DEBRE BIRHAN UNIVERSITY

COLLEGE OF BUSINES AND ECONOMICS

DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT

THE EFFECT OF SUPPLY CHAIN COLLABORATION ON THE ORGANIZATION PERFORMANCE: (IN CASE OF MOHA SOFT DRINKS LOCATED IN NIFAS SILK PLNAT)

MA THESIS

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A Thesis Submitted To Debre Birhan University College Of Business And Economics In Partial Fulfillments Of The Requirements For The Degree Of Master Of Art In Logistics And Supply Chain Management

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APPROVAL SHEET FOR SUBMITTING FOR FINAL THESIS

As members of the Board of Examining the Final MA thesis open defense, we certify that we have read and evaluated the thesis prepared by Mastewal Mintesinot under the titled on "the effect of supply chain collaboration on the performance of MOHA soft drinks industry located in Nifas Silk plant" and recommend that the thesis be accepted as fulfilling the thesis requirement for the Degree of Master of Art in Logistics and Supply Chain Management.

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Final Approval and Acceptance

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STATEMENT OF THE AUTHOR

I am Ms. Mastewal Mintesinot, hereby declare and confirm that the thesis entitled on the effect of supply chain collaboration on the performance of MOHA soft drinks industry located in Nifas silk plant is my own work conducted under the supervision of Dawit Hussein (Ass. professor). I have followed all the ethical principles of scholarship in the preparation, data collection, data analysis and completion of this thesis. All academic matter that is included in the thesis has been given recognition through citation. I have adequately cited and referenced all the original sources and I also declare that I have adhered to all principles of academic honesty and integrity. This thesis is submitted in partial fulfillment of the requirement for a degree of masters in logistics and supply chain management from the Post Graduate Studies at Debre Birehan University. I further declare that this thesis has not been submitted to any other institution anywhere for the award of any academic degree, diploma or certificate.

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DECLARATION

This is to certify that this thesis entitled on "the effect of supply chain collaboration on the performance of MOHA soft drinks industry located in Nifas silk plant" accepted in partial fulfillment of the requirement for the award of the degree of master of art in Logistics and Supply Chain Management by Debre Birehan University through the college of Business and Economics done by Mastewal Mintesinot under my guidance. The matter embodied in this thesis work has not been submitted earlier for award of any degree or diploma. The assistance and help received during the course of this investigation have been acknowledged. Therefore, I recommend that it can be accepted as fulfilling research thesis requirements.

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Advisor   Signature   Date

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CPFR   Collaborative planning, forecasting and replenishment practice

DS   Decision synchronization

IA   Incentive alignment

IS   Information Sharing

ISO   International standardized organization

JKC   Joint knowledge creation

KBV   Knowledge based view

NFPM   Non-financial performance measures

OP   Organizational performance

RBV   Resource based view

RS   Resource sharing

RV   Relational view

SCC   Supply chain collaboration

SCCC   Supply chain collaboration components

SCT   Social capital theory

SPSS   Statistical package for social science

VIF   Variance inflation factor

ABSTRACT

Supply chain collaboration is a process of two or more independent firms working together in supply chain to form long term relationship and working closely for common goals. The purpose of this study was to explain the effect of supply chain collaboration on the performance of MOHA soft drinks industry in Nifas silk plant. To achieve the objective of this study, explanatory and descriptive research design and quantitative research approach employed. The populations of the study were employees of MOHA soft drinks industry, those employees who work in this industry grouped in five departments via stratified random sample. The sample size from each department determined through stratified proportional sampling, and sample units from each department have been selected randomly. A total of 218 sample units were selected and 218 questionnaires were distributed to each sample units. Although, only 202 (93 %.) of questionnaires were correctly filled, returned and used for analysis. Then, SPSS version 23 was used for analyze, interpret and present the data captured via questionnaire through descriptive and inferential analysis method: means, standard deviation, correlation and regression analysis were used. Hence, the major finding indicates that, the descriptive analysis result shown information sharing, joint knowledge creation, decision synchronization and resource sharing has moderately implemented and incentive alignment respectively. Furthermore, Pearson correlation result revealed existence of statistically significant positive correlation between the set of supply chain collaboration components and performance of MOHA soft drinks industry. Finally, the regression result suggested that components of supply chain collaboration have statistically significant predicting power or effects on the performance of MOHA soft drinks industry. Therefore, this study recommended, MOHA soft drinks industry to improve performance and to ensure global competitiveness, giving more attention in properly implementing and improving of those and other supply chain collaboration components is better.

Key words: supply chain collaboration, information sharing, decision synchronization, resource Sharing, joint knowledge creation, incentive alignment and organization performance

1. INTRODUCTION

This chapter contains the introduction part of the research. It basically includes background of the study, background of the organisation, a statement of the problem, objective of the Study, basic research questions and Hypothesis, scope of study, significance of the study, operational definition and Organization of the study were discussed.

1.1 Background of the study

Supply chain collaboration defined as the process of two or more independent firms working together in supply chain to create and add value for ultimate customers and stakeholders within a greater success, which is unable to achieve in separately (Ramaswami et al., 2004). In other word, SCC is firms need to coordinate cross firms activities and working together over time to produce superior performance, which is a single organization cannot be achieves the desired objective by itself. Because, customers become more demanding and competition is become increasing (Anderson & Narus, 1990).

Around the world, Supply chain has become highly and forced strategy that is being practiced by firms. So, to ensure competitiveness over the world market for over years are giving importance attention to building collaboration with their partners. It means, the impact of collaborations is immense and it promises to eliminate excessive cost across the entire supply chain. Furthermore, to create organizational structures that use and process information for achieving their marketing goals and providing best services to their customers, supply chain collaboration has plays a significant roles (Khare and Arpita, 2008).

Nowadays, almost all organizations are in the process of applying the supply chain activities. Firms started to understand that achieving efficiencies is not enough. Seeing, firms have to be competitive. Here of, collaboration is one of the most talked about topics in business today (Barratt, 2016). Collaboration is might be share large investments, sharing risks, and sharing resources, reasoning growth and return on investments. Many collaboration dynamics have been identified as being important in improving supply chain performance (Dunning & Guglar, 1993). As indicated by (Fawcett, 2008) reports, the collaboration's goal is to have firms work cooperatively to devise and applied better approaches to solving problems and providing the

value customers expect. Plus, the author argue, collaboration goes beyond managing transactions (sell and buy) for efficiency, to managing relationships for creativity or innovation and continuous improvement. These relationships are long-term endeavors where partners know the capabilities and needs of each other and actively seek to develop new or improved practices (Fawcett, 2008).

Moreover, when the firms culture build up on trust and knowledge related to operations, technology between firms, contributing to the decision synchronization in the term of information sharing occurs, firms can reduce bullwhip or information distortion related to operational cause by enhancing information and knowledge sharing, demand forecasting, replenishment policy, and reducing the risk between partners (Almeida et al., 2017)

However, In Ethiopian manufacturing firms, information sharing between the firm and its supply chain partners is very low in case collaborative planning, forecasting and replenishment practice (CPFR). So, to reduce cost and to enhance customer service, SCC is supported by information system with technology (Rani and Bogale, 2015). Even though, there is a collaboration practice between firms, it is not characterized by joint planning and decision making regarding strategic issues and risks, profits, and losses are not shared. Therefore, firms to improve performance through supply chain collaboration and to get superiority over in the competitive market, they should have real time information flow between firms and their suppliers, investment on information technology, clear understanding of supply chain collaboration, having skilled man power, establishing trust, corporate focus, commitment and top management support are highly required (Yirgalem Adis, 2019). Furthermore, firms to deliver products for final customer, there must have expertise and skill of individual firms in the area of supply chain collaboration (Whipple et al., 2010).

Thus, the researcher was motivated to do this study explores the effect of supply chain collaboration on organizational performance in case of MOHA soft drinks industry located in Nifas silk plant. The purpose of the study was to investigate regarding the effects that supply chain collaboration components on organizational performance by examining the effects and relationship between supply chain collaboration and performance.

1.2 Background of the organisation

MOHA soft drinks industry S.C was established on May 5, 1996 following the acquisition of four state owned Pepsi plants by Saudi Arabian-Ethiopian business magnate and the largest foreign investor in Ethiopia, Sheikh Mohammed Hussein Ali Al Amoudi and his wife in Nifas Silk, Tekelehaymanot, Gonder, and Dessie plants from the Ethiopian privatization agency with paid capital of birr 108,654,000. Nifas Silk Pepsi cola, plant in Ethiopia, is the first Pepsi cola plant in Ethiopia and was established in 1966 as Share Company with an initial capital of 1 million birr.

Mohammed Hussein Al-Amoudi (MOHA) soft drink industry was formed and registered under the commercial code of Ethiopian on 15th of May 1996. This company was formed after the acquisition of four plants located at Addis Ababa (Nifas silk and Tekelehaymanot). Later on, he purchased Gonder and Dessie plants on the 18th of January 1996. Currently, the factory has five branches plants, two of them are location in Addis Ababa (Nifas silk and Tekelehaymanot) the remaining three plants are located in Gonder, Dessie and Hawassa. The different branches across the country do have different capacities in terms of size and capabilities of production .The big ones are the one which is found in Nifas Silk (Addis Ababa) and Hawassa branches. The Medium size is Tekelehaymanot (Addis Ababa) branch. The smallest in size and capacity are Gonder and Dessie plants. The Company currently has seven operating units including Summit, Bure, Hawassa and the recently inaugurated Mekele Plants.

The major products of MOHA Soft Drinks Industry S.C. are: Pepsi Cola, Mirinda Orange, 7-Up, Mirinda Tonic, Mirinda Apple, Mirinda Pinaple (all Pepsi Brands), and Kool water (Kool carbonated and Kool none carbonated water). MOHA holds 52% of the market share in soft drinks industry in the country. The company is trying to improve its product quality, increase market share and customer satisfaction. Hence, the main purpose of the study was to examining the effect of supply chain collaboration on organisational performance of MOHA soft drinks industry specifically in Nifas silk plant.

1.3 Statement of problem

 In previous, supply chain management used for to deliver the right product to the right customer at the right time. However, In recent year, SCM is about providing products to the right customers with the right information by including data about where and when the products material come from (inbound logistics) and how materials are made and delivered (outbound logistics). It means, by sharing information firms enable to recognise customers and which products are environmentally friendly and to get score over competitors. Therefore, firms should be collaborated with all stakeholders (Vinod Wadhwani, 2016). Supply chain collaboration has becoming the most important factor to achieve supply chain performance between partners, to meet or fill customer demands, and to achieve higher customer satisfaction drives organisation from competition. Therefore, supply chain collaboration can help to improve organizations supply chain performance (Anderson & Narus, 1990).

In manufacturing firms, supply chain collaboration can provide benefits to all supply chain partners. for instance; reducing risks, declining costs, increasing organization productivity, improving performances and profitability (Cao & Zhang, 2011). Sharing   knowledge's in an organization which is a part of supply chain collaboration reduces lead time, reduces raw materials costs and improves and ensure qualities of products (Kotabe & Martin, 2014). Organizations information sharing (IS) and joint decision making (JDM) of supply chain collaborations have positive and significantly effect, on operational performance (Al-doori, 2019). In addition, supply chain collaboration have positive and significant effect on organizational performance (Simatupang & Sridharan, 2002).

Despite of supply chain collaboration benefits, if there is no collaboration, manufacturing firms with partners, companies does face in to different challenges. For instance; lack of secure source of supply, absence of understanding market change, high level of inventory and production cost, and continuous fluctuation of price of raw materials (Girma & Suominen, 2013) cited by (Yirgalem Adis, 2019), and (Cao & Zhang, 2011). In *Ethiopia* the concept of supply chain collaboration effects on the performance of organization is at the low stage. Most of the researches on the effect of supply chain collaboration performance were conducted on different manufacturing companies in the developed countries and in developing countries like Ethiopia is

very few. Specifically, in MOHA soft drinks industry there is no insight about the effect of supply chain collaboration on organisation performance.

According to (Gregory & Simiyu, 2015), research conducted on "the impact of supply chain collaboration practice on the performance of steel manufacturing company in *Kenya"*, and his study mainly concerned on how to develop quality of product and customer satisfaction through supply chain collaboration practice, and his result shows, Supply chain collaboration practice can positively affect the performance of the organization. However supply chain collaboration components had not well addressed in his study.

The study done by (Rani and Bogale, 2015) entitled on "An Investigation in to the Collaborative Supply Chain Practices: A study on *Ethiopia's* Steel Mil Manufacturing Companies" using the variables of cultural elements, collaboration elements, and strategic elements of collaboration and the output shows Supply chain collaborative practice can improve company's productivity and the finding shows, there is a direct relationship between internal operation and the performance extent of the organization. And also he suggested when supply chain collaboration is supported by information technology and information system, companies can reduction cost and improve customer service. However, the study done by Rani and Bogale focused on only downstream supply chain collaboration.

The study conducted by (Tigist B., 2017) on "the assessment of supply chain collaboration in Ethiopian tour operation" and the study was focused on investigating the existing level of supply chain collaboration in Ethiopian tour operation and effects on the performance and competitiveness of the industry using the variable of information sharing, decision synchronization and incentive alignment. And the output shows, there is positive and significant relationship between supply chain collaboration parameters and organization performance with competitiveness. Despite of this result the absence of real time information sharing leads to supply chain uncertainties. Even though there is a study conducted by Tigist B on supply chain collaboration in Ethiopian tour operation, she uses only three parameters. Like resource sharing and joint knowledge creation does not take in to account.

The study done by (Yirgalem Adis, 2019) a research entitled on "the effect of upstream supply chain collaboration on the performance of brewery industry in Ethiopia with specifically *BGI*

Ethiopia" mainly focused on supply chain collaboration components: information sharing, decision synchronization, resource sharing, Goal congruence, incentive alignment, and knowledge creation through the effect of organizational performance. His result shows information sharing, decision synchronization, incentive alignment and goal congruence have significantly positive effects of organization performances. However, resource sharing and joint knowledge creations are does not have significant positive effects on the organizational performance not supported. However, the study done by Yirgalem Adis focused on only upstream supply chain collaboration (Yirgalem Adis, 2019).

As well no known local research had been done on the effect of supply chain collaboration case on MOHA soft drinks industry performance. Hence, there was need for an empirical study to be carried out in MOHA soft drink industry. Thus, the researcher was wants to conduct research on the effect of SCC on the organizational performance by using the variable of (information sharing, decision synchronization, resource sharing, joint knowledge creation, and incentive alignment) in MOHA soft drinks industry located in Nifas silk plant. Finally, the researcher hopes this study improve the knowledge and understanding of SCC components and effects on organization performances by answering the following research questions.

1.4. Basic research questions

- What is the effect of information sharing on the performance MOHA soft drinks industry?
- How is the decision synchronization affect organisational performance of MOHA soft drinks industry?
- What is the effect of resource sharing on the performance MOHA soft drinks industry?
- How is the joint knowledge creation affect organisational performance of MOHA soft drink industry?
- What is the effect of incentive alignment on the performance MOHA soft drinks industry?

1.5 Objective of the study

1.5.1 General objective
The main objective of the study was to investigate the effect of supply chain collaboration on the performance of MOHA soft drinks industry located in Nifas silk plant.

1.5.2 Specific objectives

- To examine the effect of information sharing on the performance MOHA soft drinks industry.
- To identify the effect of decision synchronization on the performance MOHA soft drinks industry.
- To examine the effect of resource sharing on the performance MOHA soft drinks industry.
- To identify the effect of knowledge creation on the performance MOHA soft drinks industry.
- To determine the effect of incentive alignment on the performance MOHA soft drinks industry.

1.6 Research hypothesis

- ✓ **Ha1:** Information sharing has positive and significant effect on organizational performance.
- ✓ **Ha2:** Decision synchronization has positive and significant effect on organizational performance.
- ✓ **Ha3:** Resource sharing has positive and significant effect on organizational performance.
- ✓ **Ha4:** joint knowledge creation has positive and significant effect on organizational performance.
- ✓ **Ha5:** Incentive alignment has positive and significant effect on organizational performance.

1.7 Significance of the study

The result of this study helps MOHA soft drinks industry to understand the benefits and important roles that a set of supply chain collaboration plays in their organizational performance. This study help to investigate the roles that the supply chain collaboration plays for the case company look at the strength and weakness sides of collaboration based on the finding of the research. Therefore, the case company will be able to improve the performance of the organization and well-developed understanding of supply chain collaboration concept.

Finally, the study helps to the researcher to gain knowledge and experience on how to do the study in the future, In addition to this, the study used by other researcher as a reference who wants to conduct research on related area.

1.8 Scope of the study

This study was limited on the effect of supply chain collaboration on the organization performance in case of MOHA soft drinks industry located in Nifas silk plant. Even though Supply chain collaboration is occurring at different manufacturing industries, the researcher was forced to limit this research only on MOHA soft drinks industry, because it is hard to organize and to perform the study in all types of manufacturing industries. Because of the fact that it was requires huge amount of financial resources, a long time and maximum efforts, the study limited on MOHA soft drinks industry placed on Nifas silk plant.

Even though organization performance measured by different supply chain collaboration parameters, the researcher was try to analyze only the impact of information sharing, decision synchronization, resource sharing, joint knowledge creation and incentive alignment on organizational performance (market share, customer satisfaction, and product quality). The study was also employ quantitative data analysis and questionnaires as a data collection method and methodologically delimited.

However, the researcher believes that the study would cover all supply chain collaboration components effects on organization performance. But, the researcher limited on some supply chain collaboration components and organizational performance because of time constraints.

1.9 Operational definitions

The main task of the study was test the cause and effect relationship between supply chain collaboration dimensions or components and performance of MOHA soft drinks industry.

- o **Information sharing:** is assumed as a backbone of supply chain collaboration, it is capturing and exchanging relevant information between supply chain partners for decision making to plan and a set of strategies (Sun & Yen, 2005).
- o **Decision synchronization:** it means joint decision making in the term of supply chain planning and operational contexts for achieving the supply chain benefits, like plans,

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combines information, conflict resolution, setting rules and regulation and general procedures (Cao & Zhang, 2013).

- o **Resource sharing:** it is the process of leveraging capabilities and assets and investing in between supply chain members. In supply chain resource including factors of organizations productions, such like personnel, capital, equipment, technologies knowledge and information in supply chain processes (Cao & Zhang, 2011).
- o **Joint knowledge creation:** it means the extent of supply chain partners develop a better understanding of market and competitive environment by working together (Machotra et al., 2005).
- o **Incentive alignment**: it means incentive rewards in the supply chain for the purpose of motivate and encourage supply chain members who participate in the entire supply chain goals and objectives. In another way incentive alignments can be referred to as mutually benefited and mutually sharing risks and loses (Simatupang & Sridharan, 2002).
- o **Organization performance:** means analyzing the organization performances against the desired objectives and goals depend on real outputs compared with expected outputs (Basu et al., 2017)

1.10 Organization of the study

The study was organized into five chapters. The first chapter was the introductory part and included background of the study, statement of the problem, objective of the study, significance of the study, limitations and scope of the study. Chapter two, deals with review of related literature where theoretical and empirical evidences with literature gaps were explored from different sources. In chapter three presents research design and methodologies which focused on research, design, research approach, and target population, sampling techniques, sample size source of data, method of data collection and finally method of data analysis was discussed in detail. The forth chapter was discuss the analysis and presentation of the data collected. Finally, chapter five was contains, summary of findings, conclusions, recommendations, limitations and forwarded suggestions.

1. LITERATURE REVIEW

2.1 Introduction

The aim of this chapter is to review the available literature on the topic of supply chain collaboration starting from theories related to the SCC, concept and definitions of supply chain collaboration; supply chain collaboration components, organization performances and its indicators, empirical review literature and literature gaps, and conceptual framework were discussed.

2.2 Theoretical literature review

The increasing important of supply chain collaboration has led to the development of various theories to explain the underlying phenomena of the collaborative supply chain. The following theories are namely: resource based view, relational view, knowledge based view and social capital theories that explain how supply chain collaboration improve performance of the firm.

Resource based view (RBV); RBV is the most popular theory in supply chain management research (Cao & Zhang, 2011). RBV is used to explain the factors affecting resource utilization of firms to improve their performance and competitive advantage. In RBV, firms combine their resource in proper manner to establish a competitive advantage over their competitor. Here of, by sharing resources supply chain partners can improve sustained competitive advantage and performances (Barney M., 1991). The resources can be categorized into two; tangible or intangible. The tangible resources such as: financial, human, and intangible resources include information/ knowledge, skills, relations, and capabilities providing better opportunities for sustainable competitive advantage (Morgan and Hunt, 1999). Moreover, RBV argues that an investment on relational specific assets can build competitive advantage of the supply chain partners, because such resources are scarce and difficult to imitate (Barney M., 1991).

Relational view (RV); referred to as a competitive advantage as dependent on relationship based investment by partner firms. The relational investment develops unique capabilities for procedures of business processes by examining, investing in relation-specific assets, developing interorganizational knowledge sharing routines, using effective governance mechanisms, and exploiting complementary capabilities. The relationship helps to develop a culture for

collaboration under which planning and sharing activities can function effectively, and it provides theoretical support for collaboration as a way to develop deep relationships and a culture of individual as well as firm level interactions (Dyer and Singh, 1998).

Knowledge based view (KBV); According to (Ketchen & Hult, 2007) in supply chain collaboration, Knowledge as a specific and special resource and used for facilitating collaboration, forming the basis for competitive advantage and enhancing trust among Supply chain partners. As stated by (Choo et al., 2007) KBV is divided into two type; explicit and tacit knowledge. Explicit knowledge can be defined as codified and articulated, while tacit knowledge can be expressed as unveiled through application and experience and is difficult to imitate. In collaboration, both types of knowledge can be used in the planning and execution phase through the process of accumulating and leveraging the knowledge. When knowledge and experience are exchanged and are freely explored particularly in joint planning, it builds a strong relationship and develops the culture of supply chain collaboration.

Social capital theory (SCT); referred to as Shared goals, values and experiences among supply chain partners. The main aspects and human side of social capital theories issue to be managed across the entire supply chain (Ketchen & Hult, 2007). According to (Inkpen et al., 2005) There are two types of social capital theories, shared culture and shared goals. Shared culture refers to the degree to which norms of behaviors govern the relationships of partners. Partners often list the shared rules in formal contract within the network. These rules and norms provide a peaceful atmosphere and reduce the possibility of opportunistic behaviors, leading to lower monitoring costs and higher commitment. Supply chain members will work under a distinct corporate culture to comply with their common goals (Sytch, 2014). A shared goal refers to the degree to which network members share a common understanding and approach to achieve their task and goals. Supply chain partners usually work toward a common goal set by the focal firm, even though they have different goals in mind (Krause et al., 2007).

2.3 Concept and definition of supply chain collaboration

Supply chain collaboration means two or more autonomous firms that form long-term relationships and working closely to plan and execute supply chain operations for common goals, thereby achieving more benefits than acting on itself, and it has many benefits for the supply

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chain partners in the entire supply chain network (Ralston & Ralston, 2014). On the other hand, SCC is a means of a long term relationship between supply chains participants generally cooperate such as: to share information, and to work together for the purpose of plan and modify their business activities to achieve collaboration performance (Whipple et al., 2010).

Independent Firms enter into collaborative arrangements in order to share risks and rewards between partners. The objective of collaboration is to achieve higher performance than would be achieved by operating as individual firm (Lambert et al., 1999). Furthermore, those firms are looking outside their organizational boundaries for opportunities to collaborate with supply chain partners to ensure efficiency and responsiveness of supply chain, and also to leverage the resources and knowledge of their suppliers and customers (Cao & Zhang, 2011). According to (Crook et al., 2008) defined that when independent firms collaborate and share knowledge with others firms, they can achieve the advantages beyond what could be achieved in arm's length exchange.

Supply chain collaboration is participating in a long-term relationship where participants cooperate, share information, and work together to plan and operation, even though, modify their business practices to improve collaborative performance (Whipple et al., 2010). (Tsou, 2013) argues, Supply chain collaboration involves coordinating activities between buyer and supplier, so that both parties can achieved the supply chain performance such as; by reducing cost, increasing service level, better utilizing resources, and effectively responding to changes in the market environment. Moreover, collaboration is a mutually shared process where two or more firms displaying mutual understanding and a shared vision, and the firms in question voluntarily agree to integrate human, financial, or technical resources with the aim of achieving collective goals (Richey et al., 2012), in all, collaboration has been defined as two or more companies sharing the responsibility of exchanging common planning, management, execution, and performance measurement information exchange or sharing (Cao & Zhang, 2011).

To generalize, Supply chain collaboration is often defined as two or more firms are working together to create a competitive advantage through sharing information, decision synchronization, and sharing benefits which result from greater profitability of satisfying final customer expectation than acting to be alone (Simatupang & Sridharan, 2002).

2.4 Supply chain collaboration components

Different studies use different parameters to measure organization performance through supply chain collaboration. (Sridharan & Simatupang, 2009), measured the organization performance through supply chain collaboration practice, they suggested three important factors: information sharing, decision synchronization, and incentive alignment. (Mclaren et al., 2002) supported information sharing, decision synchronization, and incentive alignment are basic elements to create supply chain collaboration with supplier and to ensure supply chain capability.

Information sharing, knowledge sharing, trust, dependence, risk and reward sharing between firms are the key determinant of supply chain or mutual collaboration (Abdul Ali, 2016). On the other hand, Firms to reduce operational costs and risks, they should be adopting supply chain collaboration components or models. The authors, stated seven components: information sharing, decision sharing, goal congruence, incentive alignment, resource sharing, joint knowledge creation collaboration, and collaborative communication (Cao et al., 2010). According to (Badea et al., 2014) also; to achieve strategies of organization, formulate a model for collaborative supply chain comprising, there are five major characteristics: information sharing collaboration, decision synchronization collaboration, incentive alignment collaboration, resource and skill sharing collaboration, and knowledge management collaboration.

As indicated by; (Simatupang and Sridharan, 2008) there are five alternatives that have major important for a good supply chain collaboration: information sharing, decision synchronization, collaborative performance system, incentive alignment, and innovative supply chain process. The authors suggest the five elements as enabling factors and conclude that the structure of ongoing collaboration can be characterized by the five factors of collaborative practice. Therefore, organizations to improve operational performance, understand the role of different key parameters is required (Sridharan & Simatupang, 2009).

2.4.1 Information sharing

According to department of defense, United States of America (2007) information sharing means, "making information available to participants". Participants such as: system, processes, and people. The main goal of information sharing is to deliver relevant information to others. Such as: that the information has an impact on personal image of the world, information has an

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impact on changes personal attitude of the world, and created or shared information about the world, and understanding of the world cited by (Deghedi, 2014). It is also important for a supply chain management, when the availability adequate information and quality of information (Deghedi, 2014).

According to (Sun & Yen, 2005) defined as information sharing means providing relevant information for systems, people, or organization. To improve the result of information sharing, four key questions should be answered; we ask what information to share, whom to share information, how to share information and when to share information. The result of these questions, helps to enabling to avoid duplication or redundancy works, minimizing cost of sharing information, and enhance to give response (Sun & Yen, 2005). The term information sharing is called knowledge sharing or sometimes it known as information integration. The effect of information sharing on supply chain collaboration has become more advantageous with todays sophisticated information technology. Information sharing is including about the information of logistics activities, business, strategic, tactical, operational and so forth that used for improve organizational performance (Tsung, 2021).

In manufacturing sector; information sharing plays a significant role. Such as; inventory reduction, cost reduction, efficient inventory management, minimizing uncertainties, reducing bullwhip effects, increase resource utilization, increase productivity, improve organization efficiency, improved service level, building good image, problem detection that existed in the organization, shorten lead time or reduced cycle time from order received to delivery products or services, better tracing and tracking, entry to new market, to expand network of market and optimized capacity and space utilization. In this regard, information sharing in organization has become more efficient by the world introduction of cooperation and coordination and leads to enabling companies to ensure competitiveness over the world market (Lotfi et al., 2013). Moreover, information sharing is a major component or it directly leads towards achieving supply chain collaboration and mentioned benefits integrated with supply chain (Hult et al., 2014).

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2.4.2. Decision synchronization

Decision synchronization means the process of making decision in supply chain planning and operations context. Decision synchronization provides a mechanism to discuss option, to allocate decision rights, to conduct problem solving method, and to resolve conflict   (Simatupang & Sridharan, 2005)**.** Supply chain members collaborating in supply chain planning and operations for achieving the organization objectives and optimizing benefits. In a joint decision making all decisions are coordinated. Supply chain decisions such as; information sharing and plans, conflict resolution methods, and making procedures and rules (Cao and Zhang, 2013).

On the other hand, decision synchronization is defined as two basic concepts, decision making in supply chain planning and operational cases. The two basic concepts applied in between supply chain partners to optimize supply chain benefits and to achieve supply chain objectives by joint decided through the function of inventory management, forecasting demands, product assortment and other related to supply chain operations, as well as in supply chain planning concept to make a trade-off between supply and demand, collaborative planning and joint decision making is required (Soosay & Ferrer, 2009)

2.4.3. Resource sharing

In manufacturing area, supply chain collaboration practice is the most popular issue. In this regard, the word "sharing" is an important factor to enhance supply chain collaboration. In the past decade changed our world condition from personal living style to industrial supply chain. It can provide a significant amount of benefits to peoples and companies. In addition, the concept of sharing has gradually stated in supply chains in the past decade and has been applied in much type of industries. The goal of a sharing economy is resource sharing (RS). In supply chain research, RS is defined as "the process of leveraging capabilities and assets and investing in capabilities and assets with supply chain partners"(Cao et al., 2010). On the other hand, resource sharing referred to as the process of leveraging capabilities and assets and investing in capabilities and assets with supply chain partners. Resources are categorized in to two types: physical resource and supply chain resources. In physical resources includes, such as manufacturing equipment, facility, and technology are included, on the other hand, Supply chain resources usually contains to the organization's production factors, such as personnel, equipment, capital, technologies, knowledge, and information in supply chain services and

working processes (Cao & Zhang, 2011). Resource sharing collaboration methods is necessary, to ensure sustainable performances of industrial organization (Ma et al., 2018)

According to (Liu & Lu, 2015) finding shows, that resource sharing serves as a means to minimize lead time with inventory cost, reduce the service time for an emergency or quick response for uncertainties, reduce the loss rate for high customer satisfaction or in other word increase customer services and higher satisfactions and increase the resources utilization at the possible lowest costs compared with companies using resources to be alone.

2.4.4. Joint knowledge creation

In manufacturing firms, knowledge sharing is the process of capturing, organizing, reusing and transferring experience-based knowledge related to business that applied within firms and making that knowledge available to other supply chain in the business. However, to increase the value of knowledge in business, sharing knowledge to all supply chain partner's simultaneously in proper manner is required (Bhirud et al., 2005). To develop supply chain collaboration competence, it is important to consider knowledge management. Because, knowledge management collaboration is an important factors for improve a higher performance and to get a greater competitive advantages and to provide mutual significant feedback (Mathuramaytha, 2011).

In general, both knowledge sharing and collaboration practices in the supply chain significantly influence customer satisfaction and leading to business competitiveness as evidenced in the superior product quality and new product innovation in this knowledge-intensive industry. In addition, reveals a statistically significant correlation between SCC and knowledge sharing practices (Haque and Islam, 2018).

2.4.5. Incentive alignment

Incentive alignment refers to the process of sharing costs, risks, and benefits among the participating members (Simatupang & Sridharan, 2002). Incentives alignment have to be given to the chain member with superior information to ensure economic benefits from information sharing, joint decision making, and other alternatives of supply chain collaboration, given the positive impact of shared information on performance of supply chain collaboration (Deghedi, 2014). On the other hand, to understand of the risks and benefits of supply chain collaboration

and the formulation of incentives and its sharing, incentive alignment is the most important (Cao and Zhang, 2011).

In general, the chain members accept the importance of the potential rewards that can be obtained from collaboration although costs need to be shared. The interaction of incentive alignment with other features is very significant as it motivates the chain members to align their actions to the mutual purpose of collaboration that would also enhance their individual profitability. Moreover, the strong linkage between performance and incentives, the more effectively the given rewards is able to motivate the desired behavior. It means, Incentive alignment provides rewards to motivate the supply chain members to make effective decisions that reinforce the desired level of organizational performance (Simatupang & Sridharan, 2002). Furthermore, To gain and ensure mutual benefit investments, be risk taker in supply chain partner is required (Lee & Whang, 2001).

2.5 Organization performance and its indicators

Performance measure is defined as; an indicator that establishes how well an organization accomplishes the desired goals and objectives in different metrics namely: market orientation, customer satisfaction, financial performance and so forth. Previous performance has been measured in numerous methods like firm performance, operational performance, and financial performance. However, today a competition established between supply chains, not more among organization. Therefore, it is essential to include all members and performance should be measured on supply chain extent. An organization going on with better supply chain and can keep the business smooth, efficient and effectives are considered to compete globally (Basu et al., 2017) cited by (Al-doori, 2019). To achieve efficiency and effectiveness supply chain managers must build a complietive supply chain approaches, there are various approaches to that positively affect the performance, the most effective is considered supply chain collaboration (Seo et al., 2015).

As indicated by; (Cao & Zhang, 2011) firm performance refers to how well a firm achieved its financial goals compared with the other firm's primary competitors based on four metrics: sales growth, profit margin on sales, return on investment (ROI), and growth in return on investment for measuring the performance of the organization.

The organizational performance is measured by financial and non-financial indicators. However the study was addressed by non-financial performance indicators. Within the family of non-financial performance measures (NFPMs), those related to customers have a higher adoption rate compared to the other non-financial measures. According to (Drury and Tayles, 1993) results, supported the importance of non-financial measures, especially measures of customer satisfaction, product quality, delivery, and supplier reliability. A study conducted by (Abdel-maksoud, 2005) reveals that non-financial measures of 'on time delivery' and 'efficiency and utilization' are considered as highly important. According to (Khan & Halabi, 2011) non-financial performance measures focus on achieving long-term success and incorporates factors that lead to improved organizational and financial performance. These non-financial measures include customer satisfaction, marker share, cycle time, sales, internal efficiency, innovation, employee satisfaction, and organizational commitment. Thus, therefore from this, Market share, Customer satisfaction, and product quality were used as a measure of organizational performance in this study.

2.5.1 Market share

Market share is sales relative to those of other competitors in the same market. Market share is usually used to express competitive position. It is also generally accepted that increased market share can be equated with success of the firms whereas, decrease market share is a manifestation of unfavorable actions by firms and usually equated with failure (pearce and Robinson, 2003). Market share refers to a company's portion of sales within the entire market in which it operates. This measurement indicates a company's size within its market. In the similar definition market share is the percent of total sales in an industry generated by a particular company. It used for companies to give a general idea of the size of a company in relation to its competitors. The market leader in an industry is the company with the largest market share (Yannopoulos, 2008).

2.5.2 Customer satisfaction

Customer satisfaction is practical in nature, if the desired objective of profitability is to be achieved. However aside from the achievement of intended profit, customer satisfaction also gives room for customer loyalty, retaining existing customer, expansion, and increase in sales, growth and large customer base. The significance of customer satisfaction paves way for

organisation to constantly watch, monitor and control, and improve the 4ps of marketing strategies namely: product, price, place and promotion. This made it necessary for organisation to achieve the stated objectives and to incorporate profitability. Customer satisfaction as a whole has jointly contributed immensely to the organisation profitability (Odunlami et al., 2013)

In today's business competitive scenario companies must strive to have an advantage over their competitors, such as customer satisfaction, as opportunity, and orientation of the organisation on the verge of gaining. Customer satisfaction is the best way of gaining a sustainable competitive advantage and to discuss the aspects of competitive advantage attained in this way. How customer satisfaction is attained, how to control customer expectations and how to effectively manage customer feedback are essential for the customer satisfaction approach to work properly the company on the verge of gaining (Mazreku, 2015)

2.5.3   Product quality

A more comprehensive definition of quality as adopted by international standards organization is "the totality of features and characteristics of products and services that bear on its ability to satisfy stated or implied needs revolving around customer" (ISO, 9000).

Product quality is a vital to decide the market share of the firm and it also used as one of the product differentiation strategy in few leading firms. Marketing has to set the quality standards for the firm's products. In product management constantly verifying these standards and upgrading them is crucial task. Product quality, customer satisfaction, and company profitability are intimately jointed. Higher level of customer satisfaction is the result of the higher levels of quality. Quality creates the value and customer satisfaction. Marketers play several roles in helping their organisation to define and deliver high quality products to target customers. Continuous managing for excellent quality, the firm can maintain bright product / brand image in the customer's mind in this competitive world (Singh, 2013).

2.6 Empirical literature review

A number of studies have been done to understand the relationship between supply chain collaboration and organizational performance.

From Global Perspectives: In U.S. manufacturing firms and industries, Supply chain collaboration improves collaborative advantage and indeed has a bottom-line impact on firm's performance and collaborative advantage to intermediate variable that enables supply chain partners to achieve synergies and to create superior performance. In addition to this supply chain collaboration can provide benefits to all supply chain partners, for instance; reducing risks, declining costs, increasing organization productivity, improving performance and profitability, jointly creating the common pace of information sharing, avoid costly bullwhip effect, enhance business synergy and quality, provide offering flexibility and increase joint innovation (Cao & Zhang, 2011).

According to (Sridharan & Simatupang, 2009) confirms supply chain collaboration practice in New Zealand industry provide benefits to supply chain partners in terms of improved operational performance (to take into account a global perspective in marketing optimal decision, collaborative forecasting, ordering and delivery, sharing costs, benefits and risks) of firms. Supply chain collaboration is used for cost reduction and operational flexibility on firms and that the effect is long term effect (Mathuramaytha, 2011). Sharing knowledge's in an organization which is part of supply chain collaboration reduces lead time, reduces raw materials costs and improves and ensures qualities of products (Kotabe & Martin, 2014). Supply chain collaboration can help to improve organizations supply chain performance related to achieve supply chain performance between partners, to meet or fill customer demands, and to achieve higher customer satisfaction drives organisation from competition (Doganay & Ergun, 2017).

According to (Nyaga et al. 2010) by using supply chain collaboration to enables improved customer service, increase visibility, higher flexibility, reduce lead time, improve customer satisfaction and enable to quick response during uncertainty. According to (Al-doori, 2019) conducted research the impact of supply chain collaboration on performance in Automotive industry in Pakistan. The result of the study shows Supply chain collaborations can improve operational performance.

According to (Muhammad et al., 2019) conducted research on the influence of supply chain collaboration on supply chain performance for Malaysian manufacturing industry. The study focused on the Malaysian manufacturing sector of supply chain collaboration and supply chain performance relationship. The finding of the study revealed that all supply chain collaboration

approaches have positive impact on supply chain performance. Information sharing, agreeing vision and mission, supplier relationship, customer relationship and information quality are significantly affecting. While incentive alignment and postponement have positive effects but this effect is not significant effect on supply chain performance.

According to (Gregory & Simiyu, 2015) Conducted a research on "the impact of supply chain collaboration practice on the performance of steel manufacturing company in *Kenya"*, and his study mainly concerned on how to develop quality of product and customer satisfaction, his result shows, Supply chain collaboration practice can positively affect the performance of the organization. Supply chain collaborative practice can improve company's productivity. However supply chain collaboration components had not well addressed in his study. In addition there is very little empirical evidence as how different supply chain collaboration component influences company's performance (Gregory & Simiyu, 2015).

From Ethiopian perspectives: the study done by (Rani and Bogale 2015) entitled on "An Investigation in to the Collaborative Supply Chain Practices: A study on *Ethiopia's* Steel Mil Manufacturing Companies" using the variables of cultural elements, collaboration elements, and strategic elements of collaboration and the result shows Supply chain collaborative practice can improve company's productivity and there is a direct relationship between internal operation and the performance level of the organization. And also he suggested when supply chain collaboration is supported by information technology and information system companies will reduction cost and improve customer service. However the study done by Rani and Bogale focused on only downstream supply chain collaboration.

The study conducted by (Tigist B, 2017) on "the assessment of supply chain collaboration in Ethiopian tour operation" and the study was majorly focused on investigating the existing level of supply chain collaboration in Ethiopian tour operation and effects on the performance and competitiveness of the industry using the variable of information sharing, decision synchronization and incentive alignment. And conclude results there is positive and significant relationship between supply chain collaboration parameters and organization performance with competitiveness. Despite of this result the absence of real time information sharing leads to supply chain uncertainties. Even though there is a study conducted by Tigist B on supply chain

collaboration in Ethiopian tour operation, she uses only three parameters. Like resource sharing and knowledge creation does not take in to account.

The study done by (Yirgalem Adis, 2019) a research entitled on "the effect of upstream supply chain collaboration on the performance of brewery industry in Ethiopia with specifically *BGI Ethiopia*" using the variable of information sharing, decision synchronization, resource sharing, Goal congruence, incentive alignment, and knowledge creation through the effect of organizational performance. His result shows information sharing, decision synchronization, incentive alignment and goal congruence of supply chain collaborations have significantly positive effects of organization performances. However resource sharing and knowledge creations are does not have significant positive effects on the performance of supply chain collaboration at BGI Ethiopia. However the study done by Yirgalem Adis focused on only upstream supply chain collaboration and the stream of collaboration is limited on key domestic supplier (Yirgalem Adis, 2019).

In general, previous studies indicate that a significant correlation exists between supply chain collaboration components and organization performance. information sharing and incentive alignment have positive and significant effect on organization performance (Cao & Zhang, 2011 and Simatupang & Sridharan, 2002), decision synchronization provides a mechanism to discuss option, to allocate decision rights, to conduct problem solving method, and to resolve conflicts (Cao and Zhang, 2013 and Simatupang & Sridharan, 2005) , resource sharing has positive and significant effects on sustainable organizational performance (Cao & Zhang, 2011 and Liu & Lu, 2015), and joint knowledge creation is an important factors for improve a higher performance and to get a greater competitive advantages (Bhirud et al., 2005 and Mathuramaytha, 2011) result shows have positive and significant impact on organizational performance. Therefore, on the base of this literature reviewed above, the researcher develops the hypothesis.

2.6.1 Literature gap

Even though most of the previous studies addressed the relationship between supply chain collaboration and organizational performance and effects of supply chain collaboration on the performance of the organization, which research findings often differ systematically across different groups of firms and finding in one business environments may not be applicable in another environment. As well known, there were no researches are conducted related with the effect of supply chain collaboration on MOHA soft drink industry performance. Even though there were three studies conducted about the supply chain collaboration concept in Ethiopia, one of them was supply chain collaboration practice and focused on downstream collaboration. The other one was focused on assessment supply chain collaboration in tourism industry, even it, in this study uses only three supply chain collaboration parameter's, and the only one study was undertaken the effect of supply chain collaboration in the BGI Ethiopia, but this study limited on upstream supply chain collaboration. As a result there is knowledge gap that needs to be addressed with related to the proposed topic of the study. So, this study intends to fill the above stated gap.

2.7 Conceptual framework

Conceptual Framework is a basic format that consists of certain type of variables which represent the observational, the experiential and the analytical aspects of a process. An independent variable is that variable which is measured to affect or determine a dependent variable. Dependent variable it can be changed based on independent variable conditions by requiring explanation analytical methods (Bogdan and Biklen, 2003).

The following conceptual framework for the research is designed in order to examine the effects of supply chain collaboration on the performance MOHA soft drinks industry based on research hypotheses. It developed by considering the relationship between supply chain collaboration components (independent variable), which has five components in the research as information sharing, incentive alignment, decision synchronization, resource sharing, joint Knowledge creation and organizational performance (dependent variable) which can be measured by market shares, customer satisfaction, and product quality. The conceptual framework is adopted from the work of (Cao & Zhang, 2011) with modification.

Independent variables   **Dependent variable**
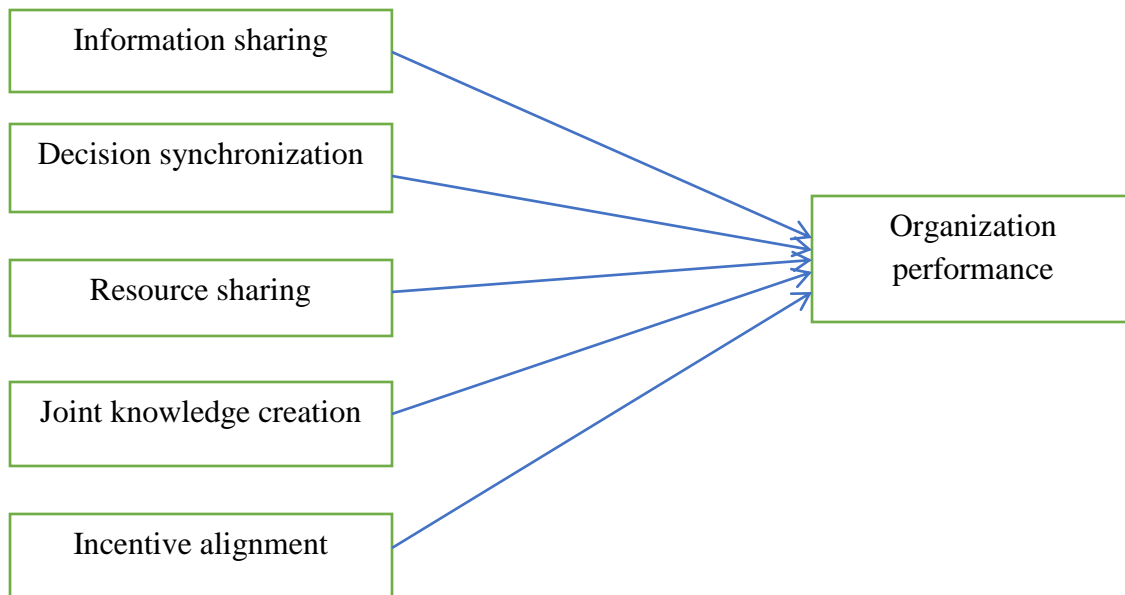
Figure 1 conceptual framework

Source: adopted from (Cao & Zhang, 2011) with some modification

3 RESEARCH METHODOLOGY

3.1 Introduction

In this chapter describes the research design, research approach, target population, sampling techniques and sample size, types and source of data, method of data collection, validity and reliability of instruments, method of data analysis and finally, ethical considerations of this study was discussed.

3.2. Research approach

In social sciences: there are two types of research approaches to conduct the research doing and generate knowledge. They are quantitative and qualitative research approach. Quantitative research approach is based on the measurement of number or amount. It is applicable to events that can be expressed in term of quantity. On the other hand qualitative research approach is focused on qualitative phenomena that relating to quality or kind. The aim of qualitative research is discovering the underlying motives and desires using in depth interviews for the purpose. The goal of quantitative research approach is testing hypotheses and measured in a numerical term (Kothari, 2004). Therefore to achieve the research objective the researcher was used quantitative research approach to test hypotheses.

3.3. Research design

Research design is the conceptual framework or plan for the conducted research. It just likes a blueprint for collection of data, measurement and analysis of data. It is commonly called "map or architect for house". Research design or a plan is guide of data collection and analysis for the study. The research design articulates what data is required, what methods are going to be used to collect and analyze this data, and how all of this is going to answer your research question (Kothari, 2004). However, there is no common research design for conducting research. Mostly different authors discuss the most useful classification is based on the research objective categorized in to three types: descriptive, exploratory and explanatory research design. Therefore to achieve the general objective of the study, the researcher was used descriptive and explanatory types of research design.

The descriptive study was allows the researcher to describe data and helps to know the event that was taken place (Kothari, 2004), whereas Explanatory research design is referred as a correlation design that reflect the extent of two or more variables relation and that where changes in one variable to another variables (Creswell, 2014).

3.4. Population of sampling

Population sampling is the process of taking a subset of subjects that is representative of the entire population (Creswell, 2014). However, the sample must have sufficient size to warrant statistical analysis. Sampling is done usually, because it is impossible to test every single individual in the population. It is also done to save time, money and effort while conducting the objective of the research.

3.4.1 Target population

Target population is referred to as the total number of subjects targeted by the study or the group of elements to which the researcher wants to make inference or to make conclusion (Creswell 2014). The target populations are permanent employees of MOHA soft drink industry at Nifas Silk plant.

3.4.2 Sampling technique and Sample size

According to (Kothari, 2004), when the field of inquiry is large or vast, considerations of time and cost lead to a selection of respondents that means; selection of a few respondents. The selected respondents should be as representative of the total population as possible in order to increase the appropriateness of the study output. The selected respondents create what is technically called a sample, the selection process is called sampling technique and the number of samples to be selected from the total population to constitute a sample is called a sample size.

Therefore, the researcher was used Stratified random sampling technique to classifying the population in to different strata. If a population from which a sample is to be drawn does not constitute a homogeneous group. Stratified sampling technique is generally applied to obtain a representative sample. Under stratified sampling the population is divided into several sub-populations that are individually more homogeneous than the total population (the different sub-populations are called 'strata') and then items selected from each stratum to constitute a sample.

Then, permanent employees of MOHA soft drinks industry were classified in to five main strata namely: production (manufacturing), sales and marketing, finance, purchasing (procurement), and general manager officers via stratified random sampling technique.

Table 1 Number of employees under each department

Departments (strata's)	Number of population
General manager office	7
Finance department	36
Purchasing and procurement department	27
Sales and marketing department	201
Production department	206
Total	**477**

Source: MOHA soft drinks industry HRM

Because of time and cost constraints, it was impossible to consider all permanent employees of a case company. The total number of the target population was 477 (N=477) permanent employees, working in purchasing, production, finance, sales and marketing, and general manager officers in MOHA soft drinks industry located Nifas silk plant. The sample size for the study was determined by using (Taro Yamane, 1973) formula based on 95% confidence level and at 5% precision level as follows.

$$ n = \frac{N}{1+N(e)2} \ , \qquad n = \frac{477}{1+477(0.05)2} \qquad n = \underline{\mathbf{218}} $$

Where: n= sample size, N= Number of target population, e= error term

After stratifying, the researcher was used Proportional Stratified Random Sampling. The sample from each departments or stratum namely; purchasing, production, finance, sales and marketing, and general manager officers were determining through proportional stratified sampling technique in order to get representative sample size from each departments. So that, each stratum sample size will be calculated as: = *(Sample Size/Population) × Stratum Size*

Table 2 Target population and sample size allocation from each stratum for the study

Sample size determination for the study **strata (departments)**	**Total population of each stratum**	**Sample size of each stratum**
General manager officer	7	3
Sales and marketing department	201	92
Finance department	36	17
Production department	206	94
Purchasing and procurement department	27	12
Total	**477**	**218**

Finally, sample units from each department were selected via simple random sampling technique. After the sample size determined, the questionnaires was distributed randomly to the respondents. Therefore, probability sampling techniques was employed in this study.

3.5. Source of data

There are two types of source of data, primary and secondary source of data. However, the researcher used primary source of data to obtain relevant data for the entire analysis of this study. Therefore, primary source of data was collected through questionnaire from selected sample of respondents of the organization.

3.6. Data collection tools/instrument

A Quantitative research approach was used to make statistical generalizations about the effect of supply chain collaboration on the performance of MOHA soft drinks industry. According to (Kothari, 2004), Data collection tools or instruments are used to enables the person who is carrying out the investigation to make a statement concerning the sample population by gathering data's from the sources that were selected respondents.

In this study, the researcher was used structured questionnaires to collect quantitative data from respondents. Here, the questionnaires were adopted from (Cao & Zhang, 2011), and (Simatupang & Sridharan, 2005). Structured questionnaires was used to collect the data from the selected permanent employees of MOHA soft drinks industry who working under the departments of

General manager Officers, purchasing, production, finance and sales and marketing departments to obtain appropriate information.

Moreover, the questionnaires were sending to the concerned person to answer the questions and return it. The questionnaires were chose to collect data, because, it was enable the researcher to reach a number of respondents within a limited period of time and it is convenient to ensure the privacy of respondents and also close-ended questionnaires enable to cover more ground within a limited time frame, particularly for respondents who have severe time constraints.

3.7. Data collection procedure

First, questionnaire was prepared based on basic research question, then questionnaire were distributed to selected employees of MOHA soft drinks industry. These were used to check the supply chain collaboration and effects on organizational performance. The researcher targeted all professionals that are directly involved in the targeted departments which are stated in the population. The questionnaires were administered to the participants directly by hand in hard copies and it was returned to the researcher based on the negotiated time.

3.8. Methods of Data analysis

Data analysis was made using descriptive and inferential statistics. Inferentially correlations and multiple regression models were employed in this study. After the data was collected through questionnaire, its completeness was verified, coded and entered the computer using SPSS. The data was subject to analysis using application software packages named as Statistical Package for Social Sciences (SPSS) version 23.

Likert scale data are analyzed at the interval measurement scale. Likert scale items are created by calculating a composite score (sum or mean) from five or more type Likert-type items; therefore, the composite score for Likert scales should be analyzed at the interval measurement scale (Scales & Sullivan, 2013). Descriptive statistics recommended for interval scale items include the mean for central tendency and standard deviations for variability.

3.8.1. Descriptive Statistical Analysis

Descriptive statistics was used to describe different characteristics. Frequencies and percentages were used to analyze general information about respondents, mean and standard deviation was

used to describe aspects of supply chain collaboration. The mean is preferred as it considers the precise score of each case thus it incorporates more information than the median which only states a scores relative position. The standard deviation on the other hand, was used to measure variation. Generally, in order to display the collected data in a brief and meaningful way data presentation and interpretation was made by using percentage, mean and standard deviation in table form.

3.8.2. Inferential Statistical Analysis

In Inferential statistical analysis, correlation and multiple linear regression analysis was used to determine the relationship between the independent variables (supply chain collaboration components) and dependent variable (organizational performance); and to test the effect of supply chain collaboration on organizational performance.

3.8.2.1 Multiple regression

The multiple regression analysis was used to determine whether the set of supply chain collaboration components have an influence on organizational performance of MOHA soft drinks industry. This study takes the five determinant factors as independent variables and the organizational performance as dependent variable in the regression model. The researcher was used the following multiple regression model to establish the statistical significance of the independent variables on the dependent variable.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \epsilon$$

Where; Y = Organizational performance

X_1 = information sharing

X_2 = decision synchronization

X_3 = resource sharing

X_4 = joint knowledge creation

X_5 = incentive alignment

ϵ = Error term which captures the unexplained variation in the model.

In the model, β_0 = Constant, β_1 to β_5 = Regression coefficients represent a one unit of change in the independent variable leads the mean change in the dependent variable while holding other independent variables in the model constant.

3.9. Validity and reliability of the study

3.9.1. Validity

According to (Mohamed et al., 2016) validity is the extent to which the item in an instrument covers the entire range of the significant aspects of the area being investigated. It is the degree to which the measurement device, in this case, the measuring questions in the questionnaire, provides sufficient coverage of the research investigative questions. Validity gives details of how well the collected data covers the actual area of investigation. It basically means measure what is intended to be measured. Hence, to maintain the validity of the instruments in this study, the questionnaires were adopted from previous researches conducted by (Cao & Zhang, 2011), and (Simatupang & Sridharan, 2005) with some modification.

3.9.2. Reliability

Reliability is the degree to which measurements are repeatable when different authors perform the measurements on different occasions under different conditions with supposedly alternative instruments which measure the same thing. Reliability is consistency of measurement or stability of measurement over a variety of conditions in which basically the same results should be obtained (Drost, 2011).

According to (George and Mallery, 2003) as cited by (Yirgalem Adis, 2019) a reliability test of greater than 0.9 are excellent, greater than 0.8 are good, greater than 0.7 are considered as acceptable, greater than 0.6 –are regarded as questionable, greater than 0.5 is Poor, and a test result of below 0.5 is unacceptable.

Table 3 Reliability test table

Supply chain collaboration components	No. of items	Crobanch's alpha	Internal consistency
Information sharing	6	.812	Acceptable
Decision synchronization	5	.773	Acceptable
Resource sharing	5	.728	Acceptable
Joint knowledge creation	5	.782	Acceptable
Incentive alignment	5	.846	Acceptable
Organization performance	9	.721	Acceptable

Source: researcher survey, 2021

3.10. Ethical consideration

Ethics are the norms or values for behavior that distinguish between right and wrong. It helps to examine the difference between acceptable and unacceptable/intolerable behaviors of persons. Ethics is particularly significant components throughout when doing research and if failed to be taken into account, it can lead to misinterpretation or even invalid conclusions. Hence, in this paper did not go under any form of bias or change, and the researcher respected the code address issues such as honesty, objectivity, respect for intellectual property, social responsibility, confidentiality, and nondiscrimination. Moreover, Respondent was informed about the objective and purpose of the study and their consent was obtained for better participation in this study, and Participants was informed of their right not to participate in the study at any time as well as Participants was also informed the benefit of the research and that the research has no risk at all, and their identity would be kept confidential.

4. DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1. Introduction

This chapter deals with the analysis, presentation, and interpretation of data gathered through questionnaires based on the objectives of the study. As discussed in the previous chapters the study attempted to examine the cause and effects relationship between supply chain collaboration components and organization performance of MOHA soft drinks industry. This chapter includes the analysis part of the research such as the response rate, demographic background of the respondents, level supply chain collaboration components and performance of the case company presented by descriptive statistics, the degree of relation between supply chain collaboration components and performance of MOHA soft drinks industry by correlation analysis and finally, the result of multiple regressions to show the cause and effects relationship between supply chain collaboration components namely: information sharing, decision synchronization, joint knowledge creation, resource sharing, and incentive alignment and performance of MOHA soft drinks industry.

4.2. Response rate

A total of 218 questionnaires were distributed for each 218 selected respondents; purchasing, finance, sales and marketing, production and general manager officer workers of MOHA soft drinks industry, only 202 were correctly filled and returned to the researcher. The remaining 16 questionnaires; 9 were not returned completely and 7 were not correctly filled. Therefore, the overall response rate was 93%.

Table 4 Response rate

Response rate	Filled and returned	Not returned	Not correctly filled	Total
Frequency	202	9	7	218
Percentage	93%	4%	3%	100%

4.3. Demographic information of respondents

In this section gender, age, qualification, position and work experience of respondents. To get information on these issues the respondents were asked and their responses were presented and analyzed as follows.

Table 5 Demographic profiles of respondent

Characteristics	Description	Frequency	Percent
Gender of respondents	Male	146	72.3
	Female	56	27.7
	Total	202	100.0
Age of respondents	18 to 25 years	6	3.0
	26 to 35 years	96	47.5
	36 to 45 years	88	43.6
	Above 45	12	5.9
	Total	202	100.0
Qualification	Below college diploma	8	4.0
	College diploma	66	32.7
	First degree	110	54.5
	Second degree (MSc, MA)	18	8.9
	Total	202	100.0
Position	Top management	6	3.0
	Middle level management	62	30.7
	Lower level management	24	11.9
	Expert	78	38.6
	Below expert	32	15.8
	Total	202	100..0
Experience	Below 5 years	20	9.9
	5-10 years	92	45.5
	10-15 years	42	20.8
	Above 15 years	48	23.8
	Total	202	100.0

Source: researcher survey, 2021

As indicated the above table 72.3% (146) of respondents were males, while the remaining 27.7% (56) were females. This implies that the majority of employees of MOHA soft drinks industry were males.

Age of respondents: As shown in the above table regarding the age group of the respondents the larger portion of the respondents that is 47.5% (96) falls within the age group of 26-35 years, 43.6% (88) respondents falls within the age group of 36-45 years, 5.9% (12) respondents falls within the age group of above 45 years and 3% (6) respondents falls within the age group of 18-25 years. This shows that the majority 47.5% (96) of employee's age in MOHA soft drinks industry is lies between 26-35 years group which is adult and productive age group.

Qualification: As the above table shown that the majority 54.5% (110) of the respondents had a first degree level of education, 32.7% (66) of respondents had college diploma, 8.9% (18) of the respondents had second degree (MSc, MA) and 4% (8) of the respondents had certificate or below college diploma. This indicates the majority of employees in MOHA soft drinks industry were holders of first degree. From this the researcher concluded that the employees of the case company have a good level of education.

Position in organization: As indicated the above table that the majority 38.6% (78) of the respondents are expert, 30.7% (62) of the respondents are working on middle level management, 15.8% (32) of the respondents are below expert, 11.9% (24) of the respondents are working on lower level management, and finally 3% (6) of the respondents are working on top level management. This implies the majority 38.6% (78) of employees of MOHA soft drinks industry were experts followed by middle level management.

Work experience: As indicated the above table from the total number of respondents, 45.5% (92) of the respondents have a work experience of 5-10 years, 20.8% (42) of the respondents have a work experience of 10-15 years, 9.9% (20) of the respondents fall at a work experience level of below 5 years, finally 23.8% (48) of the respondents fall at a work experience level of above 15 years. This implies the most of the respondents have sufficient knowledge and good experience in their organization.

4.4. Descriptive analysis

In descriptive statistics analysis for all variables mean and standard deviation was used. In this case Mean value was used to show the typical response among respondents to the extent or level of company supply chain collaboration components. In the process of examining of the data, standard deviation was used.

Five supply chain collaboration components were considered to examine whether there is collaboration between the case company, MOHA soft drinks industry and its supply chain partners. The components are information sharing, decision synchronization, incentive alignment, and resource sharing and joint knowledge creation. Thus, respondents of the case company were asked questions related to these dimensions.

According to (Jhone R., 2010), the scale of the approach agree- disagree was used to the simple way of measuring specific opinions. The approach enabled construction of multiple items that constituted Likert scales. Analysis of the response scores was conducted on the continuous scale. In this context, if the mean value is 0.5-1.5 strongly disagrees, if the mean value is 1.6-2.5 disagree, if the mean value is 2.6-3.5 moderately agree, 3.6-4.5 agree and if the mean value is 4.6-5 strongly agree.

Table 6 Descriptive statistics and frequencies of supply chain collaboration components

Variables	N	Mean	Std. Deviation
Information Sharing Collaboration (ISC)	202	3.0990	.83148
Decision Synchronization Collaboration (DSC)	202	2.6634	.82519
Resource Sharing Collaboration (RSC)	202	2.9050	.78371
Joint Knowledge Creation Collaboration (JKCC)	202	3.1198	.82215
Incentive Alignment Collaboration (IAC)	202	3.1673	.86105
Organizational Performance (OP)	202	2.9268	.63105
Valid N	202		

Source: researcher survey, 2021

As indicated the above table the first objective of the current study sought to establish the extent of information sharing collaboration components in MOHA soft drinks industry. The overall

response of mean score among respondents with regard to information sharing collaboration applied in the company is (Mean=3.0990 with Std. Deviation=.83148). Generally, the overall mean score for information sharing is greater than 2.5, this, implies respondents were moderately agree to fact that information sharing collaboration is applied in respective industry.

Second, prior to examine the extent of quantitative analyses of employee's questionnaire responses was conducted to identify their awareness of decision synchronization collaboration being used in the industry. Based on the result of the above table the overall mean of decision synchronization collaboration is (Mean=2.6634 with Std. Deviation=.82519). As indicated the above table the total mean score of decision synchronization is greater than 2.5, which indicates the respondents were moderately agree to the fact that decision synchronization collaboration is implemented in their organization

The overall mean response score among respondents with regard to resource sharing collaboration used in the industry is (Mean= 2.9050 with Std. Deviation= .78371). based on the above table finding resource sharing collaboration scores, the overall mean is greater than 2.5, which implies the respondents are moderately agree to the fact that resource sharing collaboration is implemented in their organization.

As shown the above table regarding the overall agreement among respondents on the level of joint knowledge creation collaboration in MOHA soft drinks industry mean value is (M= 3.1198 with Std. Deviation=.82215). based on the above table result joint knowledge creation collaboration scores, the overall mean is greater than 2.5, which indicates the respondents are moderately agree to the fact that joint knowledge creation collaboration is implemented in their organization.

The overall mean response scores among respondents with regard to incentive alignment collaboration applied in the MOHA soft drinks industry is (Mean= 3.1673 with Std. Deviation=.86105). This implies that the implementation and collaboration of supply chain of incentive alignment in the industry were somewhat good and moderate.

Generally, based on the finding on Table 6: all items asked under the five supply chain collaboration scores a mean greater than 2.5, which imply the respondents were moderately agree to the fact that supply chain collaboration components has implemented moderately in MOHA soft drinks industry located in Nifas silk plant.

With regard to organization performance: organization performance was considered as the dependent variable in this study. Nine items regarding customer satisfaction, market share and product quality were asked to measure the industry prevailing level of performance. As shown the above table the overall mean score of organizational performance is (Mean=2.9268 with Std. Deviation= .63105). This implies the three measuring dimension of performance; customer satisfaction, market share, and product quality have moderate achievement on organizational performance.

4.5. Correlation analysis

In addition to describing the shape of variable distributions, another important task of correlation analysis is to examine and describe the relationships between variables. Correlations are perhaps the most basic and most useful measure of relationship between two or more variables. According to (Kothari, 2004), the degree of the correlation coefficient defines the strength of the correlation. When r = (+) 1, it indicates a perfect positive correlation and when it is (–) 1, it indicates a perfect negative correlation. The value of 'r' nearer to +1 or –1 indicates a high degree of correlation between the two variables). A result between 0.1 and 0.3 indicates weak relationship, whereas a result between 0.4 and 0.6, and 0.7 and 0.9 implies respectively moderate and strong relationships among variables.

Here, the researcher carried out a correlation analysis to test the relationship between set of supply chain collaboration components and organizational performance. Supply chain collaboration components in this study were: information sharing, decision synchronization, resource sharing, joint knowledge creation, and incentive alignment collaboration. Therefore, the findings for this analysis were shown in the following correlation matrix table as follow.

Table 7 Correlations analysis between SCCC and organizational performance

Variables		ISSCC	DSSCC	RSSCC	JKCSCC	IASCC	OP
ISSCC	Pearson Correlation	1	.270**	.340**	.403**	.279**	.638**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	202	202	202	202	202	202
DSSCC	Pearson Correlation	.270**	1	.471**	.337**	.295**	.604**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	202	202	202	202	202	202
RSSCC	Pearson Correlation	.340**	.471**	1	.357**	.338**	.553**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	202	202	202	202	202	202
JKCSCC	Pearson Correlation	.403**	.337**	.357**	1	.403**	.611**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	202	202	202	202	202	202
ISSCC	Pearson Correlation	.279**	.295**	.338**	.403**	1	.447**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	202	202	202	202	202	202
OP	Pearson Correlation	.638**	.604**	.553**	.611**	.447**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	202	202	202	202	202	202

**. Correlation is significant at the 0.01 level (2-tailed).
 Source: researcher survey; 2021

As indicated the above table 7: Pearson correlation analysis the set of supply chain collaboration components mentioned as independent variables in the model and organizational performance of MOHA soft drinks industry have been a positive relationship.

In details, the result of this study shown that the above table, the correlation between information sharing collaboration (ISC) and organizational performance is positive and they are significantly correlated at (r=.638**), (P<0.01). This implies that information sharing collaboration and organization performance is positive significantly correlated.

The result also shows that decision synchronization collaboration (DSC) is positively and significantly correlated with organizational performance at (r=.604**), (P<0.01) which indicates moderate and significant relationship between two variables. The result of this study shown that joint knowledge creation collaboration (JKCC), have a moderate positive correlation with organizational performance with Pearson correlation coefficient value (r=.611**), (p<0.01). Whereas, resource sharing collaboration (RSC) and incentive alignment collaboration (IAC)

have positive and moderate correlation with the Pearson correlation coefficient of (r=.553**,p<0.01) and (r=.447**, p<0.01) respectively.

In general, the correlation analysis shows that there was moderately positive and statistically significant relationship between set of supply chain collaboration components mentioned in the model and the organizational performance of MOHA soft drinks industry.
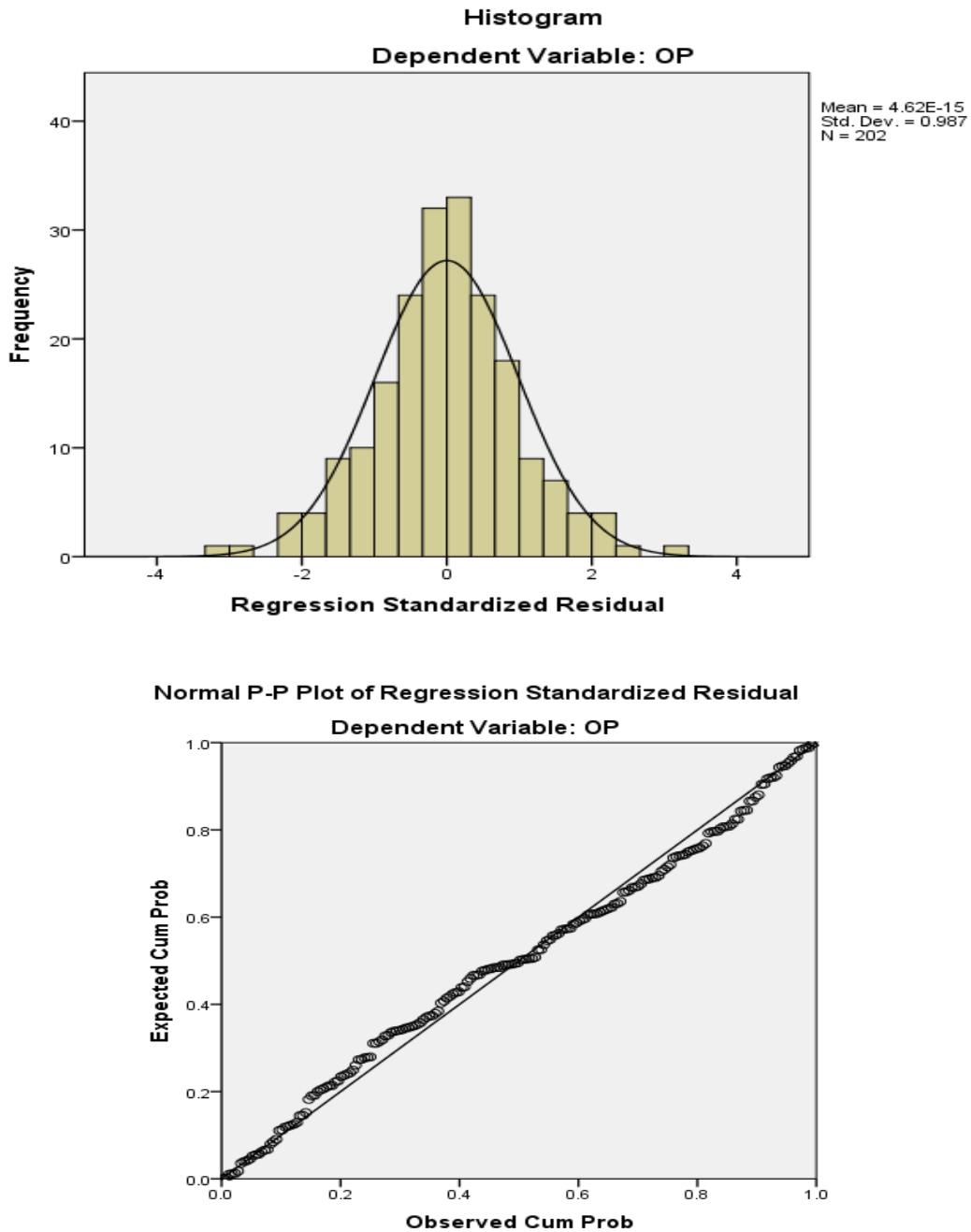
4.6. Regression Analysis

In order to examine how the dimensions of SCCC predict the performance of MOHA soft drinks industry. According to (Khotari, 2004), regression analysis is a statistical method to deal with the formulation of a mathematical model depicting relationship between variables which can be used for the purpose of prediction of the value of dependent variable , given the value of the independent variables. Therefore via multiple regressions analysis efforts were made to determine the predictive power of the supply chain collaboration components, namely: information sharing, decision synchronization, resource sharing, joint knowledge creation and incentive alignment on the performance of MOHA soft drinks industry.

Before carrying out multiple regression analysis, the researcher has checked the required assumptions that the data must meet to make the analysis reliable and valid. The following assumptions of multiple linear regressions were tested by using SPSS version 23.

4.6.1. Normality test

The variables in the multiple linear regression models must follow the normal distribution. This means that the errors are normally distributed and that a plot of the values of the residuals will approximate a normal curve. The researcher was used two common methods to check a normality assumption includes using Histogram and a Normal P-P plot. It can be concluded normality is guaranteed as the Histogram generated is normally distributed and the P-P plot follows the diagonal reference line as shown below.

Figure 2 Normality assumption test

Histogram
Dependent Variable: OP

Mean = 4.62E-15
Std. Dev. = 0.987
N = 202

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: OP

4.6.2. Linearity test

Linearity assumption was tested by producing scatterplots of the relationship between each independent variables and dependent variable. By visually looking at the scatterplot produced by SPSS, the relationship between each independent variable and dependent found to be linear as shown below.

Figure 3 Linearity assumption test

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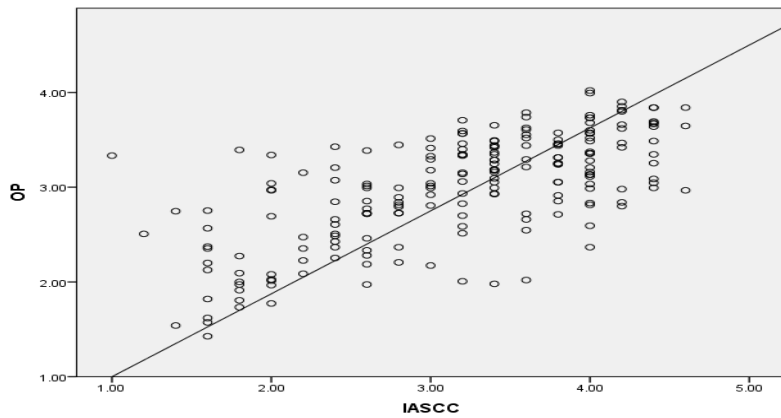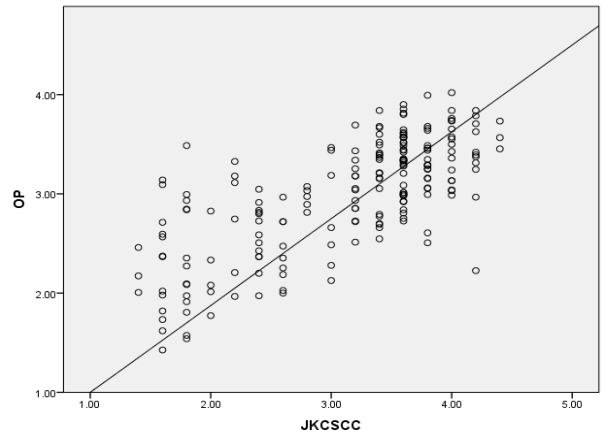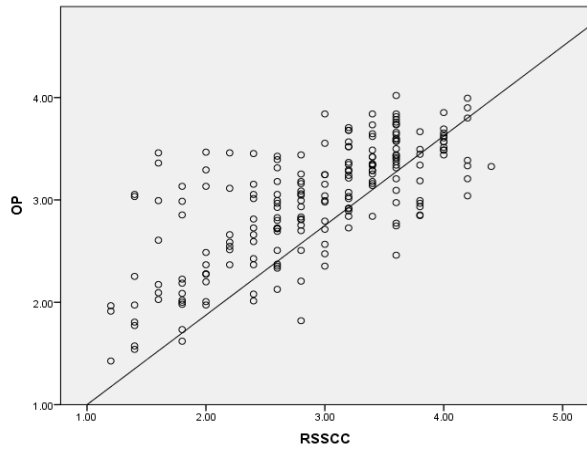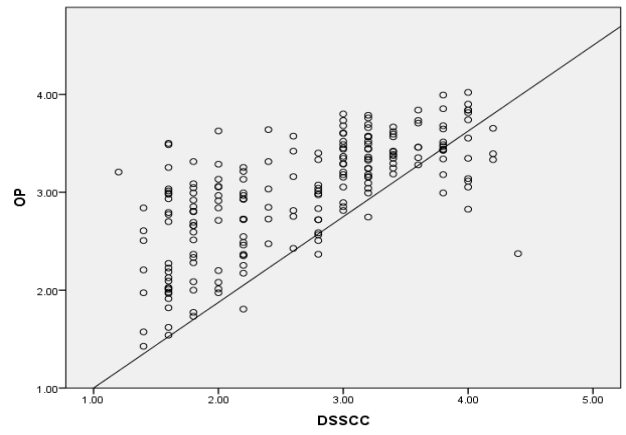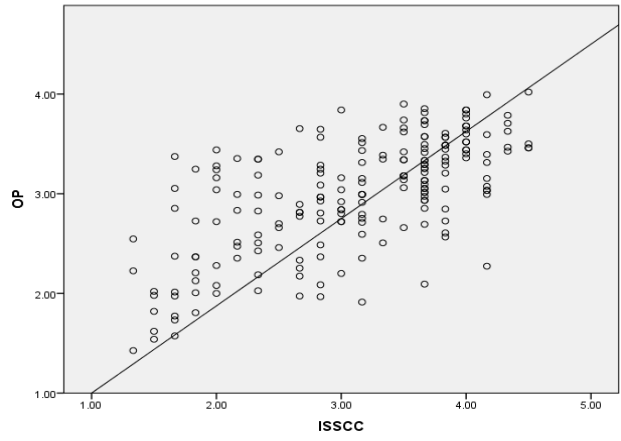
4.6.3. Multi-collinearity assumption

Multi-collinearity assumption refers to the situation in which the independent variables are highly correlated. When independent variables are multi-collinear, there is "overlap" or sharing of predictive power. This case may lead to the paradoxical effect, where by the regression model fits the data well, but none of the predictor variables has a significant impact in predicting the dependent variable. The most usable method of detecting the multi-collinearity is Tolerance and Variance Inflation Factor and it is very accurate in determining the problem of multi-collinearity. The common rule is if any of the "VIF" values exceed 5 or 10, it implies the association regression coefficients are poorly estimated because of multi-collinearity and "Tolerance" value should be more than 0.2. Accordingly, Multi-collinearity assumption were conducted using SPSS and VIF values found to be less than the values stated in the rule of thumb which shows that multi-collinearity was not a problem as shown below.

Table 8 Multi-collinearity assumption

Coefficients			
Model		Collinearity Statistics	
		Tolerance	*VIF*
1	Information Sharing	.784	1.276
	Decision Synchronization	.734	1.362
	Resource Sharing	.692	1.444
	Joint Knowledge Creation	.707	1.415
	Incentive Alignment	.780	1.282

Source: SPSS output survey, 2021

4.6.4. Homoscedasticity assumption:

The assumption of homoscedasticity refers to the equal variance of errors across all levels of the independent variables. This means that errors are spread out consistently between the variables. This is evident when the variance around the regression line is the same for all values of the predictor variable. Homoscedasticity can be checked by a visual examination of a plot of the standardized residuals by the regression standardized predicted value. If possible, residuals are randomly distributed around zero (the horizontal line) providing even distribution. To assess

homoscedasticity, the researcher created a scatterplot of standardized residuals versus standardized predicted values using SPSS and found that Heteroscedasticity was not a major problem as shown below:

Figure 4 Homoscedasticity assumption test

Scatterplot
Dependent Variable: OP
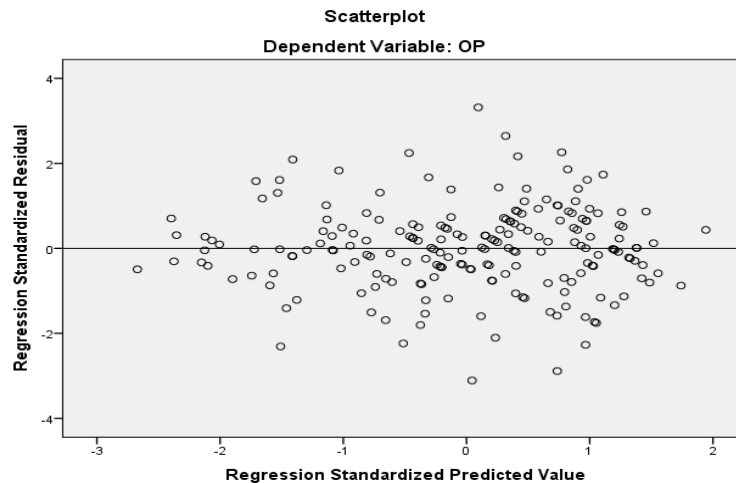
4.7. Multiple linear regressions

To determine how much the independent variables explain the dependent variable which is organizational performance, the researcher was conducted regression analysis. According to (Ho, 2006), cited by (Yirgalem Adis, 2019), a measure of strength of the computed predication equation is R-squared, sometimes called the coefficient of determination. In the regression model, R-squared is the square of the correlation coefficient between the observed and predicated value of dependent variable. If R squared is 1(100%), there exist a perfect linear relationship between the predicators (x) and dependent variable(y). The result of the regression was presented in the table as follows:

Table 9 Regression analysis Model summary between SCCC and OP

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.845	.714	.707	.34156

a. Predictors: (Constant), IASCC, ISSCC, DSSCC, JKCSCC, RSSCC

b. Dependent Variable: OP

Source: researcher survey; 2021

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As indicated the above 9: model summary table, the "R" column represents the value of R, the multiple correlation coefficient. R value of .845 indicates strong correlation between supply chain collaboration components and organization performance which shows a good level of prediction.

In addition, the "R Square" column represents the R Square value (coefficient of determination), which is the proportion of variance on the organizational performance that can be explained by the set of supply chain collaboration components. As shown from the above table, R Square value of .714 indicates that 71.4% of the variation on the organizational performance of MOHA soft drinks industry can be explained by the set of supply chain collaboration components included in the model. This means, that remaining 28.6% of the variation in organizational performance explained by other supply chain collaboration parameters.

Adjusted R Squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variables. As shown from the above table, the value of Adjusted R- Square of all the five variables is .707, indicates that 70.7% of the variability in the level of organizational performance is accounted for by determinants of organizational performance.

Table 10 ANOVA Model fit

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	57.176	5	11.435	98.020	.000[b]
	Residual	22.866	196	.117		
	Total	80.042	201			

a. Dependent Variable: OP

b. Predictors: (Constant), IASCC, ISSCC, DSSCC, JKCSCC, RSSCC

Source: SPSS output survey, 2021

The regression model overall fit can be examined with the help of ANOVA. The F-ratio used for to test the overall regression model is a good fit for the data or not. The above table of this study shows that the set of SCC components mentioned in the model have statistically significant to predict the organizational performance of MOHA soft drinks industry, because there is high of F=98.020, and (P<0.001), which implies, that the regression model is a good fit of the data.

Table 11 Regression coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.209	.129		1.619	.107
	ISSCC	.280	.033	.368	8.543	.000
	DSSCC	.242	.034	.316	7.098	.000
	RSSCC	.124	.037	.154	3.354	.001
	JKCSCC	.203	.035	.264	5.812	.000
	IASCC	.068	.032	.093	2.141	.033

 a. Dependent variable: OP

  Source: SPSS output survey, 2021

As indicated the above table 11:, the regression coefficient explain the extent to which changes in the dependent variable can be explained by change in the independent variables or the percentage of variation in the organizational performance is explained by changes by independent variables such as: information sharing collaboration, decision synchronization collaboration, resource sharing collaboration, Joint knowledge creation collaboration and incentive alignment collaboration.

As shown in the above table the sig. value or p-value represents the confidence level (significance level). Accordingly the sig value of information sharing collaboration is .000, which is <.05, which implies that information sharing collaboration has positive and significance effect on organization performance at (β=.280) and (p=.000). This finding supported that by (Al-Doori, 2019), information sharing collaboration has statistically and significantly predicts the organization operational performance at the value of (β=.678, t=2.485, p=.000). His finding shows that information sharing collaboration is the most important for improve organization operational performance.

As indicated in the above table 11: the sig. value of decision synchronization collaboration is p=.000, which is less than .05. This implies decision synchronization collaboration has a positive and significant effect on organizational performance at (β=.242) and (p=.000). Therefore, there is a positive and significant relationship between decision synchronization collaboration and organization performance. This result is supported by (Tigist B., 2017), decision synchronization collaboration has positively and significantly affects competitive advantage in Ethiopian tour operation (β=.174, t=2.879, and p=.005). This finding also supported by (Al-Doori, 2019), who

confirmed that decision synchronization collaboration was highly practiced in most of firms studied and this had positive impact on organizational performance at (β=.559, t=5.672, and p=.000)

As shown the above table 11: the sig. value of resource sharing collaboration is .001, which is less than .05. This implies resource sharing collaboration has a positive and significant effects on organizational performance at (β=.124) and (p=.001). This result is supported by (Anderson & Narus, 1990), that resource sharing collaboration has positive and significant effect on organization performance at the value of (β=.519, t=9.464, sig=.000). From this it can be concluded that resource sharing collaboration has positive and significant effects in MOHA soft drinks industry.

As shown the above table 11: the sig. value of joint knowledge creation collaboration is .000, which is less than .05. This implies joint knowledge creation collaboration has a positive and significant effects on organizational performance at (β=.203) and (p=.000). This result is supported by (Anderson & Narus, 1990), that joint knowledge creation collaboration has positive and significant effect on organization performance at the value of (β=.551, t=9.835, sig=.000). From this it can be concluded that joint knowledge creation collaboration has positive and significant effects in MOHA soft drinks industry.

As indicated in the above table 11: the sig. value of incentive alignment collaboration is p=.033, which is less than .05. This implies incentive alignment collaboration has a positive and significant effect on organizational performance at (β=.068) and (p=.033). Therefore, there is a positive and significant relationship between incentive alignment collaboration and organization performance. This result is supported by (Yirgalem Adis, 2019), incentive alignment collaboration has positively and significantly affects BGI Ethiopia at (β=.329, t=4.312, and p=.000). From this it can be concluded that incentive alignment collaboration has positive and significant effects in MOHA soft drinks industry.

Standardized coefficients β

The standardized coefficients are useful to know which of the supply chain collaboration dimension has more impact on the organizational performance of MOHA soft drinks industry. It used for comparing the impact of supply chain collaboration components mentioned in the model on the organizational performance of MOHA soft drinks industry.

The value of β from the above regression table represents the slope of the regression line. Among the five variables these are identified as predictors, information sharing collaboration is the largest contributor of organizational performance with a beta coefficient of .368. Decision synchronization collaboration is the second (.316) and it followed by joint knowledge creation collaboration, resource sharing collaboration, and incentive alignment collaboration with beta coefficients of, .264, .154, .093 respectively in their relative effect on organizational performance.

Unstandardized coefficients β

The unstandardized coefficient denotes the mean or average change in the organizational performance of MOHA soft drinks industry with a unit change in set of supply chain collaboration stated in the model as independent variables.

The regression equation between supply chain collaboration components and organizational performance can be written as follows:

$$OP = \beta 0 + \beta 1 ISC + \beta 2 DSC + \beta 3 RSC + \beta 4 JKCC + \beta 5 IAC + \epsilon$$

$$OP = .209 + .280 IS + .242 DS + .124 RS + .203 JKC + .068 IA + .34156$$

Where; OP=organizational performance

ISC=Information sharing

DSC=Decision synchronization

RSC=Resource sharing

JKCC=Joint knowledge creation

IAC=Incentive alignment

The constant value (β0 = .209) demonstrations that the organizational performance of MOHA soft drinks industry would be .209, if coefficients of supply chain collaboration components which mentioned in the model were zero. On the other hand, a beta coefficient of .280 indicates that, a unit change in information sharing collaboration leads to a change in the organizational performance by .280, a unit change in decision synchronization collaboration leads to a .242 increments in the organizational performance , a unit change in resource sharing collaboration leads to a .124 increments in the organizational performance, a unit change in joint knowledge creation collaboration leads to a .203 increments in the organizational performance finally, a unit change in incentive alignment collaboration leads to a .068 increments in the organizational performance of MOHA soft drinks industry.

4.8. Validating the Proposed Hypotheses

Ha1: Information sharing has positive and significant effect on organizational performance.

Information sharing collaboration has a positive and significance effect on organizational performance at P= 0.000. This finding supported that by (Al-Doori, 2019), As a result, the relationship between information sharing collaboration and organizational performance is positive and significance in MOHA soft drinks industry. Therefore, Ha1 is accepted.

Ha2: Decision synchronization has positive and significant effect on organizational performance.

Decision synchronization collaboration has a positive and significance effect on organizational performance at P= 0.000. This result is supported by (Tigist B., 2017), and (Al-Doori, 2019). As a result, the relationship between decision synchronization collaboration and organizational performance is positive and significance in MOHA soft drinks industry. Therefore, Ha2 is accepted.

Ha3: Resource sharing has positive and significant effect on organizational performance.

Resource sharing collaboration has a positive and significance effect on organizational performance at P= 0.001. This result is supported by (Anderson & Narus, 1990), As a result, the relationship between resource sharing collaboration and organizational performance is positive and significance in MOHA soft drinks industry. Therefore Ha3 is accepted.

Ha4: Joint knowledge creation has positive and significant effect on organizational performance.

Joint knowledge creation collaboration has a positive and significance effect on organizational performance at P= 0.000.). This result is supported by (Anderson & Narus, 1990), As a result, the relationship between joint knowledge creation collaboration and organizational performance is positive and significance in MOHA soft drinks industry. Therefore, Ha4 is accepted.

Ha5: Incentive alignment has positive and significant effect on organizational performance.

Incentive alignment collaboration has a positive and significance effect on organizational performance at P= 0.033). (p=.000). This result is supported by (Yirgalem Adis, 2019). As a result, the relationship between resource sharing collaboration and organizational performance is positive and respectively significance in MOHA soft drinks industry. Therefore, Ha5 is accepted.

Table 12 Summary of hypothesis result

Path	Hypothesis	Type of Hypothesis	B	P <0.05	Remark
IS——→OP	Ha1	Alternative hypothesis	.280	.000**	Accepted
DS——→OP	Ha2	Alternative hypothesis	.242	.000**	Accepted
RS——→OP	Ha3	Alternative hypothesis	.124	.001*	Accepted
JKC——→OP	Ha4	Alternative hypothesis	.203	.000**	Accepted
IA——→OP	Ha5	Alternative hypothesis	.068	.033*	Accepted

[*, ** indicates that significance level at 5% and 1% respectively]

Source: Researcher survey, 2021

5. SUMMARY, CONCLUSION AND RECOMMENDATION

5.1. Introduction

In this chapter includes the summary, conclusions, recommendations and suggestion for further researches were discussed. For clarity purpose, the conclusions are made based on the research objectives of the study. Based on the findings of the study, recommendations are made to MOHA soft drinks industry which founded in Nifas Silk plant.

5.2. Summary of finding

The result of this study provides insight on supply chain collaboration components on the performance of MOHA Soft drinks industry. The summary of the research finding was presented as follows:

First of all, descriptive statistical analysis, the overall mean score was computed for each independent variable (the set of supply chain collaboration components mentioned in the model).

❖ The study revealed that information sharing collaboration (M=3.0990, SD=.83148), decision synchronization collaboration (M=2.6634, SD=.82519), resource sharing collaboration (M=2.9050, SD=.78371), joint knowledge creation collaboration (M=3.1198, SD=.82215) and incentive alignment collaboration (M=3.1673, SD=.86105), which implies the respondents were moderately agree to the implementation of these variables in MOHA soft drinks industry.

Then, Pearson correlation coefficient was used to determine the relationship between the set of supply chain collaboration components mentioned in the model (independent variable) and the organizational performance of MOHA soft drinks industry which used as dependent variable in this study. Therefore, this study finding revealed that;

Based on the Pearson correlation analysis result, information sharing collaboration (r=.638, p<0.01), decision synchronization collaboration (r=.604, p<0.01), joint knowledge creation collaboration (r=.611, p<0.01) and resource sharing collaboration (r=.553, p<0.01) have a moderate positive and statistical significant relationship with organizational performance. Whereas, incentive alignment collaboration (r=.447, p<0.01), have a Positive and respectively

statistical significant relationship with organizational performance of MOHA soft drinks industry.

Then after, multiple regression analysis between supply chain collaboration components and OP, determine the overall relationship between the set of supply chain collaboration components and organizational performance depend on "R" (multiple correlation coefficient). So,"R" value (.845) indicates a strong positive association between supply chain collaboration components which mentioned in the model and the performance of MOHA soft drinks industry. R square value from the regression model summary indicates proportion of variation on organizational performance explained by the whole supply chain collaboration components in the model, therefore $(R^2 =.714)$ means that 71.4% of the total variability in organizational performance was explained by the whole supply chain collaboration components mentioned in the model. The ANOVA test result revealed, the whole supply chain collaboration components stated in the model collectively have statistically significant predicted the organizational performance of MOHA soft drinks industry $(F = 98.020, p < .001)$.

❖ The regression analysis revealed that supply chain collaboration components, namely; information sharing, decision synchronization, resource sharing, joint knowledge creation and incentive alignment were statistically significant to predict the organizational performance of MOHA soft drinks industry because p-values were less than 0.05.

The regression analysis further revealed that information sharing has the highest impact on organizational performance followed by joint knowledge creation collaboration, decision synchronization collaboration, resource sharing and incentive alignment respectively.

5.3. Conclusion

This research was conducted on to examine the effect of supply chain collaboration on organizational performance in MOHA soft drinks industry. Based on the objectives and findings of the study, the following conclusions are drawn.

From the descriptive statistical analysis, results regarding the supply chain collaboration components the studies conclude that:

❖ Information sharing collaboration, decision synchronization collaboration, resource sharing collaboration, joint knowledge creation collaboration and incentive alignment collaboration were moderately implemented in MOHA soft drinks industry.

From correlation analysis, the relationship between supply chain collaboration components mention in the model and performance of MOHA soft drinks industry conclude as follow:

❖ The five supply chain collaboration components such as information sharing collaboration, decision synchronization collaboration, resource sharing collaboration, joint knowledge creation collaboration and incentive alignment collaboration were identified from correlation analysis. These all the five collaboration parameters have a moderate positive relationship with organizational performance

To memorize, the specific objectives of this study which stated in chapter one were examining the effect of supply chain collaboration components namely: information sharing, decision synchronization resource sharing, joint knowledge creation and incentive alignment organizational performance of MOHA soft drinks industry. Therefore, the finding of this study revealed shown that:

❖ The supply chain collaboration components namely; information sharing collaboration, decision synchronization collaboration, resource sharing collaboration, joint knowledge creation collaboration, and incentive alignment collaboration have a predicting power on the organizational performance of MOHA soft drinks industry located in Nifas Silk plant.
❖ Moreover, information sharing collaboration has relatively higher effects on organizational performance of MOHA soft drinks industry followed by joint knowledge creation collaboration, decision synchronization collaboration, resource sharing collaboration and incentive alignment collaboration respectively.

5.4. Recommendation

Depending on the summary of findings and conclusions of this study, the researcher recommends the following issues.

Based on the findings and conclusion reached, recommendations forwarded that help the MOHA soft drinks industry to improve practical implementation of supply chain collaboration

components so as to improve organizational performance. As this study acknowledged, information sharing, joint knowledge creation, and decision synchronization has relatively higher effects on organizational performance followed by resource sharing and incentive alignment has also respectively. Therefore the researcher recommends as follow:

- Generally, the supply chain collaboration in MOHA soft drinks industry is moderately good. However, it has not reached at the desired level according to the quantitative data showed. Therefore, MOHA soft drinks industry should be ensure the high supply chain collaboration at all levels with supply chain partners that will contribute significantly to their competitive advantage and improved performance.

- MOHA should be create extensive coordination by involvement of supply chain partners in joint planning, involving them in product development process and having clear policy on managing the relationship.

- MOHA soft drinks industry should be standardize means of communication by creating environment that improves effective information and resource sharing among supply chain partners.

- MOHA soft drinks industry should be ensure strong relationship with supply chain partners based on mutual understanding of supply chain collaboration and mutual goals. Therefore, to improve and enhance organization performance and to ensure global competitiveness, MOHA soft drinks industry should be improve supply chain collaboration in all components.

- As indicated in conclusions, all supply chain collaboration components are appropriate for the effect of organizational performance. Therefore, giving more attention in properly implementing and improving of those and other components is better for the MOHA soft drinks industry performance.

5.5. Limitation and suggestion for future studies

There were limitations in to this study that should be considered in the future researchers.

- ✓ First, this study didn't include all supply chain collaboration components. The study included only five supply chain collaboration components namely: information sharing, decision synchronization, resource sharing, joint knowledge creation and incentive

alignment. Due to this it suggests for the future studies to consider other supply chain collaboration parameters such as trust, commitment, goal congruence, collaborative communication etc.

✓ Second, the study also has methodological limitation. This study was conducted only using the questionnaire survey to collect data. It does not take in to consideration other methods like interview. And also respondents were limited on only employees of the organization. This may limit from getting additional information. Therefore further research is needed to include respondents from supply chain partners.

✓ Third, the researcher conducted this study by using only quantitative research approach method, so, it recommends for the future researchers to do this research by using mixed research approach.

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APPENDIX

DEBRE BEREHAN UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

Department Of Logistics and Supply Chain Management

Post Graduate Program

Questionnaires on: *"The effect of supply chain collaboration on organisation performance in MOHA soft drinks industry" To be filled by respondents*

Dear respondents,

My name is MASTEWAL MINTESINOT; I am a Master's degree student at Debre Berehan University, College of business and economics in the Department of Logistics and Supply Chain Management. To complete my master's degree, I'm conducting a research titled on "**The Effect of supply chain Collaboration on the Performance of MOHA soft drinks industry**" The aim of this questionnaire is to collect the required data for the research I am conducting on your organisation. To complete this study, your cooperation is highly required. Therefore, your genuine response is very important for the success of the study. I would like to thank you in advance for your cooperation.

Sincerely yours,

Mastewal Mintesinot.

Direction: Dear respondents,

- ✓ You don't need to write your names.
- ✓ Put thick mark (√) in the box for the items given under section I, section II and Section III given below.
- ✓ Contact address: if you have any question please contact me through the following address: Telephone: 0986910602/0912732293

    Email: mmintesinot2019@gmail.com

Section I: Questions Related to Your Personal Profile:

1. Age; 18-25 years ☐ 26-35 years ☐ 36-45 years ☑ above 45 years ☐

2. Gender; Male ☑ Female ☐

3. Your qualification:

Below college diploma ☐

College diploma ☐

First Degree ☐

Second Degree (MSc, MA) ☑

PHD and above ☐

4. Your current Position in the organization

Top management ☑

Middle level management ☐

Lower level management ☐

Expert ☐

Below expert ☐

5. Year of service in the organisation:

Below 5years ☐ 5-10 year ☑

10-15years ☐ above15 years ☐

Section II: Questions Related to Collaboration of MOHA Soft Drinks Industry and Its Supply Chain Partners

The following questions are about how MOHA soft drinks industry collaborates with supply chain partners in different ways such like: information sharing, decision synchronization, incentive alignment, joint knowledge creation andresource sharing. Please indicate the level of your agreement or disagreement.

Using (✓) on the statements regarding this issue

The rating is;

1= Strongly Disagree,

2= Disagree,

3= Neutral,

4= Agree

5=Strongly Agree as shown below in the table.

Supply chain collaboration components and its items		1(SD)	2(D)	3(N)	4(A)	5(SA)
Information sharing						
IS1	promotional events				✓	
IS2	Price changes				✓	
IS3	Inventory holding costs					✓
IS4	Supply disruption				✓	
IS5	Delivery schedule					✓
IS6	On-hand inventory level				✓	
Decision synchronization						

Code	Item	1	2	3	4	5
DS1	Joint plan on promotional events				✓	
DS2	Jointly plan on product assortment			✓		
DS3	Joint decision on inventory requirements				✓	
DS4	Joint development of demand forecast				✓	
DS5	Jointly manage inventory				✓	
Resource sharing						
RS1	Use cross-organizational teams frequently for process design and improvement		✓			
RS2	Dedicate personnel to manage the collaborative processes.			✓		
RS3	Share technical supports				✓	
RS4	Share equipment's (e.g. computers, networks, machines)			✓		
RS5	Pool financial and non-financial resources (e.g. time, money, training)			✓		
Joint Knowledge creation						
KC1	Jointly search and acquire new & relevant knowledge				✓	
KC2	Jointly assimilate & apply relevant knowledge				✓	
KC3	Jointly identify customer needs				✓	
KC4	Jointly discover new and emerging market				✓	
KC5	Jointly learn and intention and capabilities of our competitors					✓
Incentive alignment						

IA1	Share costs (e.g. loss on order changes)					✓
IA2	Share benefits (saving on reduced inventory costs)				✓	
IA3	Share anyrisks that occur in the supply chain			✓		
IA4	The incentive of your firm commensurate with your investment and risks				✓	
IA5	Co-develop systems to evaluate and publicize each other's performance			✓		

Section Three: Questionnaires about Indicators Of Organizational Performance

- Please thick appropriate box which best indicate your organization overall performance.
- The rating represents your level of agreement as follow:

1= strongly disagree 2=Disagree 3=Neutral 4=Agree 5=strongly agrees

Organizational performance metrics

No.	Customer Satisfaction	1(SD)	2(DA)	3(N)	4(A)	5(SA)
1	There is provision of quality to customers				✓	
2	There is growth in value added productivity				✓	
3	There is customer compliant to the company				✓	
	Market share					
1	The company grow in market share or sales			✓		
2	Overall performance of the company has improved		✓			
3	Market share is usually used to express competitive position				✓	
	Product quality					
1	Your company compete based on quality					✓
2	Offer high quality product to customer				✓	
3	Offer products that are highly reliable		✓			

Thank you!