant level 0.000, 2-tailed) respectively.

In conclusion, the study demonstrates that there is a significant positive relationship between predictors (Human capital efficiency, inventory management, management support, and information sharing and organization size) and SCM, even though the magnitude of the Pearson correlation coefficient varies. In other words, an improvement in the predictors will lead to an improvement in implementation of SCM at the organization. The fundamental prerequisite for multiple linear regressions has been satisfied based on this Pearson correlation finding the independent and dependent variables have a linear relationship. then the researcher can use multiple regression analysis to look at how the independent variable affects implementation of SCM.

Table 4.6 Correlations table

Correlations							
		HC	IM	MS	IS	OS	SCM
HC	Pearson Correlation	1					
	Sig. (2-tailed)	0.000					
	N	90					
IM	Pearson Correlation	.334**	1				
	Sig. (2-tailed)	0.000					
	N	90	90				
MS	Pearson Correlation	.206	.275**	1			
	Sig. (2-tailed)	0.000	0.000				
	N	90	90	90			
IS	Pearson Correlation	.029	.190	.238*	1		
	Sig. (2-tailed)	0.000	0.000	0.000			
	N	90	90	90	90		
OS	Pearson Correlation	.002	.152	.273**	.224*	1	
	Sig. (2-tailed)	0.000	0.000	0.000	0.000		
	N	90	90	90	90	90	
SCM	Pearson Correlation	.556	.455	.475	.543**	.498	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	
	N	90	90	90	90	90	90
*. Correlation is significant at the 0.01 level (2-tailed).							

Source: on survey-2024

4.5. Regression Analyses

Regression analysis is a statistical method employed to determine the strength and character of the relationship between one or more independent variables and a dependent variable. Additionally, it demonstrates if variations in the dependent variable are correlated with variations in one or more independent variables and determining the impact of the independent

variable on dependent variable to determine whether the formulated hypotheses have an effect on implementation of supply chain management or not, the researcher has conducted numerous regression analyses.

4.5.1. Linearity

Linear regression analysis is a statistical technique used to model the relationship between a dependent variable and one or more independent variable.it is especially a way to find the equation of straight line that best fits the data. This allows the researcher to predict the value of the dependent variable based on the value of the independent variable. It is also a widely used technique because it is relatively simple to understand and implement (Montgomery, 2012).

Based on the test the linearity, correlation analysis is used to identify linear relationships between variables. As a result the relationship between the independent and dependent variables is linear.

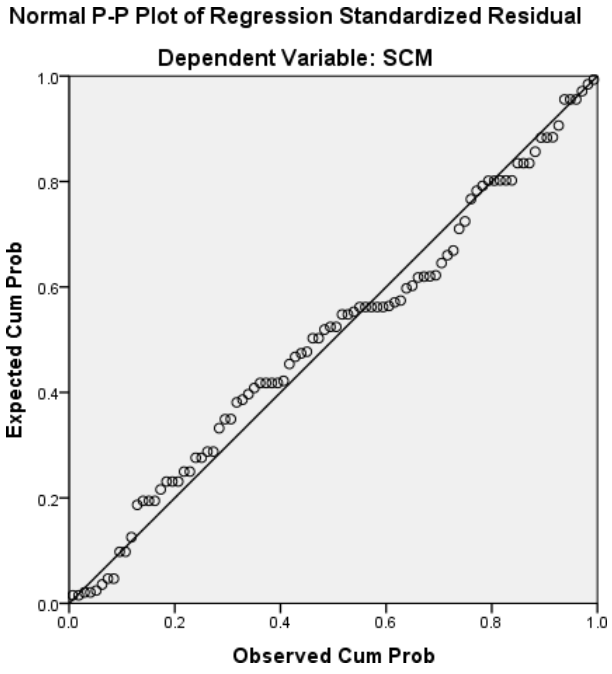

Figure 2: Linearity test

Source: on survey-2024

4.5.2 Normality

Normality assumption test is a statistical procedure used to assess whether a dataset adheres to normal distribution, also known as a bell curve. This normality assumption is crucial in many statistical analyses particularly linear regression, to ensure the validity of the results (Montgomery, 2012).

The distribution of any dependent variable value in respect to the independent variables of the model can be understood by the researcher through the use of a normality test. Therefore, a normality test was performed to ascertain whether the distribution of error terms is normal. The bell-shaped histogram below illustrates that the assumption of normalcy is not entirely broken.

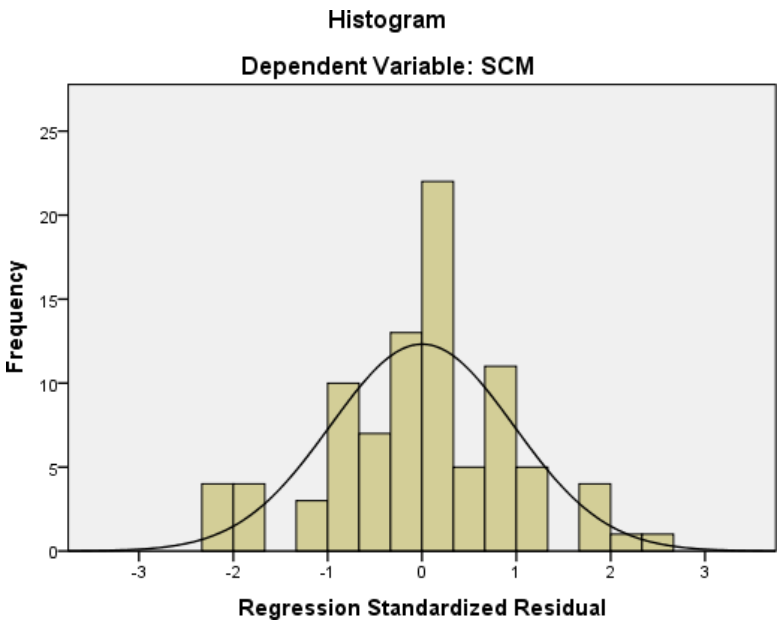

Figure 3: Normality test

Source: on survey-2024

4.5.3. No Perfect Multi-Collinearity

Perfect multi-Collinearity is a concern in regression analysis when two or more independent variables have an exact linear relationship. This essentially means one variable can be perfectly predicted from another, making it impossible to isolate the individual variable. This leads to unreliable coefficient estimate and hinders interpreting the independent effect of the collinear variable on the outcome (Belsley et al, 1999). Variance inflation factor (VIF) serves as a tool to gauge its presence. VIF measures the inflation in the variance of an estimated coefficient due to multi-Collinearity. A VIF of 1 indicates no inflation, while values exceeding 5 or 10 suggest potential multi-Collinearity issue.in essence, VIF helps quantify the extent to which multicollinearity affect the regression analysis, with perfect multi-Collinearity falling at the

extreme and of VIF spectrum (Montgomery, 2012).

In order to ensure there was no multi-Collinearity problem, the Collinearity diagnostic test was run based on that information. The findings show tolerance ranges from 0.670 to 0.751, indicating none of them were below 0.2. The Variance Inflation Factor (VIF), which ranges from 1.331 to 1.493, is less than 10. Therefore, there is no perfect multi-collinearity and one of the basic assumptions of regression holds true.

Table 4.7 Collinearity Statistics

Coefficients			
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	HC	.856	1.168
	IM	.816	1.226
	MS	.827	1.209
	IS	.890	1.123
	OS	.891	1.122

Source: on survey-2024

4.5.4. Homoscedasticity

Homoscedasticity is another key assumption in linear regression, signifies that the error (the difference between predicated and actual values) have consistent variance across all independent variables values. In a homoscedasticity scattered around the regression line, these points would be randomly distributed with equal spread, regardless of the independent variable value. if the residuals display a random pattern around the zero line it suggests homoscedasticity. Conversely, a funnel shape or any systematic trend in the residuals indicates heteroscedasticity (Montgomery, 2012).

The Breusch-Pagan test, which determines whether Homoscedasticity is present, has a p-value of ($p>0.05$). Samerkhanova and Kadochnikova,(2015) assert that looking at an ANOVA shows the lack of a heteroscedasticity issue if the value of p is greater than 0.05.

Table 4.8 Breusch-Pagan HomoscedasticityTest

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	7.435	5	1.487	99.336	.000[b]
	Residual	1.257	84	.015		
	Total	8.693	89			
a. Dependent Variable: SCM						
b. Predictors: (Constant), OS, MS, IM, IS, HC						

Source: on survey-2024

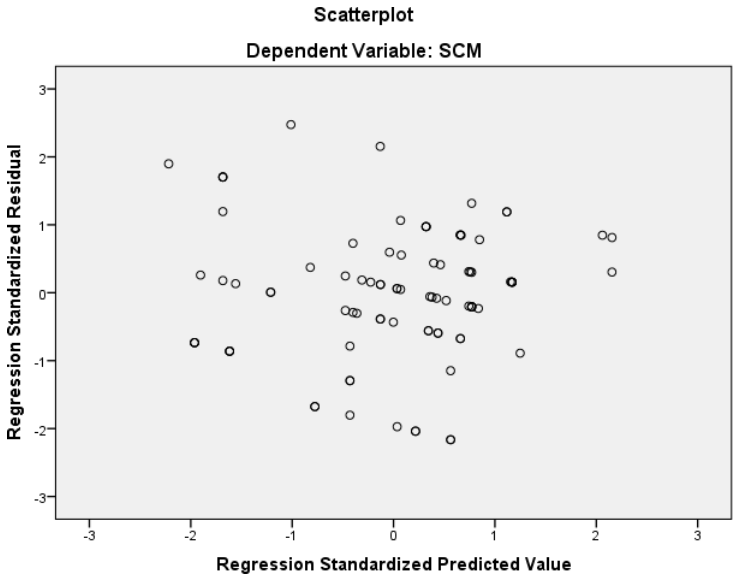

Figure 4- Homoscedasticity test

Source: on survey-2024

The model is significant (the researcher can accept the research hypothesis and reject the null hypothesis) if the P-value is less than 0.05. The model's significance in understanding the link between independent and dependent variables has been demonstrated by testing ANOVA. The significance value, as seen in the above table, is less than 0.05. The model is fit and acceptable, and we can thus draw the conclusion that the link between independent components and SCM is linear.

4.5.5. Model Summary

According to Table 4.9 model summary, the modified R square is 0.733, or 73.3%, meaning that the variance in implementation of SCM is clarified by a change in each of the independent variable. Nonetheless, the remaining 26.7% of variation in supply chain management implementation can be attributed to unobserved or other variables not included in this model of independent variables. The ANOVA table above illustrate F (5, 84) = 99.336, p<0.01 that

indicate the variation explained the effect of implementation of supply chain management. It is important that implementation of SCM by the organization does not occur by accident that it need the collaboration of those explained and unexplained independent variable to be in a good way or not. The model is therefore appropriate and suited.

Table 4.9 Model Summary

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.811[a]	.741	.733	.122	2.066
a. Predictors: (Constant), OS, MS, IM, IS, HC					
b. Dependent Variable: SCM					

Source: on survey-2024

4.5.7. Multiple Regression Coefficients

Multiple regression coefficients shows how much the dependent variable changes when one independent variable increases by one unit, while holding all other independent variables constant. The sign indicates the direction of the change, and the magnitude reflects the strength of relationship (Montgomery, 2012).

Table 4.10 displays the Beta coefficient, p-value, and associated standard errors for each independent variable. Each independent variable's or predictor's beta value indicates how strong it is. The dependent component of the model (supply chain management implementation) is impacted by (human capital efficiency, inventory management, management support, information exchange, and organizational size). The following independent variables, with beta values of 0.304, 0.208, 0.199, 0.328, and 0.113, respectively, are human capital efficiency, inventory management, managerial support, information sharing, and organizational size.

Table 4.10: - A Variety of Regression Coefficients

Model		U/Coefficients		S/Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.218	0.940		3.434	.0
	HC	.304	.058	.313	3.118	.012
	IM	.208	.072	.271	3.161	.043
	MS	.199	.017	.201	3.698	.047
	IS	.328	.073	.341	3.146	.002
	OS	.113	.088	.124	3.035	.017

Source: on survey-2024

4.5.8. Testing Hypotheses

The outcomes of previously formed hypotheses are discussed below based on the aforementioned multiple regression coefficients.

H1: 1 The Implementation of SCM is positively and significantly impacted by human capital efficiency, According to coefficient table 4.10 above, the Human capital efficiency has a beta value of 0.304 and is significant at (p0.05). Accordingly, a change in the Human capital efficiency alone accounts for a 30.4% variation in an Implementation of SCM when all other independent variables remain the same. It demonstrates how much the Human capital efficiency impacts an Implementation of SCM in the organization. So, the premise is accepted.

H2: Inventory management has a significant or favorable and strong effect on Implementation of SCM and has a beta value of 0.208 and is significant at (p0.05), as seen in the coefficient table above for 4.10. Keeping the other independent variables constant, this suggests that a change in inventory management is responsible for a 20.8% change in the Implementation of SCM. It demonstrates how an Implementation of SCM is substantially impacted by Inventory management. The hypothesis is therefore accepted.

H3: The Implementation of SCM is positively and significantly impacted by Management support. As seen in the coefficient table above, the beta value of 4.10 management support is 0.199 and it is significant at (p0.05). This indicates that a change in management support while keeping the other independent variables constant, causes a change of 19.9% in Implementation of SCM. It clarifies how much management support has an impact on the Implementation of SCM. The hypothesis is therefore accepted.

H4: Implementation of SCM is positively and significantly impacted by information sharing. Table 4.10 shows information sharing has a beta value of 0.328 and is significant at (p0.05) based on the aforementioned coefficient. This indicates that, while maintaining the other independent variables constant, a change in information sharing is responsible for a

32.8% change in Implementation of SCM. It elaborates how information sharing have a big impact on the Implementation of SCM at the organization.

H5: Implementation of SCM is positively and significantly impacted by organizational size. Table 4.10 shows organizational size has a beta value of 0.113 and is significant at (p0.05) based on the aforementioned coefficient. This indicates that, while maintaining the other independent variables constant, a change in organizational size is responsible for an 11.3% change in Implementation of SCM. It explains how organizational size have a big impact on the Implementation of SCM at the organization.

Therefore, the theory is accepted. The general regression model is expressed as follows:
SCM = 1.218 + 0.304HCE +0.208 IM + 0.199 MS + 0.328 IS + 0.113OS + μ

Where; SCM=Supply chain management, IM= Inventory management, MS=Management support, IS= Information sharing, OS= Organizational size and μ= error term.

Table 4.11: Summary of Research Questions, Hypothesis, and Research Findings

R.Q	Research Question (RQ)	Hypothesis	Research Findings
1	How human capital efficiency affect the implementation of supply chain management practices?	There is significant relationship between human capital efficiency and implementation of supply chain management practices.	Supported
2	How inventory management affect implementation of supply chain management practices?	There is significant relationship between inventory management and implementation of supply chain management practices.	Supported
3	How management support affect implementation of supply chain management practices?	There is significant relationship between executive/ management support and implementation of supply chain management practices.	Supported

4	How information sharing/ communication affect implementation of supply chain management practices?	There is significant relationship between information sharing/ communication strategy and implementation of supply chain management practices.	Supported
5	How the size of a company affect the implementation of supply chain management practice?	There is significant relationship between organization size and implementation of supply chain management practices.	Supported

4.6. Discussion of Results

The main objective of this study was to determine how the stated independent variables affected the use of SCM in the instance of an RTI organization. To understand this, the researcher distributed 107 questionnaires to staff, and 90 questionnaires were correctly completed and returned, which can be explained by 73.3% of the respondents, which was sufficient for the data analysis.

The standard deviation of each variable, according to the descriptive statistics, ranges from 0.313 to 0.605, indicating that employee responses are very consistent. The mean values of the variables range from 3.21 to 4.49, which explains that the employees agree on average on the items of the variables. Implementing those explained variables can help the organization implement supply chain management in a good way.

The correlation analysis result showed that there is a positive association between human capital efficiency and the implementation of SCM. Based on the outcome of the descriptive analysis, hypothesis one showed that human capital efficiency significantly affects the implementation of SCM. This means any change or improvement in human capital efficiency will change or improve the implementation of SCM, which is supported by the study of Huo et al. (2014), who suggest that human capital influences supply chain practice by improving operational efficiency. This finding also aligns with the RBV perspective, where a highly skilled workforce can be a source of competitive advantage.

The second goal of this study was to look into the effect of inventory management on the implementation of SCM in the organization. According to hypothesis two outputs, inventory management has a significantly positive effect on the implementation of SCM. This finding is also supported by Ganas (2015), who discovered a statistically significant correlation between profitable outcomes as determined by gross margin and effective inventory management, which implies inventory management is a critical aspect of business operations, impacting factors like cost, customer satisfaction, and the overall profitability of the company.

The availability of management support at the company helps the implementation of SCM, which explains the third hypothesis that management support significantly impacts the implementation of SCM at the organization. Organizations' core management systems cannot be disregarded or abandoned, and human resource management is a crucial prerequisite for offering an interactive training program that helps businesses achieve operational excellence in areas like infrastructure, work environment, and employee development (Andebe, 2013).

The other one is that the study's goals were to show the impact of information sharing on the implementation of SCM at the organization, and the result of the hypothesis proved that information sharing significantly affects the implementation of SCM at the organization. The researcher is also supported by the findings of zhe and wanpracha art (2015), which say that information sharing among employees led to better-informed decisions, indicating that information sharing is a crucial aspect of collaboration, knowledge management, and decision-making across various contexts.

The study's final goal was to look at how organizational size affects implementation of SCM at the organization, and the hypothesis was tested. The result also shows that organizational size significantly affects the implementation of SCM at the organization. Larger companies generally have more resources to invest in sophisticated technologies, which allows them to potentially achieve greater efficiency and optimization in areas like inventory management and transportation planning (Carter et al, 2003).

Chapter Five

Summary, Conclusions, Recommendations, and Direction for Future Research

5.1 Summary

This study's primary goal was to investigate the factor or independent variable that affects the implementation of SCM at the RTI organization. Among the 107 questionnaires that were sent out to respondents, 90, or 84%, were returned. The Statistical Package for Social Science, or SPSS version 24, was used to analyze the completed surveys. The descriptive analysis portion of the investigation used combined mean and standard deviation values, and the effect relationship was examined using a Pearson correlation and multiple regression analysis. The pre-formulated hypotheses were then put to the test by comparing each predictor to the dependent variable separately.

According to the study's analysis of the respondents' demographics, out of 90, 72 (79.1%) were men and 18 (19.8%) were women. 92.2% of all respondents have more than 4 years of working experience, and human capital efficiency, inventory management, management support, information sharing, organizational size, and SCM all had aggregated means of 4.43, 4.42, 3.27, 4.44, 3.21, and 4.49, respectively, according to the description analysis. This indicates that respondents generally agreed with the items listed under each variable. The variable's overall standard deviations are 0.386, 0.416, 0.524, 0.403, 0.665, and 0.313, respectively. These values in the variable suggest that the distribution of the data and the group of responses that are closer to the mean value have a more or less low variance.

According to the Pearson correlation analysis, the independent components that are accounted for by the effectiveness of human capital, inventory control, managerial assistance, information exchange, and organizational support, at P 0.01, have a more or less substantial correlation with the implementation of SCM at the organization. According to the model summary, the adjusted R square is 0.733, or 73.3%, meaning that a change in any one of the independent variables can account for 73.3% of the variation in the implementation of SCM. However, other or unobserved variables outside the independent variables in this model can explain the remaining 26.7% of the variation in the implementation of SCM. Additionally, an ANOVA was used to determine the model's importance in illuminating the connection between independent and dependent variables. The significance value is less than 0.05, as shown in

Table 4.9. As a result, we can draw the conclusion that independent variables and dependent variables are correlated linearly, and the model is suitable and fits.

5.2 Conclusions

This study's primary goal was to investigate the factors that affect the implementation of SCM at the RTI organization. As we have seen from a variety of researchers, those explained factors or independent variables are crucial factors that greatly influence the implementation of SCM, and in fact, because they have a direct impact on the implementation of SCM, those factors are a major concern for organizations. Consequently, the study has achieved its objectives, and the investigator has deduced the subsequent conclusions based on the research findings:

When we see it from a specific objective perspective, the effect of human capital efficiency, inventory management, management support, information sharing, and organizational size on the implementation of SCM is that each independent variable has a different mean value. Through human capital efficiency, the organization has a good human capital efficiency program that is comfortable enough for the implementation of SCM at the organization. From the inventory management point of view, the researcher concludes that the organization has good inventory management, which is helping the organization in the implementation of SCM. There is also a good way to share information within an organization, which aids in the effective implementation of SCM. When we come to management support and organization size, there is a low mean when it is compared to the rest of the factors, which explains to us that there is low management support at the organization during the implementation of this supply chain management, and also that the organization size at RTI is also believed by the respondent to be a factor that slows them down at the implementation of good SCM at the organization.

5.3 Recommendations

The researcher offers the following suggestions, following the conclusion of the study, to the RTI organization: The study finds that the effectiveness of human capital, inventory control, managerial support, information sharing, and organizational scale all positively affect SCM implementation. From the mentioned variables, at the current condition, the employees believe the availability of good human capital efficiency, a good inventory management system, and a good information sharing method has the highest contribution to the implementation of SCM at the organization. So, those companies need to focus more on the way that the management

supports their team in different ways, and they also need to reevaluate their organizational size and determine in what way it is affecting the implementation of good SCM at the organization.

5.4 Limitation and Future Research Direction

The limitations of this study are similar to those of any other study. The study runs into a few unavoidable problems that may prevent it from being useful. In particular, because respondents completed a structured questionnaire to acquire the data, the data were self-reported, which may have introduced method bias. As a result of the study's brief duration, various additional pertinent topics went unnoticed. Therefore, it is advised that future researchers use different techniques for gathering data, such as focus groups and interviews, to get more precise information and in-depth justifications. Other restrictions included recalcitrant and uncommitted respondents who refused to complete and return the questionnaires, and the researcher believes that the result may turn in another direction or show us the whole picture of the organization and what it looks like in terms of the implementation of SCM regarding the five factors if the whole respondent gives their answer honestly. Finally, the researcher suggests that future researchers broaden their scopes and see how other unobserved variables may influence the implementation of SCM in addition to the five factors explained above.

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ADDIS ABABA UNIVERSITY
SCHOOL OF COMMERCE
DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGENMENT
GRADUATE PROGRAM

Questionnaire

Dear respondents, my name is Lamrot Getnet Demissie, the purpose of this questionnaire is to gather data on the factors affecting supply chain management a case in research triangle institute requirement set for awarding of a Master's Degree in Logistics and supply chain Management. The study is purely for academic purpose and thus not affects you in any case. So, your genuine, frank and timely response is vital for successfulness of the study. Therefore, I kindly request

you to respond to each items of the question very carefully.

General Instructions

There is no need of writing your name

Where answer options are available please tike the appropriate answer for the question

Contact Address

If you have any query, please do not hesitate to contact me and I am available as per your Convenience at (e-mail:lamrotgetnetd@gmail.com)

Thank you for scarifying your precious time in advance!

Questionnaires are used to assess the factors that affect Supply chain management a case in RTI

Addis Ababa

Name of the organization. Research Triangle Institute

Please tick ( ) the responded applicable to you

Section 1: demographic

Basic Information

1.Gender

Male [ ]

Female [ ]

2. state your experience in the organization

a) 0-3 years [ ]

b) 4-7years [ ]

c)8-12 years [ ]

d) more than 12 years [ ]

3. state your education level

a) Diploma [ ]

b) 1st degree [ ]

c) Master's degree [ ]

d) PhD [ ]

Section 2: assessment factors affecting implementation of supply chain management practice.

Human capital efficiency

1) To what extent do the following aspects of human capital efficiency affect implementation of supply chain management practices in your organization?

	To very great extent	to a great extent	to a moderate extent	to a moderate extent	to no extent
Professional competence					
Employee skills					
Social competence					
Level of Experience					

Inventory Management

1) To what extent do the following aspects of inventory management affect implementation of supply chain management practices in your organization?

	To very great extent	to a great extent	to a moderate extent	to a moderate extent	to no extent
Inventory visibility					
Lead time determination					
Inventory forecasting					
Demand forecasting					

Management support

To what extent do of executive/ management support affect implementation of supply chain management practices in your organization?

	To very great extent	to a great extent	to a moderate extent	to a moderate extent	to no extent
Team building					
Budgetary allocation					
Commitment					
Reducing conflict					

Information Sharing

1) To what extent do the following aspects of information sharing/ communication strategy affect implementation of supply chain management practices in your organization?

	To very great extent	to a great extent	to a moderate extent	to a moderate extent	to no extent
Regularly gathering feedback					
Regular flow of information					
Clear mutual expectations					
Periodical meetings					

Organization size

1) To what extent do the following aspects of organizational size strategy affect implementation of supply chain management practices in your organization?

	To very great extent	to a great extent	to a moderate extent	to a moderate extent	to no extent
Number of employees					
Geographical reach					
Annual budget					

Implementation of Supply Chain Management Practice

1) What is the trend of the following in your business for the last five years?

	To very great extent	to a great extent	to a moderate extent	to a moderate extent	to no extent
Mature collaboration with consumers and suppliers					
Data-oriented forecasting					
Risk minimization					
Optimization of company inventory					
Strategic sourcing					