Effect of Logistics Integration on Distribution Performance in Bahir Dar Textile Share Company

Mengesha Dagnew

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Effect of Logistics Integration on Distribution Performance in Bahir Dar Textile Share Company

By
Mengesha Dagnew

Advisor; - Biruk Solomon (PhD)

July, 2020

Bahir Dar
Effect of Logistics Integration on Distribution Performance in Bahir Dar Textile Share Company

By
Mengesha Dagnew

Thesis Submitted to Bahir Dar University College of Business and Economics Department of Logistics and Supply Chain Management in Partial Fulfillment of the Requirements for the Degree of Masters of Arts in Logistics and Supply Chain Management

Advisor; -Biruk Solomon (PhD)

July, 2020

Bahir Dar

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Declaration
This is to certify that the thesis entitled “effect of logistics integration on distribution performance in Bahir Dar Textile Share Company”, submitted in partial fulfillment of the requirements for the degree of Master of Arts in logistics and supply chain management, Bahir Dar University, is a record of original work carried out by me and has never been submitted to this or any other institution to get any other degree or certificates. The assistance and help I received during the course of this investigation have been duly acknowledged.

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Approval of Thesis for Defense

I hereby certify that I have supervised, read, and evaluated this thesis titled “effect of logistics integration on distribution performance in Bahir Dar Textile Share Company” by Mengesha Dagnew prepared under my guidance. I recommend the thesis be submitted for oral defense.

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As members of the board of examiners, we examined this thesis entitled “effect of logistics integration on distribution performance in Bahir Dar Textile Share Company” by Mengesha Dagnew. We hereby certify that the thesis is accepted for fulfilling the requirements for the award of the degree of “Master of Arts in logistics and supply chain management”.

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Acknowledgements

First of all, I would like to express my deepest gratitude to Almighty GOD for helping me throughout my life. Secondly, I would like to express my appreciation to my advisors Biruk Solomon (PhD) for the valuable insights they given to me valuable advice and understanding me in the course of this thesis. I would also like to extend my acknowledgment to my families, all my friends and Bahir Dar Textile Share Company manager and employees those who have helped me to accomplish this study.
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Acronyms
CIPS- Chartered institute of purchasing and supply
CPFR-Collaborative planning, forecasting and replenishment
EDI- Electronic data interchange
EPOS- Electronic points of sale
ERP- Enterprise resource planning
FFV- Fresh fruit vegetable
GSCF- Global supply chain forum
ICT- Information communication technology
IT- Information technology
LSP- Logistics service provider
RBV- Resource based view
RDT- Resource dependence theory
RFID- Radio frequency identification
SCM- Supply chain management
SCOR –Supply chain operation reference model
SPSS- Statistical package for social science
TPL- Third party logistics
VAL- Value added logistics
Abstract

Logistics integration is a vital approach to enhance the various aspects of distribution performance. The main target of the study was to examine the effect of logistics integration on distribution performance in Bahir Dar Textile Share Company. Logistics integration is critical for enhancing apparel distribution. Although successful logistics integration has offered competitive advantage to firms operating in a wide range of industries, it has not yet achieved its full potential in Bahir Dar Textile Share Company. In order to undertake the study, problems related to lack of adequate logistics, lack of access to international market information and technology, obsolete product processing facilities, high cost of inputs in the industries, customs clearance delays, shortage of raw material and accessories and long delays in processing orders on time. Those are the critical forces lead this study into the forefront. An explanatory research design was employed with a sample of 206 employees through stratified sampling. A questionnaire was used as a research tool for collecting data. In order to analyses, interpret and present the data captured via questionnaire, Statistical Package for the Social Sciences (SPSS) version 23 was used. The collected data was analyzed using both descriptive statistics (mean & standard deviation) and inferential statistics (correlation and multiple linear regressions). Main findings of the study depicts that, there is good logistics integration dimension as the mean values of the (information sharing, institutional support, logistics operation coordination and organizational relationship) were above the minimum requirement (i.e. greater than the mean value of 2.5). From the finding all the variables which are used to measure the independent variable has a positive and significant relationship with distribution performance. Moreover, logistics operation coordination and organizational relationship the dimensions of logistics integration had a significant effect on distribution performance of the company in which information sharing and institutional support dimensions had failed to signify the effect on distribution performance.

Keywords: information sharing, institutional support, logistics operation coordination and organizational relationship
CHAPTER ONE
INTRODUCTION

1.1. Background of the Study

According to Morris & Barnes (2009) in the past, European textile and clothing manufactures have been facing unprecedented competitive pressure generated by the increases of globalization trend, the process of free trade and the decline in international consumption. They emphasize today’s fast response to the customer demand within a short lead time. So the adoption of logistics integration is widely seen as a way to achieve competitive strategies in the manufacturing company. Islam (2013) suggest that companies that implement logistics integration can make better relationship with their customer; help to improve competitiveness, increase delivery speed, customer satisfaction, responsiveness and flexibility.

According to Pinmanee (2016) logistics integration important to firms as they seek to improve their profits through with in short lead time to satisfy their customer needs and create long term relationship with customers. Prajogo & Olhager (2012) suggested that organizations to better manage their interaction with customers before purchase, during and after purchase need to have many invested heavily information integration or IT assets. According to Stank (2001) logistics integration is one of the major sources of competitive advantage in many industry where so many stages are need to pass from raw material to finished goods and then to reach at customers end with in stipulated time frame and also plays vital roles in satisfying customer needs and bring delighters in business circle. Gunasekaran & Kobu (2007) suggested that optimal logistics performance implies efficiency and effectiveness of all stages in to the supply chain. Effectiveness is the degree to which customer’s requirements are met, whereas efficiency is the measures how economically a firm’s resources are utilized when providing a pre-determined level of customer satisfaction. However, according to Fawcett & Magnan (2002) logistics integration is unfortunately, still mostly rhetoric with very little practical implementation. The theory behind it posits that a manager must recognize the challenge of balancing the inherent difficulty of collaboration with the competitive potential of supply chain management. Consequently, in practice, logistics integration is typically very difficult to accomplish as different perceptions regarding the execution of the most optimal multi-dimensional supply chain integration framework may produce different performance results (Fabbe-Costes &Jahre, 2008).
According to Suthiwartnarueput (2007) the major challenges in the world facing logistics development include its slight focus, on which is currently solely on physical distribution. Also internally and externally integrated logistics are still lacking and information technology has not been fully utilized as an integral part of logistics systems. So to solve those challenges different studies had been conducted, primarily focused on field of agricultural logistics integration in many countries in the world (Piewthengngaam 2009; Pinmanee 2016; Thongrattana & Perea 2010; Schipmann & Qaim 2010 & Srimanee & Routray, 2012).

However, based on the available agricultural logistics integration literature there is evident paucity of research on logistics integration in industry sector. Likewise in Ethiopia, not any research had been conducted in logistics integration that exploring textile industry. Particularly in Bahir Dar Textile Share Company logistics integration have not been done. Now the company is the leading textile industry in terms of market share, country network, customer, and capital basis and aggressively increases export (total sale) in locally and internationally. Even if the company face the challenges of; Lack of access to international market information and technology, outdated product processing facilities, high cost of inputs in the industry which affects competitiveness, Customs clearance delays, shortage of raw material and accessories and long delays in processing orders on time (Rahel, 2007). Given the above shortcomings, it is vitally important to examine the effect of logistics integration on distribution performance in Bahir Dar Textile Share Company and identify the key essentials on which a modern logistics integration framework can be built in the future. Thus the study fills the knowledge gaps of logistics integration in the textile industry. Hence the motivation of the study was examine the effect of logistics integration on distribution performance in Bahir Dar Textile Share Company.
1.2. Statement of the Problem

According to Stank et al. (2001) the adoption of logistics integration has been shown to play a significant role in the distribution performance, as it can generate higher delivery performance and improve order fulfillment. In addition logistics integration implies an attempt to unify and streamline as many logistical activities within the supply chain as possible. According to Droge et al. (2004) improving logistics integration yields numerous benefits, including greater customer satisfaction, on time delivery of products, fast response to customer demands, flexibility, and faster order completion capability. As a result, improved logistics integration provides the organizations with better utilization of time and space, allowing to the necessary quantity of products to reach all points in the chain efficiently, cost-effectively and in timely manner. However, logistics integration is unfortunately, still mostly rhetoric with very little practical implementation. The theory behind it posits that a manager must recognize the challenge of balancing the inherent difficulty of collaboration with the competitive potential of supply chain management (Fawcett & Magnan, 2002). Suthiwartnarueput (2007) suggests the major challenges of in the world facing logistics development include its slight focus, on which is currently solely on physical distribution. And also internally and externally integrated logistics are still lacking and information technology has not been fully utilized as an integral part of logistics systems. To solve those challenges different studies carried out abroad about logistics integration such as the study conducted by (Piewthengngaam 2009; Pinmanee 2016; Thongrattana & Perea 2010; Schipmann & Qaim 2010 & Srimanee & Routray, 2012).

The challenges are more serious for developing countries like Ethiopia because of their poor central logistics infrastructure, low quality and difficult availability of cheap transport modes, insufficient technology investment, poor communication methods, lack of information sharing, ineffective use of supply contracts, participants’ unwillingness to share the associated risks and limited sources of capital (CSA, 2011). Particularly the challenges are more serious in Ethiopian textile industries because inefficient utilization of resource, poor productivity, and frequent machine break down, poor quality of materials, excessive inventory, poor plant layout, idle workers, poor scheduling, were a common feature of the industries (CSA, 2011). In addition to the above challenges Ethiopian textile industries face the problems of lack of access to international market information and technology, obsolete product processing facilities, high cost of inputs in the industries, customs clearance delays, shortage of raw material and accessories
lack of supplier-customer relationship and long delays in processing orders on time (Rahel, 2007). So the above stated problems are the major problems of Bahir Dar Textile Share Company because Bahir Dar Textile Share Company is one branch of Ethiopian textile industries. To solve those challenges in locally little study has been conducted by Admaw (2010) the impact of supply chain management practices on competitive positioning of Ethiopian Textile firms. The previous study has been conducted a comprehensive concept of the subject including strategic supplier partnership, internal operations flexibility, customer relationship, degree and quality of information sharing among Ethiopian textile firms. Therefore this study differs from previous study the compressive concept of the subjects including information integration, logistics operation coordination, institutional support and organizational relationship. None of the local studies have focused the effect of logistics integration on distribution performance in Bahir Dar textile Share Company. Therefore this study was interested to investigate the effect of logistics integration on distribution performance in Bahir Dar Textile Share Company.

1.3. Objectives of the Study

1.3.1. General Objective of the Study
The general objective of the study was examine the effect of logistics integration on distribution performance in Bahir Dar Textile Share Company

1.3.2. Specific Objectives of the Study

1. To investigate the effect of information sharing on distribution performance
2. To examine the effect of institutional support on distribution performance
3. To investigate the effect of logistics operations coordination on distribution performance
4. To examine the effect of organizational relationship on distribution performance

1.4. Hypotheses of the Study

H.1 Information sharing has the positive and significant effect on distribution performance.
H.2 Institutional support has the positive and significant effect on distribution performance.
H.3 Logistics operation coordination has the positive and significant effect on distribution performance.
H.4 Organizational relationship has the positive and significant effect on distribution performance.
1.5. Significance of the Study
The findings of the study will help management in industrial firms in understanding the role that logistics integration plays in the distribution performance. By understanding logistics integration, they will be able to effectively implement it for solving the challenges they face through order fulfillment and delivery reliability for improving distribution performance and enhancing flexibility through promotion of knowledge-sharing.

In the academic world, the study will be added to the body of knowledge for future generations and stimulate ideas for further research in different fields. Academicians and researchers will be used the findings of the study for further research in the field of logistics integration especially in determining the effect of logistics integration on distribution performance in different industrial firm. And the benefit of the study to the researcher is to gain depth knowledge about the importance and effect of logistics integration on distribution performance. The key policy makers within the government can also use the findings of the study to set policies that encourage adoption of logistics integration not only Bahir Dar textile Share Company but also in other industrial firm.

1.6. Delimitation of the Study
Logistics integration covers vast areas of managerial activities. However, it is hard and uncontrollable to perform the study in every single area that summarizes logistics integration in terms of time, finance and research manageability. Therefore, the span of the study conceptually delimited to logistics integration on distribution performance. The subject scope of logistics integration of the study was also delimited towards, information sharing, logistics operation coordination, institutional support and organizational relationship. In terms of the organization performance the study delimit only distribution performance. Distribution performance delimited to responsiveness and deliver reliability.

Methodologically, the study was delimited to quantitative, correlation and regression method of analysis and the target population of the study were cover seven departments employees of Bahir Dar Textile Share Company.

Geographically the area of the study was focused on Bahir Dar Textile Share Company. The study focused on only Bahir Dar Textile Share Company because the study of all Ethiopia textile company is located in deferent area one textile company is far from the other textile company so
the study couldn’t cover all areas of each textile company because its constraint of cost, time and consumed large amount of effort so its selected one textile company located in Bhir Dar city.

1.7. Definition of Operational Terms

**Logistics** The efficient transfer of goods from the source of supply through place of manufacture to the point of consumption in a cost-effective way whilst providing an acceptable service to the customer (Rushton, et al., 2006).

**Logistics management** The process of strategically managing the procurement, movement and storage of resources, parts and finished inventory (and the related information flows) through the organization and its marketing channels in such a way that present and future profitability are maximized through the cost-effective fulfillment of orders (Christopher & Juttner, 2000).

**Integration** is a process of redefining and connecting parts of a whole in order to form a new one (Award & Nassar, 2010).

**Logistics integration**; is the close internal and external coordination across the supply chain operations and process under the shared vision and value amongst the participating members (Lu, 2011).

**Distribution**; is the movement of goods and services from the source through a distribution channel right up to the final customer, consumer, or user, and the movements of payment in the opposite direction, right up the original producer or supplier.

**Information integration** refers to a flow between internal organizational function and across partner firms is widely acknowledge as contributor to organizational competitiveness and improve the firm’s ability to perform, particularly when they operate favorable environmental condition (Prajogo & Olhager, 2012).

**Institutional support** refers to a firm’s business decisions depend on various economic, cultural, social and political forces, as well as decisions made by relevant institutes, such as state and local government, social networks and other powerful organizations (Cai et al., 2010).

**Logistics operation coordination** refers to exchanges of information regarding such issues as demand forecasting, material handling and customer service, coordination in their joint activities becomes an important concern with the operation personnel’s interaction with other departments (Gattorna, 1991).

**Organizational relationship** refers to stable interactions and transparent relationships among all supply chain partners (Alfalla-Luque et al., 2013).
Responsiveness (Order fulfillment lead times) is the time interval from the receipt of the order to the delivery of product/service to the customer (Supply Chain Council, 2010).

Delivery reliability (Perfect order fulfillment) refers to the ability to consistently deliver the right product of the right quality and in the right quantity to the right customer (Kocaoglu et al., 2013).

1.8. Organization of the Study

The study was structured into five chapters. Each chapter has its own subunits. The first chapter consists of background of the study, statement of the problem, objectives of the study, hypothesis of the study, significance of the study, delimitation of the study, definition of operational terms, and organization of the study. The second chapter deals with review of related literature it includes; theoretical literature review, empirical literature review, conceptual framework of the study, and literature gap. The third chapter was emphasize research design, the research approach, research paradigm, target population and, sampling method, sample size, data sources and collection techniques, reliability and validity of instruments, research ethics and methods of data analysis and interpretation. Chapter four data presentation, analysis and interpretation consist of descriptive analysis, correlation analysis, regression analysis and discussion of major finding of the research. Finally, the fifth chapter deals with, summary conclusions, recommendations, limitation of the study and recommendations for further research.
CHAPTER TWO
REVIEW OF RELATED LITERATURE

2.1. Definition of Logistics

Logistics is the process of responsible for planning, implementing and monitoring actions for the efficient and effective moving and storage of products including intangible asset and related information from the point of origin to the point of consumption for the purpose of meeting to customer requirements and includes inbound, outbound, internal and external movements (CSCMP, 2013). In a company; logistics is a group of resource that supports the physical movement of merchandise through the supply chain. These groups are: transportation, distribution center operations (inbound transportation, receipt, storage, processing and merchandise delivery to the stores), import, and supplier communications (Tseng et al., 2005). Logistics, when successfully executed, assures that all movements in the supply chain are achieving effectively and products to meet expected quality physically distribute to their desired location (Lummus et al., 2001).

Moreover, logistics is the process of planning, implementing, and controlling procedures for the efficient and effective distribution and depot of goods, services, and related information, from the point of origin to the point of destination. Its main value proposition to get logistics is to assure that customer needs and expectations pertaining to the quality of goods and services are met at all times in a efficiently and effective manner (Mangan et al., 2016).

Successfully implemented logistics enable to predicting customer requirements; facilitate purchasing of the capital, materials, human, technologies, and information necessary to meet those requirements; assist to optimizing the goods- or service-producing network to satisfy customer requests; and provide means for utilizing the network to fulfill customer requests in a timely and cost-effective way (Tilanus, 1997).

2.2. Theoretical Review

The present study which is adopted with the aim of improving logistics integration on distribution performance and comprises key aspects of four extant theories: resource dependence theory (RDT), resource based view (RBV), institutional and SCM theory.
2.2.1. Resource Dependence Theory (RDT)

Resource dependency theory postulates that organizations are dependent on resources provided by others, as well as on other organizations, in order to sustain growth (Pfeffer & Salancik, 2003). In other words, it is practically can’t think for organizations to be fully self-sufficient, as they will always need strategically very critical resources, as well as goods or services supplying by others. Thus, for survival of the business, and especially growth and development, they need to form strategic linkage with outside parties (Heide, 1994). According to RDT, organizations can minimize uncertainly by carefully managing their dependence on environmental factors by exchanging resources (both material and skill-based) with other organizations (Ulrich & Barney, 1984). In the supply chain management context, RDT suggests that the members of organizations should be dependent and coordinate with one another, as this will improve greater higher performance gains in the long run. This type of collaboration is much more beneficial and less risky than pursuing short-term benefits at the expense of others.

In that respect, RDT theory places focus on partners (such as buyers and suppliers) and forging mutually beneficial relationships, with a particular focus on coordination and cooperation among the supply chain partners (Paulraj & Chen 2004; Mc Carthy, Byrne & Mentzer, 2001). Given the above, facts that logistics integration, as a framework, is based on resource dependence theory, as the focus in both is on integration among the supply chain partners aimed at performance effectiveness of the organization.

2.2.2. Resources Based View (RBV)

RBV theory proposes that firms can only outperform their competitors by developing capabilities and resources that are rare, valuable, difficult to imitate and non-substitutable (Schroeder et al. 2002; Barney et al., 2011). The firms operating according to RBV continually explore opportunities for creating new market positions. The RBV concepts are based on the assumption that the competitive advantage lies in the firm’s capabilities, both in terms of tangible and intangible resources (Barney, 1996). Tangible resources refer to physical assets, such as equipment and funds; while intangible resources comprise all benefits company derives from its processes and functions, such as brand, reputation, knowledge and organizational culture. The focus of RBV resources and capabilities is on creating competitive advantage in the chosen market or industry sector (Barney, 1996). Market orientation is, in turn, related to embedding operant resources and resource integration, and aimed at value co-creation. The value co-creation
further produces value constellations, which serve as the key drivers of innovation (Verma & Jayasimha, 2014). This leads to logistics integration and is positively effective on distribution performance (Lin et al., 2006). In sum, adoption of RBV theory in a supply chain network aims to improve distribution performance and create most optimal strategy framework, such as logistics integration that incorporates all tangible and intangible resources, such as information, technology, cooperation, and relationship management.

2.2.3. Institutional Theory

According to the institutional theory, firms embedded in social networks perceive strong pressure to conform to institutional expectations to acquire social legitimacy, as any violations may jeopardize organization performance and existence (Meyer & Rowa 1977; DiMaggio & Powell, 1983). Institutional theory has been very influential in strategic management and innovation. It addresses the behavior of organizations, motivated by forces at play in the wider society. It posits that organizations will seek legitimacy by adhering to the rules and norms that are valued by the society they operate in and aim to attain recognition by certain institutions (DiMaggio & Powell, 1983). The mechanism through which organizations adopt similar procedures is termed institutional isomorphism. Isomorphism is a constraining process that forces one unit in the population to resemble other units exposed to the same set of environmental conditions (Meyer & Rowa, 1977). Institutional isomorphic change is exhibited through three mechanisms, namely coercive, mimetic and normative isomorphism. These institutional forces influence organizational strategy and behavior (DiMaggio & Powell, 1983). Coercive isomorphism refers to the organization’s dependency on other organizations, as well as the prevalent cultural expectations and standards of the society in which the organization functions. It relates to the formal and informal pressures that result from coercive authority. Organizations may directly alter some of their structural features as a result of changing rules imposed by governing authority, such as legislation or anti-pollution laws, employee health and safety codes, or consumer laws (DiMaggio & Powell 1983; Dacin et al., 2007). Another mechanism through which institutional theory is manifested in practice is mimetic isomorphism. It occurs in situations characterized by a high degree of uncertainty, as a powerful driver of imitation (most commonly encountered in technology and management sectors). In particular, ambiguous goals, poorly understood technologies or symbolic uncertainty may cause organizations to model themselves on other organizations. Therefore, attempts to identify and
adopt an organizational structure that can help mitigate ambiguity and uncertainty is often based on similar organizational templates. This mechanism influences the strategic management in that it helps increase efficiency and address extant knowledge gaps in companies. More specifically, it assists in creating new product development strategies that can be applied to increase product usefulness and thus improve market position. Finally, normative isomorphism describes the situation that stems from pressures arising due to increasing professionalization. Normative isomorphism comprises two distinct aspects, namely (1) the grounding of formal education and of legitimacy on cognitive base produced by university specialists, and (2) the influence and growth of professional networks that allow new practices to be diffused rapidly across organizations (Powell & DiMaggio, 2012). According to this classification, any action is a result of shared socialization among professional groups, which are thus forced to create novel strategies and invest greater effort into innovation. Such practices promote normative standards that make professionals comparable, as they can be measured against normatively determined standards, such as professional associations for lawyers, accountants and medical practitioners (DiMaggio & Powell, 1983). Moreover, institutional theory implies that the organizations exert forces on other organizations and the cultural expectations in the society. They do so through technologies and professionalization, following governmental standards and institutional laws to provide management strategy, such as logistics integration, in order to ensure organizational success (Cai et al., 2010).

2.2.4. Supply Chain Management Theory

Thus far, SCM studies have played a key role in corporate efficiency and their potential practical applications have prompted numerous researchers to focus on this field in their work. Academic literature review reveals significant number of studies on SCM theory and practice (Janvier-James, 2012). Consequently, several SCM frameworks emerged, including the supply chain operations reference (SCOR) model, the global supply chain forum (GSCF) framework, collaborative planning, forecasting, and replenishment (CPFR) tool, and the chartered institute of purchasing & supply (CIPS) intelligence. All these approaches are frequently used in an attempt to improve performance (Naslund & Williamson, 2010). SCM has been described as the integration of business processes that span the full spectrum from the raw material extractor to the end user to provide product, information, and services that add value (Richey et al., 2010). In this context, integration is defined as a firm’s objective to attain operational and strategic
efficiencies through collaboration among internal functions and with other firms (Flynn et al., 2010). Thus, in line with these definitions, SCM pertains to the governance of integration that transforms the supply chain into a network in which a series of relationships form to ensure that the end customer receives value from efficient and effective processes that deliver the best products and service to market (Fawcett & Magnan, 2004). Logistics integration is a strategy based on SCM, developed and implemented with the aim to utilize the supply chain to provide effective distribution performance and respond to customer needs. Generally the reasons for the researcher choose these four supply chain management theories: these theories are relevant for the study to limit the scope of the relevant data by focusing on specific variables and defining the specific viewpoint (framework) that the researcher will take in analyzing and understand the data to be gathered, understanding concepts and constructs according to the given definitions, and building knowledge on logistics integration enhancing distribution.

2.3. Empirical Review
2.3.1. Logistics Integration

Logistics integration is a key component of supply chain management and is gaining more attention among both academics and practitioners. In this context, it refers to interlinking major business processes (Chen et al., 2004). Educators and practitioners have addressed the concept of supply chain management as the extension of logistics. However, most have drawn upon the similarity to logistics as an all-encompassing approach to business integration. Supply chain management is the integration of all aspects of business process from end user through suppliers that provides services, as well as products and information that add value for customer (Basnet et al., 2003). However, it is important to recognize that logistics integration includes not only service and goods, but also pertinent information movement. Its success thus contributes to current and future profitability of the firm and helps the processes and standards applied conform to customer requirements. However, some academics view the output of the logistics process solely as creating value for the customer (Simatupang et al., 2002). The most comprehensive evidence of logistics integration as specific strategy followed by manufacturers stems from the fact that firms that are outward-facing are implicitly choosing to support logistics integration that has the highest level of performance improvements (Frohlich & Westbrook, 2001). Logistics integration could be achieved through four dimensions: information sharing, logistics operations
coordination, organizational relationship (Lee 2000 & Alfalla-Luque et al., 2013) and institutional support (Cai et al., 2010).

2.3.1.1. Information sharing
Information sharing, in the context of supply chain and logistics, is based on effective sharing of key information along the supply chain network that is enabled by the use of information technology (Lotfi et al., 2013). Its principal aim is real time information transmission, dissemination and processing, as required by supply chain participants responsible for decision making (Prajogo & Olhager, 2012). Although IT can increase the volume and complexity of supply chain information that needs to be communicated with trading partners, the communication is achieved seamlessly, thus aiding supply chain efficiency. IT systems provide real-time information, order delivery status, inventory and production scheduling and planning, which enables firms to manage their supply chain activities and coordinate tasks assigned to different entities more effectively. In other words, IT helps overcome the limitations of spatial distance and time (Paulraj & Chen, 2007) and hence ensure quick response to customer demand. Thus, appropriate IT capabilities and efficient and timely communication contribute to reliable and timely supply for parties’ in logistics operations to engage in participation, coordination and problem solving activities (Sheu et al.2006; Bosona & Gebresenbet, 2011). Moreover, in Asian countries, such as Vietnam, Thailand, Philippines, Malaysia, and Indonesia, information sharing with supply chain members is directly effect to distribution performance. It was shown to minimize delivery lead times (time from the production initiation to the delivery of the finished product to the customer) and production lead times (time taken for all pre-production processes to be completed), as well as reduce the quantity of purchased material. It also helped increase total inventory turnover (thus increasing the business efficiency) and accuracy of inventory levels (important for ordering new materials and keeping the stocks low) while, reducing machine downtime(determines operational efficiency, as companies that work in, for example, shifts can utilize their fixed resources, such as building premises and production lines, more effectively). All these elements contribute to the greater effectiveness of the entire chain while minimizing the associated costs (Laosirihongthong et al., 2011). In the context of information integration, it is essential to examine each entity’s IT capabilities, i.e., each participant’s ability to implement and use IT assets in combination with other resources to execute business processes. Most widely used IT elements in logistics include EPOS (Electronic Point of Sale),
Business-To-Business (B2B) communication, and B2B private (Ethernet), enterprise resource planning (ERP) systems, and electronic data interchange (EDI), and radio frequency identification (RFID) (Bagchi et al. 2005 & Attaran, 2007). Numerous studies and practical examples indicate that firms with high IT capability have better profit and distribution performance compared to those with inferior IT infrastructure and human capital (Dale, Stoel & Muhanna, 2009). Information sharing has been identified as the key factor in the success of logistical integration in a range of industries, such as manufacturing (Bagchi et al. 2005; Mollenkopf & Dapiran 2005; Sanders & Premus 2005 & Quesada et al., 2008) as it helps in achieving optimal logistics integration, thus effect the distribution performance (i.e. speed of deliveries & responsiveness). The integration of organizations and organizational units should start with making the exchange of information as efficient and as streamlined as possible (Lee 2000; Frohlich & Westbrook, 2001). Information sharing can be achieved across the various functional departments of an organization, as well as between supplier and customer organizations, both of which aim to improve the decision-making processes across the supply chain (Dong et al. 2001; Frohlich & Westbrook, 2001). Thus, if conducted effectively, it can enhance visibility, proper and timely decision making for inventory management, as well as production planning and distribution (Kent & Mentzer, 2003). Extant studies have demonstrated various logistical benefits of information sharing with supply chain partners in the area of inventory management (Cachon & Fisher 2000; Lee et al. 2000 & Yu et al. 2001), such as cost reduction stemming from coordinated, well-informed decision-making which helps improve firm’s reliability (operational speed) and performance flexibility (Swafford et al., 2008). Information sharing with supply chain members is positive effect on distribution performance. It was shown to minimize delivery lead times (time from the production initiation to the delivery of the finished product to the customer) and production lead times (time taken for all pre-production processes to be completed), as well as reduce the quantity of purchased material (Laosirihongthong et al., 2011).

Therefore, a positive effect of information sharing on distribution performance can be proposed.

➢ **Hypothesis 1**: Information sharing has the positive and significant effect on distribution performance
2.3.1.2. Institutional Support

Institutional theory posits that firm’s business decisions depend on various economic, cultural, social and political forces, as well as decisions made by relevant institutes, such as state and local government, social networks and other powerful organizations (Cai et al., 2010). Institutional theory has gain widespread popularity, as a means to explain organizations’ behavior across different countries worldwide. As a result, it is currently recognized, amongst both theorists and industry practitioners, that various social, economic, and political institutional forces derive at least partly from national culture, which may shape the nature and impact of management practices in that country (Wu et al., 2008). Governments often implement policies to induce active collaboration within and across different industry sectors (Cai et al., 2010). Administration policy on infrastructure development can assist to reduce logistics and transportation costs, especially in industrial sector, as the country is still developing and relies heavily on this part of the country economy. When these policies are implemented fully, significant trade barrier reductions will be expected laws and regulations pertaining to infrastructure are drivers of logistics performance, where by government support plays the key role in achieving logistics performance improvements for example, in Indonesia, logistic providers rely on the government to improve and enforce laws and regulations, optimal investment and utilization of infrastructure, advancement of logistic information and communication technology (Lau, 2011). Moreover, financing support that banks can provide through preferential loans and structured repayment systems can help budget-constrained retailers that are under increasing pressure to enhance cash flow during financial crises. It is widely recognized that limited budget obstacle the development of many start-ups and fast-growing companies (Chen & Cai, 2011). However, banks are often reluctant to provide financial services to such companies, as retailers may later divert the funds obtained through bank loan to other riskier projects (Burkart & Ellingsen, 2004). Here, the information refers to the documents and key data, such as invoice number and payer information, passing through supply chain with the goods, in order to facilitate the transaction. In order for all entities in the supply chain to function and collaborate effectively, institutions must provide the necessary supports as well education and training (Habib, 2014). That is why educational institutions now a day’s offer a significant assistance to the supply chain members both in terms of providing extensive literature on relevant topics and actively offering courses, as well through research activities, conferences and seminars. For logistics integration in practice influenced by
the institutional norms (Cai et al., 2010). Historically, government has been playing significant role in creating institutional norms of textile industry that promote logistics integration (Wong & Boon-itt, 2008). The government has been playing significant role in creating institutional norms of manufacturing industry that promote logistics integration (Wong & Boon-itt, 2008). Institutional support is needed for the supply chain partners, if they are to sustain their businesses and remain in competitive market. Many government institutions are now involved in the effort to help companies by providing resources and training aimed at assisting them in improving their performance. Laws and regulations pertaining to infrastructure are drivers of logistics performance, whereby government support plays the key role in achieving logistics performance (Sumantri & Lau, 2011).

Therefore, a positive effect of institutional support on distribution performance can be proposed.

➢ **Hypothesis 2:** Institutional support has the positive and significant effect on distribution performance

2.3.1.3. Logistics Operations Coordination

Collaboration described as the realization of joint actions across companies and departments in order to achieve the same result and meet a common goal as effectively as possible (Simatupang & Sridharan, 2005) can occur in many ways. As the cooperative supply chain can be broadly characterized by its structure vertical, horizontal or lateral cooperation can be achieved in each case, albeit differently. Upright cooperation (which refers to cooperation amongst different chain members at different levels in the distribution process) occurs when two or more organizations that provide different services (e.g. producer, distribution center, logistics service providers, carriers, retailers, etc.) share their responsibilities, performance information, and resources in order to serve the customer in the most optimal and efficient manner (Cruijssen et al., 2007). On the other hand, horizontal cooperation (which implies collaboration amongst entities that provide the same or similar services) is achieved by exploiting and identifying opportunities for sharing resources or dividing responsibilities in order to increase performance and cost-effectiveness of the processes they are in charge of (Cruijssen et al., 2007). Finally, lateral collaboration aims to gain more flexibility by combining and sharing capabilities of companies that are involved in both vertical and horizontal manner. Third-party logistics (TPL) is referred to as logistics outsourcing (Knemeyer et al., 2003) and thus implies relying on external companies to perform logistics functions that have traditionally been performed within a firm (Lieb & Bentz, 2005).
The cooperation between manufacturers and third party logistics companies is expected to result in more standardized services, more segmented markets, as well as more intense competition and various services (Mortensen & Lemoine, 2008).

The logistics services providers propose integrated solutions for the chain, one of which is the logistics process integrator that can act in the following manner: service integrator mixing various logistics offers, internal integrator mobilizing various resources of the firm (different tools, services, geographic localities), and outside integrator capable of coordinating business actors (carriers, other LSPs, information systems providers, etc.) (Fabbe-Costes & Roussat, 2011). Many manufacturing companies have realized the importance of employing TPLs and utilizing their services in strategies aimed at gaining competitive advantage (i.e., better delivery, reduced inventory and lower logistics costs) (Setthakaset & Basnet, 2005).

Distribution center also differ in terms of the activities that can be divided in four categories- order management, transportation, warehousing activities, and value-added logistics (VAL). In this context, order management refers to the responsibilities of the warehouse administrative office, which include taking care of order intakes, forecasting, selection of suppliers and invoicing. In other words, distribution center are more effective when road-center logistics functions are adopted, including road freight transport, road transport, courier pick-up and delivery service, as well as warehouse operations (Chhetri et al., 2014).

Distribution center can provide much higher benefits to companies involved in joint operations, as they can take advantage of distribution center sharing. In addition, they can reduce congestion by decreasing the number of deliveries (as smaller deliveries can be combined and transported in the same vehicle), improve the quality of delivery service to retailers (as more frequent deliveries can be made if several companies use one truck and benefit from available stock at the distribution service), and ameliorate conflicts between in unloading areas and delivery bays (Scott, 2010). As mentioned above, distribution center sharing can reduce the required stock levels, while also avoiding inventory shortages, thus increasing sales opportunities while minimizing chances of lost sales due to product unavailability.

Logistics operation coordination has a positive effect on distribution performance (Bordley et al., 1999). Logistics operations coordination is a synergy based on trust and the dependence between supply chain members. Thus, increases the levels of interaction through communication, regular meetings and other joint activities can improve the level of logistics capabilities that significantly improve the overall performance (Chen et al., 2004). Cooperative logistics are the key to offer
potential to increase profitability or improve the quality of services the firms (Cruijssen et al., 2007). As in the various industry sectors, logistics operations coordination in the transportation can be achieved with TPL and distribution center sharing. Both elements have great influence on the logistics integration, as their correct incorporation can lead to significant value (i.e., improving distribution performance and reducing transaction costs) across the entire chain (Bordley et al., 1999). Extant studies have demonstrated various logistical benefits (Stefansson 2006 & Charanwanitwong, 2012) logistics operation coordination by collaborate with TPLs and distribution center sharing could have a significant effect on the ability to improve distribution performance.

Therefore, a positive effect of logistics operations coordination on distribution performance can be proposed.

➢ **Hypothesis 3:** Logistics operations coordination has the positive and significant effect on distribution performance

2.3.1.4. Organizational Relationship

Organizations endeavor have to achieve competitive advantage through enhanced customer satisfaction, improved supply chain productivity, intensifying competition (Singh et al. 2010), building an effective supply chain team, competing against global supply chains, focusing on core competence (Fawcett & Magan, 2001), and improving access to global markets (Agrawal, 2007). In this context, at rusting and effective inter-organizational relationship refers to stable interactions and transparent relationships between all supply chain partners that entails, among other factors, common visions and objectives, incentive realignment and sharing of skills (Alfalla-Luque et al., 2013). Forging and maintaining long-term relationships is vital in establishing stable links with partners and, in turn, enables and increases mutual trust between producers and customers (Droge et al. 2004 & Bagchi et al., 2005). Creating and maintaining a good quality, gullible and beneficial cooperative relationship is the key for both buyers and suppliers, as it support creating superior customer value, which is significant to a supplier’s long-term survival and success (Woodruff, 1997). The buyers who are satisfied with a firm’s product/service feel that the firm offers them value beyond that other market players provide and are thus more likely to remain loyal and develop long-lasting business relationship with this firm (Anderson & Narus, 1998). Maintaining relationships is important for any organization, thus it is also critical for an industrial buyer, as it improves the synergies among suppliers and buyer’s and
ultimately develops trust, confidence and motivation. The importance of buyer-supplier relationship is essential for improving the performance and market standing of the organization (Mishra, 2011). Sharing skills, knowledge, experiences, ideas and institutional culture is essential in the distribution of the best practices among the various members of the supply chain (Alfalla-Luque et al., 2013). The main dispute the supply chain managers are facing is finding the method to successfully coordinate partner efforts in order to efficiently generate new knowledge and capabilities. However, extended collaboration networks which are the key to exploiting the already developed, yet but scattered knowledge are becoming more important, as the market is becoming more globalized and companies, their partners’ and customers are increasingly spread across different localities (Li et al., 2012). It is widely recognized that knowledge gained through a closer relationship with stakeholders across a network (e.g. suppliers, customers, employees, etc.) can help the firm in its drive for further improvement in its business operations (Bessant et al., 2003). Thus, the knowledge exchange facilitates can markedly improve performance with the network as they help organizations involved learn from each other and benefit from new knowledge developed by other organizations. In this context, intra-organizational knowledge sharing is typically associated with increased cross-functional coordination within a network, and can thus benefit all the members in a supply chain (Christopher & Gaudenzi, 2009). Improving the quality of teamwork with the aid of optimal logistics services along the supply chain and within cross-functional teams is based on the ability to encourage team building that allows for coordination and active cooperation between members of different departments and companies across the supply chain. Cross-functional teambuilding is important for establishing relationships that can assist the supply chain members with different cultures or backgrounds in the cross-functional team to succeed in the implementation of common language. Cross-functional teams can reduce misunderstandings that can potentially arise due to different values, norms, goals or general modes of operation or communication. Cross-functional team members that communicate effectively are able to develop a shared language and shared mental models, resulting in improved project performance and increased effectiveness of all operations within the chain (McDonough Iii, 2000). Organizational relationship is achieved through stable interactions and transparent relationships between the supply chain members and it entails, among other factors, common vision and objectives, as well as sharing of skills, ideas and carefully selected performance measures. When executed well, it can lead to significant
performance improvements (Alfalla-Luque et al. 2013; Kerdpitak & Heuer, 2013). Extant studies have demonstrated various logistical benefits of forging and maintaining long-term relationships is crucial in establishing stable links with partners and, in turn, enables and increases mutual trust, between manufacturers and customers (Droge et al. 2004 & Bagchi et al., 2005). Logistics integration, it is important to integrate different partners of supply chain to share knowledge, skills, and developing long term relationship or partnership in order to improve the responsiveness and reliability through perfect order fulfillment and minimizing order fulfillment lead times (Kerdpitak & Heuer, 2013).

Therefore, a positive effect of organizational relationship on distribution performance can be proposed.

**Hypothesis 4:** Organizational relationship has the positive and significant effect on distribution performance

**2.4. Supply Chain Management and Logistics Studies**

Effective supply chain management and integration in agricultural sector is another logistic impediment to the growth (TDRI 2012). More specifically, previous SCM studies on agricultural sector such as (Piewthengngaam 2009; Thongrattana & Perea 2010; Schipmann & Qaim 2010; Srimanee & Routray, 2012; Pinmanee 2016) were conducted in specific agricultural products and activities. Extensive literature review conducted as a part of the study revealed only five articles focusing on the entire supply chain (see Table 2.1). (All the aforementioned studies have been conducted in the food sector, ranging from single produce such as rice, shrimp, sugar, sweet pepper and egg. Therefore lack of research that explores the effect of logistics integration on distribution performance in the textile industry.

**Table 2.1 Research on Logistics Integration – Literature Sources Published in 2009-2016 Periods**

<table>
<thead>
<tr>
<th>Author</th>
<th>Research summary</th>
<th>Product</th>
<th>Research method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piewthengngaam (2009)</td>
<td>The study explores the concept of cultivation planning and implements it in a mathematical model. Application of crop growth simulation and mathematical modeling to supply chain management in the Thai sugar industry.</td>
<td>Sugar</td>
<td>Analytical</td>
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<tr>
<td>Authors</td>
<td>Summary</td>
<td>Method</td>
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<tr>
<td>Thongrattana &amp; Perea (2010)</td>
<td>For the Thai rice industry, the research identifies perceived uncertainties based on the seven key factors: demand, supply, planning and control, competitor behavior, government policy and climate.</td>
<td>Rice Survey</td>
<td></td>
</tr>
<tr>
<td>Schipmann &amp; Qaim (2010)</td>
<td>This study examines the factors typically affecting farmers’ decisions when attempting to introduce innovation in smallholder Farmers, focusing on adoption of sweet pepper. Factors explored include characteristics of the person responsible for farming decisions, the farm and household where the production takes place, as well as the contextual characteristics.</td>
<td>Sweet pepper Survey</td>
<td></td>
</tr>
<tr>
<td>Srimanee &amp; Routray (2012)</td>
<td>With specific focus on policy impacts and implications, the authors explore the fresh fruit and vegetables marketing chains (FFV) in Thailand that consist of procurement systems and FFV marketing policies.</td>
<td>Fruit and vegetable Survey and observation</td>
<td></td>
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</tbody>
</table>

### 2.5. Distribution Performance

Leenders & Johnson (2008) states that distribution performance is the movement of goods and services from the source through a distribution channel right up to the final customer, consumer, or user, and the movements of payment in the opposite direction, right up the original producer or supplier. Distribution performance is one of logistics performance in the manufacturing sector is measured broadly by the extent to which the organization fulfills the customers and consumer demands by delivering products in the right time right location. The importance and complexity of distribution performance measurement has led to the development of numerous performance measurements such as delivery reliability, lead time (responsiveness), production cycle time, cash-to-cash cycle, cost per shipment and cost per warehouse pick-up, on-time shipments, defective products and inventories, reported in extant literature (Supply-Chain Council, 2004). Therefore the present study was used delivery reliability and lead time (responsiveness), for measuring distribution performance.
2.5.1. Lead Time (responsiveness)

Building a strategy on the basis of reducing the time between customer demands until meeting these demands entails work on the following: forecasting demand system, coordination of work processes, and change organizational layout, and managing the transportation. Different studies were defined time, lead time, and cycle time. Cycle time is the time between one completion jobs or tasks to another, i.e. from starting one process or task to start the same process or task again. Lead time is the time that is required from setting the order by customer to deliver the product or service (company and supplier) including manufacture, transportation, processing, warehousing, and delivering the product or service to the final customer (Gimenez, et al., 2011).

2.5.2. Delivery Reliability

Delivery reliability can be defined as delivery accuracy, delivery performance or on-time delivery. On time delivery also referred to as delivery precision, is one of the most common order-to-delivery performance measurements (Forslund, Jonsson & Matsson, 2008). It determines if a perfect delivery has been achieved or not. The measurement is a driver for customer satisfaction and supply chain excellence (Gunasekaran, Patel & Tirtiroglu, 2001). Delivery performance can be measured according to different dates, such as Delivery-to-request date and delivery-to commit date (Stewart, 1997). The delivery performance deeply relies on the quality of the information exchanged across the distribution channels and the way the information is presented. To be able to achieve high delivery performance are location, delivery channel and vehicle scheduling important factors. To be able to improve delivery performance is a reduction of lead time important (Stewart, 1997).

2.6. Conceptual Framework of the Study

The conceptual framework presented below shows the relationship between the independent variables on the other hand the dependent variable. The framework proposes that logistics integration have an effect on distribution performance both directly and indirectly. Logistics integration is conceptualized as a four-dimensional construct. The four dimensions are information integration, institutional support, logistics operations coordination and Organizational relationship. Logistics integration and distribution performance are concepts that have been operationalized in existing literature. The most reliable evidence of logistics integration as specific strategy followed by manufacturers stems from the fact that firms that are
external-facing are implicitly choosing to improve logistics integration that has the highest level of performance improvements (Frohlich & Westbrook, 2001).

As represent in the model below the study focus in logistics integration has effect on distribution performance of the company. In competitive world firms are seeking new methods of enhance distribution performance (Chen, 2004). Today information technology helps to overcome the limitation of spatial distance and time it ensure fast response to customer demand. Firms have realized appropriate IT capabilities and efficient and timely communication provide to accurate and timely supply for parties in logistics operations to work in participation, collaboration and problem solving activities (Sheu et al., 2006). Logistics integration plays an important role to improve responsiveness and deliver reliability and optimization of performance (Basnet et al., 2003). More over higher level of integration also enhance distribution performance such as lead time execution and enhanced responsiveness (Lambert et al., 1998).

Source: researcher, (2020) by reviewing different literature

Figure 2.1. Conceptual Framework of the Study

According to the above framework, logistics integration dimension represent the independent variable, distribution performance represents the dependent variable.
2.7. Gaps in Literature

There are several studies that have been conducted to analyses the effect of logistics integration on distribution performance. Some studies mainly focused on logistics integration on distribution performance in agriculture sector from framer, wholesaler and retailer (Piewthengngaam 2009; Thongrattana & Perea 2010; Schipmann & Qaim 2010; Srimanee & Routray, 2012; Pinmanee, 2016). However, literatures on the industrial sector logistics integration on distribution performance part, is limited. And other previous study for example Admaw (2010) impact of supply chain management practices on competitive positioning of Ethiopian Textile firms. His study has been conducting comprehensive concept of the subject including strategic supplier partnership, customer relationship, internal operations flexibility and quality of information sharing among Ethiopian textile firms. But, the present study fill the knowledge gap on the industrial sector by examine the effect of logistics integration on distribution performance in a compressive concept of the subject including information integration, institutional support, logistics operation coordination and organizational relationship based on the primary data was collected from representative sample from Bahir Dar Textile Share Company’s employees.
CHAPTER THREE
RESEARCH METHODOLOGY

3.1. Introduction
This chapter outlines the methodologies that would be used in the study. It describes research paradigm, research approach, research design, population and sampling, instruments and data collection technique, reliability and validity of instruments, research ethics and methods of data analysis and interpretation.

3.2. Research Paradigm
According to Mackenzie & Knipe (2006) the term paradigm is used to express a researcher’s “worldview”. This worldview is the perception, or thinking, or school of thought, or set of shared idea, that notice the word or interpretation of research data. Lather (1986) describes, a research paradigm inherently express the researcher’s attitude about the world that he or she believes in. It constitutes the summary of attitude and principles that outline how a researcher views the world and how she/he interprets and acts within that world. It is the lens through which a researcher views at the world. According to Guba and Lincoln (1994) define a research paradigm as a basic set of attitudes or worldview that directs research action or an investigation. Similarly, the gurus of qualitative research, Denzin and Lincoln (2000), define paradigms as social constructions; it focuses on the first values or ultimate guide where the researcher is coming to construct meaning from in a given data. According to Candy (1989) research paradigm can be divided into three main taxonomies, namely positivist, interpretive & pragmatic paradigm.

The positivist paradigm defines a world outlook of a research, which is grounded to what is known in research methods as the scientific method of inquiry. Also formulating that experimentation, observation and reason based on experience ought to be the basis for understanding social behavior, and therefore, the only legitimate means of expansion of knowledge and human understanding (Candy, 1989). It’s a pure form of the scientific method, involves a process of experimentation that is used to assess observations and answer to the questions. Positivist paradigm mostly used to investigate for cause and effect relationships in nature. It is chosen as the preferred worldview for research, which attempt to interpret observations in terms of facts or measurable entities (Fadhel, 2002). Research situated in this paradigm relies on deductive logic, formulation of hypotheses, testing those hypotheses, offering
operational definitions and mathematical equations, calculations, extrapolations and expressions, to derive conclusions. It helps to provide explanations and to make predictions based on measurable outcomes (Cohen, Manion & Morrison, 2000). Finally, this assumption concludes that, the positivist paradigm advocates the use of quantitative research methods as the bedrock for the researcher’s able to be precise in the description of the parameters and coefficients in the data that are gathered, analyzed and interpreted, so as to understand relationships embedded in the data analyses.

The interpretive paradigm/constructivist paradigm; the central power of this paradigm is to understand the individual world of human experience (Guba & Lincoln, 2005). This approach builds an effort to “get into the head of the subjects being studied” so to speak, and to understand and interpret what the subject is judgment or the meaning she/he is making of the topic. Every effort is made to try to understand the opinion of participates being observed, rather than the viewpoint of the observer. Emphasis is placed on understanding the personal and their interpretation of the world around them. Hence, the key ideology of the interpretive paradigm is that reality is socially constructed (Bogdan & Biklen, 1998).

The pragmatic paradigm philosophers who argued that it was not possible to provide the “reality” about the real world solely by virtue of a one scientific method as advocated by the positivist paradigm, nor were it possible to determine social reality as builds under the interpretive paradigm. According to Teddlie & Biesta (2010) pragmatic paradigm suggests that, a mono-pragmatic orientation of research was not good enough. Rather, these philosophers argued that what was needed in a worldview which would provide methods of investigation that are seen to be most suited to studying the phenomenon at hand. So, these philosophies views a research approach that could be more practical and pluralistic approaches that could allow a combination of methods that in conjunction could be light on the actual behavior of participants, the beliefs that stand behind those behaviors and the consequences that are likely to follow from different behaviors.

In this study the researcher chose positivist research philosophy than the other because the researcher believe that the effect of logistics integration on distribution performance can be examined objectively, that knowledge & understanding is gained through the application of reason, upon which generalization can be made from the findings. Furthermore the researcher believes there is one single reality concerning the subject of the study and in order to deploy
logistics integration to determine where changes in that variable cause changes in distribution performance.

3.3. Research Approach
A well starting of a research study means the study has half completed (Burney, 2008). Thus, it is important for the researchers to focus on the best approach to resolving any problems. According to Creswell (2017) divided into three broad categories of research approach they are quantitative, qualitative and mixed approach. Effectively understand thus approach it’s important for to select the final research approach related to the study objective.

In this study the researcher was used quantitative research approach to address the objective of the study examine the effect of logistics integration on distribution performance. Quantitative research involves the collection of data so that information can be quantified and subjected to statistical treatment in order to help to alternate claims (Creswell, 2011) and this is consists with the positivist philosophy adopt for the study. According to Saunders et al. (2012) quantitative research approach is related with general to specific approach, moving from data to theory testing, this is a line the main approach of the study and what is adopt for the study. The quantitative researchers separate and define variables, these variables linked together from a hypothesis, usually begin for data collection, the collected data thereafter is used to test these hypothesis. Further, the characteristic of quantitative research is to test relationship between and causal effect of variables, which are measured numerically and using statistical technique in performing the analysis (Saunders et al., 2012). This is the case in the study; the effect of logistics integration on distribution performance was examined by collecting numeric data and performing statistical analysis for the purpose of theory testing.

3.4. Research Design
Research design is a map that is developed to guide the research (Pandey & Chawla, 2016). It is a plan of investigation so confirm to obtain answers to research questions or problemes. The plan is the complete schem or programme of the research. It inculdes an over view of what the investigater will do from writing hypotesies and their operational implication to the final analysis of data (Scheurich, 2014). It is needed because it facilitets the smooth sailing of the various research operation, there by creating research as efficient as possible yielding maximal information with minimal expendtuire of effort, time and money.
According to purpose, research could be broadly divided into descriptive, exploratory and explanatory.

Descriptive research studies are those studies which are concerned with describing the nature of particular individual, or of a group (Kothari, 2004). A descriptive research is a study that seeks to portray an accurate profile of a person, events or situations. It involves formalizing the study with real structures in order to better describe or present reality about a phenomenon as it is perceived or as it is in reality.

According to Kothari (2004) exploratory research is also expressed as formulating research studies. The major emphasis in such study is on the discovery of new insights. Mostly, it is used when a researcher wants to have a deeper understanding on the area of the study, so the study may new or vague that it becomes critically important to examine unknown variables that may affect a particular phenomenon. It involves the use of methods like searching for library material, asking for expert’s opinion and conducting a focus group interviews (Cooper & Schindler, 2006).

Lastly explanatory research design is used by researcher to test the hypothesis of causal relationship between variables (Kothari, 2004). An explanatory research tries to establish relationship that exists between variables. It aims to identify how one variable affects the other, it seeks to provide an empirical explanation of the causality and causes and effects relationship between one or more variables (Saunders et al. 2007; Malhotra & Birks 2007; Cooper & Schindler, 2006).

Hence for the purpose of the study the researcher was used explanatory research design. Because as the purpose of the study was to test the effect of logistics integration on distribution performance as well as to accept or reject the hypothesis so the researcher was used explanatory or causal in nature.

Time perspective is another important point to be identified in order to plan an investigation. Selecting specific time horizon depends on the research strategy that the researcher follows. In terms of time horizon researcher design can be cross-sectional or longitudinal (Saunders et al., 2000). A cross-sectional study examines a particular phenomena at a specific period of time (Saunders et al., 2007). Malhota & Birks (2007) states that, one sample of population can be taken & studied a particular time as in a single cross-sectional study or two or more samples of a target population could be studied once as in multiple cross-sectional study. This time horizon adopted mostly by academic researchers due to time constraints (Saunders et al., 2000). On the
other hand interms of time horizon,a study may be longitudinal where a particular phenomean is studied at different periods of time. It can take a form of a single longtiudinal time periods or mulit-longitudinal where two or more samples are studied at different period of time (Malhotra & Birks, 2007). The study was used a cross-sectional study in relation to time horizon of the data was collected from employees of Bahir Dar Textile Share Company.

3.5. Population, Sampling Technique and Sample Size

3.5.1. Population

Population is defined as the entire set of individuals or other entities to which study findings are to be generalized (Schutt, 2011). According to Mugenda (2003) defined population as a complete set of individuals, with common characteristics. It is a sum of gathering elements about which the study wishes to make some implications (Cooper& Schindler, 2008). The target population of the study was the seven department employees of the company.

3.5.2. Sampling Technique

Even though logistics integration is important for manufacturing and service companies, the study was focused on manufacturing companies that are believed to have relatively more logistics integration effectively implementation. On the top of that, it is found to be tedious in terms of time and cost to encompass all companies throughout the country. So the study specifically focuses on Bahir Dar Textile Share Company. The company has twelve departments are listed as follows:

Table 3. Total Departments of the Company

<table>
<thead>
<tr>
<th>Name of the company</th>
<th>Serial no</th>
<th>Name of the departments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bahir Dar Textile</td>
<td>1</td>
<td>Finance department</td>
</tr>
<tr>
<td>share company</td>
<td>2</td>
<td>Audit and inspection department</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Marketing and promotion department</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Property administration department</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Purchasing and supply department</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Engineering department</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Production department</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Quality assurance department</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>Human resource administration and development</td>
</tr>
</tbody>
</table>
From the above twelve departments of company the researcher select seven departments by using judgmental or purposive sampling technique those are related to the topic of logistics integration on distribution performance. After the case departments were identified through the use of, judgmental or purposive sampling technique, proportional stratified sampling technique was used for the purpose of collecting the required data associated to the study from Bahir Dar Textile Share Company management and employees.

The target populations for the study were classified into seven strata based on the departments which are expected to directly related with logistics integration and distribution performance of the company. The departments considered as strata, from which data collected were: sales department, Quality Assurance department, store department, marketing and promotion department, purchasing and supply department, finance department and production department,

**Table3. 2 Sampling Stratification**

<table>
<thead>
<tr>
<th>No</th>
<th>Types of Department</th>
<th>No of Employees in each Department</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sales Department</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>Quality Assurance Department</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>3</td>
<td>Warehouse or Store Department</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>4</td>
<td>Marketing and Promotion Department</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>Purchasing and Supply Department</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>Finance Department</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>7</td>
<td>Production Department</td>
<td>266</td>
<td>266</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>7</strong></td>
<td><strong>424</strong></td>
</tr>
</tbody>
</table>

**Source:** survey human resource department, (2020)
3.5.3. Sample Size
Zikmund (2003) stated that the larger sample sizes of the research, the more accurate data are generated. However, due to time and financial limitations and the complexity of the analysis as the number of sample size increase, sample size determination formula developed by Yamane’s (1973) is preferred and used by current researcher as method to determine a sample size. According to Yamane’s, the study was applied a simplified formula to determine the required sample size at 95% confidence level, and allowable error =5% and the total number of employees who work with in target departments were N= 424.

\[ n = \frac{N}{1+N(e)^2} \]

Where: ‘\( n \)’ is the sample size, ‘\( N \)’ is total population and ‘\( e \)’is the level of precision. Substitute numbers in the formula:

\[ n = \frac{424}{1 + 424(0.05)^2} \]

\[ n = 206 \]

After calculating the sample size by substituting the numbers in to Yamane’s formula, the size of the sample is 206. Then the samples were selected from each stratum, according to their proportion to the total population. Since the information required for the study needs different peoples who have knowledge and awareness about logistics integration and distribution performance of the company, stratified sampling technique was used to have the right proportion peoples from every concerned departments. The sample size was allocated each department within the company proportionally as follows.

Table 3. Sample Size Proportion for each Department

<table>
<thead>
<tr>
<th>Name of the departments</th>
<th>No of employees</th>
<th>Sample size proportion</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Department</td>
<td>6</td>
<td>6*206/424 =3</td>
<td>3</td>
</tr>
<tr>
<td>Quality Assurance Department</td>
<td>90</td>
<td>90*206/424 = 44</td>
<td>44</td>
</tr>
<tr>
<td>Warehouse or Store Department</td>
<td>35</td>
<td>35*206/424= 17</td>
<td>17</td>
</tr>
<tr>
<td>Marketing and Promotion</td>
<td>2</td>
<td>2*206/424 =1</td>
<td>1</td>
</tr>
<tr>
<td>Department</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchasing and Supply Department</td>
<td>6</td>
<td>6*206/424= 3</td>
<td>3</td>
</tr>
<tr>
<td>Finance Department</td>
<td>19</td>
<td>19*206/424= 9</td>
<td>9</td>
</tr>
<tr>
<td>Production Department</td>
<td>266</td>
<td>266*206/424= 129</td>
<td>129</td>
</tr>
<tr>
<td>Total</td>
<td>424</td>
<td>206</td>
<td>206</td>
</tr>
</tbody>
</table>
3.6. Source of Data and Data Collection Method / Instruments

3.6.1. Source of Data
According to Zikmund (2003), there are two sources of data i.e. primary data and secondary data. The primary data those which are collected a fresh or the first time, and thus happen to be unique in nature. According to Biggam (2008) adds that primary data is the information that the researcher finds out by him / her regarding to a specific topic. The main advantage of with this type of data is that it is collected with the research’s purpose in mind. It reflects that the information resulting from its better accuracy and resolving specific research issues. On the other hand secondary data are those which have already been collected by someone else and which have already been passed through a statistical process (Kothari, 1990). In this study the researcher was used primary data source.

3.6.2. Instruments and Data Collection Techniques
The essential and the significant part to conduct research is data collection. It is essential that data collected for a research should give an outline of the survey area through which a clear observation can be made to reach a corrective conclusion (Saunders, 2012). Data collection means gathering data and information to addressed basic questions of the research (Zikmund, 2003). In order to verify the investigation and to collect the reliable data, it calls for an appropriate and convenient technique of data collection. Saunders (2003) defines the different types of data collection methods through which data can be collected. Some of the techniques used are observation, interviews and questionnaires. Accordingly in the study, was used a questionnaire data collection technique to collect primary data. Structured questionnaires were distributed for the specified department employees of the case company. The questionnaire include statements under logistics integration and distribution performance (1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree) and measuring using five point Likert scale. Instruments that measure, logistics integration and distribution performance adopts to the organizations.

3.7. Reliability and Validity Instruments

3.7.1. Research Reliability
Reliability refers to whether your data gathering techniques and analytic method would replicate consistent findings if they were repeated on another occasion or if they were replicated by another researcher (Mugenda, 2003). The researcher was used Cronbach alpha to test reliability.
As cited by Zohrabi (2013), one of the main requirements of any research process is the reliability of the data and findings. Reliability deals with the consistency, dependability and reliability of the results obtained from a piece of research.

**Pilot study**: pilot studies are a vital part of survey-based research, as they are conducted prior to commencing the main study, allowing the researcher to test the data collection instrument on a group of respondents drawn from the same population as the individuals that would respond to the main survey. The main aim of pilot studies is identifying problems in the questionnaire instructions or design. Thus, its findings indicate whether the respondents would have any difficulty in understanding the questionnaire due to ambiguous or biased questions (Sekaran, 2003). Pilot study should replicate the main survey exactly, i.e., the respondents should be selected from the target population, yet not take part in the main study, and the same procedures and protocols that will be adopted in the data collection should be followed.

According to Ticehurst and Veal (2000), the purpose of a pilot survey can be summarized as follows:

1) Testing the wording of the questionnaire
2) Assessing the question sequencing
3) Evaluating the questionnaire layout
4) Gaining familiarity with the respondents
5) Testing fieldwork arrangements (if required)
6) Training and evaluating fieldworkers (if required)
7) Estimating the response rate
8) Estimating the interview or questionnaire completion time
9) Testing the data analysis procedures

The pilot group size may range from 25 - 100 participants, depending on the target population that would be included in the main study (Cooper & Schindler, 2006).

For the purpose of the present research, based on the pilot study, 30 respondents includes from company departments such as production, finance, purchasing and supply, quality assurance, store operation, sales and marketing, who were distributed questionnaires on April 22th, 2020.

Two weeks were allocated for the data collection phase of the pilot study, the questionnaires that were returned by May 6th, 2020. During this period, all questionnaires were returned, which corresponded to the response rate of 100%. These questionnaires were subjected to reliability
and validity tests, as well as some basic data analyses. Based on the results obtained, some minor changes (font size, style, and space) were made to the questionnaire format, in order to improve the respondents’ understanding. The pilot study data was analyzed through basic statistical methods using SPSS software version 23. Responses were analyzed in terms of their validity and relevance to the research objectives.

3.7.2. Research Validity

Validity entails to govern whether the research accurately measures that it will be intended or to measure how truth full the research results is. In other words does the research instrument allow you to hit the bull’s eyes of your research objective (Kazemian, 2015). On the other hand, Validity will be achieved by having objective questions including in the questionnaire. This will be achieved by pre testing of the instrument to be used to identify and change any ambiguous or offensive questions and techniques, Mugenda,(2003), as cited by,(Kiprop, 2015). In the study the researcher was addressed the research validity through, formulating objective questions, the review of literature and adopting instruments were used in previous study to measure how truth full the research results are and how the research instruments allow to hit the bull’s eye ; of research objective. Several types of validity tests that can be applied to assess the goodness of measures, including content validity, criterion-related validity, and construct validity (Sekaran, 2003).

Content validity, or face validity, assesses the correspondence between the individual items and the concept through, among other means, ratings by expert judges, and pre-tests (or pilot studies) with multiple sub-populations (Hair et al., 2006). Content validity can be determined by experts that use the questionnaire prior to the main study and point out any deficiencies that can be addressed. In line with this study, the questionnaire was rigorously tested by several academic experts, who confirmed its content validity. In this research, both expert judges and pre-tests strategies were employed. Thus, to test content validity (face validity) all the survey questions were first proofread by target population of the company, whose feedback was used to validate survey content, wording, layout, and sequencing. This also helped estimate the approximate time required to complete the survey (Veal, 2005). This approach is often used, as responses in the pre-test can be evaluated by using item-to-total correlations or contribution to Cronbach’sα (Churchill, 1979).
Construct validity pertains to how well the results obtained from the use of the measure fit the theories that served as a foundation for test design. In other words, construct validity verifies that the instrument reflects the theoretical understanding of the concept (Peter, 1981). Construct validity can be divided into convergent validity and discriminate validity. Convergent validity examines whether the measures of the same construct are highly correlated, while discriminate validity determines whether the measures of a construct are not correlated too highly with other constructs (Sekaran, 2000). In other words, convergent validity indicates that items pertaining to a specific construct should converge, or have a high proportion of variance in common (Hair et al., 2006). In other words, it assesses the degree to which two measures of the same concept are correlated, with high correlation indicating that the measurement item is measuring its intended concept (Hair et al., 2010). Discriminate validity is also used to test construct validity, as this measure is characterized by discriminate validity when it has a low correlation with measures of dissimilar concepts (Zikmund et al., 2010). According to the pertinent literature, the most widely accepted forms of validity are convergent and discriminate validity (Peter, 1981). Construct validity can be established through correlation analysis (convergent and discriminate validity). Construct validity results of these tests are presented in Chapter four.

Criterion-related validity is synonymous with convergent validity (Zikmund et al., 2010), and is confirmed by calculating the relevant statistics. It is used to establish whether the measurement items pertain to the same construct or concept. In this study, in addition to all the aforementioned tests, the items included in the final version of the questionnaire were assessed via criterion-related validity, as was previously done in relevant literature sources presented above.

3.8. Research Ethics

According to Saunder and Thorn (2001) ethics refers to the appropriateness of your behavior in relation to the rights of those who became the subject of your work, or are affected by it. All the research participants included in this study was appropriately informed about the purpose of the research and their willingness and consent is secured before the beginning of distributing questionnaire. Regarding the right to privacy of the respondents, the study maintains all participants has been briefed about the research and joined with their full consent, the confidentiality of the identity of each participant and the researcher will report the findings in complete honesty.
3.9. Method of Data Analysis and Interpretation

The study was used both correlation and regression analyses by using SPSS version 23. In order to analyze the data, the two sets of Statistics were used: Descriptive statistics summarizes and describes quantitative information in the form of frequency distributions and measures of central tendency (mean and standard deviation), whereas inferential statistics was used to determine the effect of a set of independent variables (logistics integration) on dependent variables (distribution performance). The results were reported using tables and diagrams.

3.10. Regression Analysis

The researcher used multiple regression model to link the independent variables to the dependent variable. The following regression equation was used. \[ P = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + e \]

Where: \( a \) = the \( P \) intercept, \( b_1, b_2, b_3, \) and \( b_4 \), are regression coefficient of respective variables; \( e \) is the error term; \( x_1 \) = information sharing; \( x_2 \) = institutional support \( x_3 \) = logistics operation coordination \( x_4 \) = organizational relationship. By applying these statistical tools, the study was pointed up the current distribution performance level of Bahir Dar Textile Share Company from logistics integration perspectives.
CHAPTER FOUR
DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1. Introduction
Under this chapter the analysis and interpretation were carried out based on the data collected through questionnaire from seven departments (i.e. purchasing, sales & marketing, quality assurance, finance, store operations and production) which work along the line of textile Share Company. The data was analyzed using Statistical Package for Social Science (SPSS version.23). Based on the methodologies, research design and tools of the proposal the data was collected from 206 respondents. From the total 206 questionnaire distributed all were returned. Therefore 206 were effectively used for analysis that shows the response rate of 100 percent. This is acceptable response rate based on Fowler (2002) a 75 percent response rate is considered tolerable. Data analysis, discussion and interpretation of the results are presented in the following subheadings: presentation of demographic data and frequency of respondents, analysis of mean, analysis of correlation and regression coefficient.

4.2. Reliability Test
The internal consistency of the instrument was tested using reliability analysis. Chronbanc’s coefficient alpha is an internal consistency estimator where the values exceed 0.60 (Hair, 1995). Therefore, this rule will be the guiding line to measure the internal consistency of data collection instrument to be used, i.e. Questionnaire.

The following table shows the summery of reliabilities of all variables Cronbanc’s Alpha is used. According to George and Mallery (2003), Chronbanc’s Alpha is an indicator of degree of internal consistency of scales. The higher the coefficient the higher degree of consistency denotes; >0.9-Excellent, >0.8-Good, >0.7-Acceptable, >0.6 Questionable, >0.5-Poor, <0.5- Unacceptable. Therefore, as shown in the table below, the result of the reliability test revealed that the items in the questionnaire exhibited Chronbanc’s Alpha rate more than enough to be called consistent or acceptable and it discussed on the table 1 below.
Table 4. Cronbach's alpha of Constructs

<table>
<thead>
<tr>
<th>Construct</th>
<th>Items</th>
<th>Cronbach's</th>
<th>Internal Consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information sharing</td>
<td>4</td>
<td>.714</td>
<td>Acceptable</td>
</tr>
<tr>
<td>Institutional support</td>
<td>4</td>
<td>.706</td>
<td>Acceptable</td>
</tr>
<tr>
<td>Logistic operation coordination</td>
<td>4</td>
<td>.701</td>
<td>Acceptable</td>
</tr>
<tr>
<td>Organizational relationship</td>
<td>4</td>
<td>0.702</td>
<td>Acceptable</td>
</tr>
<tr>
<td>Delivery reliability</td>
<td>4</td>
<td>0.714</td>
<td>Acceptable</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>4</td>
<td>0.705</td>
<td>Acceptable</td>
</tr>
<tr>
<td>Average mean value</td>
<td></td>
<td><strong>0.71</strong></td>
<td><strong>Acceptable</strong></td>
</tr>
</tbody>
</table>

Source: Owen survey data, 2020

4.3. Descriptive Analysis

4.3.1. Demographic Data Presentation and Analysis

Observing the demographic trend or characteristics of the sample population before starting the data analysis is useful to make the analysis more meaningful for the reader. This part of the questionnaire requested limited amount of information related to personal and demographic status of respondents. The purpose of demographic analysis in this research is to describe the characteristics of the sample such as proportion of male and female in the sample, department of respondents, academic qualification of respondents and experience of respondents. Accordingly these variables are summarized and described in tables shown below.

Table 4. 2 Demographic Profile of Respondents

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender of respondent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>94</td>
<td>45.6</td>
<td>45.6</td>
<td>45.6</td>
</tr>
<tr>
<td>Female</td>
<td>112</td>
<td>54.4</td>
<td>54.4</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>206</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Department of respondent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchasing</td>
<td>3</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Finance</td>
<td>9</td>
<td>4.4</td>
<td>4.4</td>
<td>5.9</td>
</tr>
<tr>
<td>Sales &amp; marketing</td>
<td>4</td>
<td>1.9</td>
<td>1.9</td>
<td>7.8</td>
</tr>
<tr>
<td>Store operation</td>
<td>17</td>
<td>8.3</td>
<td>8.3</td>
<td>16.0</td>
</tr>
<tr>
<td>Quality assurance</td>
<td>44</td>
<td>21.4</td>
<td>21.4</td>
<td>37.4</td>
</tr>
<tr>
<td>Qualification of respondent</td>
<td>Production</td>
<td>Total</td>
<td>129</td>
<td>62.6</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------------</td>
<td>-------</td>
<td>-----</td>
<td>------</td>
</tr>
<tr>
<td>G-12</td>
<td></td>
<td></td>
<td>51</td>
<td>24.8</td>
</tr>
<tr>
<td>Certificate</td>
<td></td>
<td></td>
<td>24</td>
<td>11.7</td>
</tr>
<tr>
<td>Diploma</td>
<td></td>
<td></td>
<td>47</td>
<td>22.8</td>
</tr>
<tr>
<td>First degree</td>
<td></td>
<td></td>
<td>71</td>
<td>34.5</td>
</tr>
<tr>
<td>Masters and above</td>
<td></td>
<td></td>
<td>13</td>
<td>6.3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>206</td>
<td>100</td>
</tr>
<tr>
<td>Experience of respondent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;1 year</td>
<td></td>
<td></td>
<td>18</td>
<td>8.7</td>
</tr>
<tr>
<td>1-5 year</td>
<td></td>
<td></td>
<td>57</td>
<td>27.7</td>
</tr>
<tr>
<td>6-10 year</td>
<td></td>
<td></td>
<td>79</td>
<td>38.3</td>
</tr>
<tr>
<td>&gt;10 year</td>
<td></td>
<td></td>
<td>52</td>
<td>25.2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>206</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Own survey result, 2020

As table 4.2 depicts that the gender distribution of respondents in Textile Share Company covers 45.6% of males and 54.4 % of female respectively. This implies that the gender distribution of textile sharing company is dominated by female employees. The respondents were also asked to indicate the departments they had assigned while they are in Textile Share Company and the result implied that, the department of purchasing covers 1.5 percent and store operations 8.3 percent respectively. And also the department of finance counts 4.4 percent, sales and marketing 1.9 percent, quality assurance 21.4 percent, production 62.6 percent. Accordingly, the dep’t of production and quality assurance accommodate large number of employees who work under the line of Textile Share Company. Concomitantly, the results of respondents associated with their educational background show that, 22.8 percent of the respondents have Diploma, 34.5 percent of the respondents are under Graduate, 24.8 percent are G-12, 11.7 percent are certificate, and 6.3 percent are post graduates. This indicates that the majority of respondents are first degree and G-12 completed holders and also the number of diploma holders are considerable figure. This suggests that the respondents provide relevant and accurate information needed for the study on the effect of logistic integration on distribution performance. Irrespective of the high educational levels of the respondents, the researcher finds it necessary to find the specific professional
qualifications of the respondents in order to have a fair view of their capacity to comply with the current practice of logistics integration on distribution performance.

Ultimately, the output in table 4.2 shows that, 8.7 percent of the respondents indicated that they had work experience of less than one year, 27.7 percent of the respondents indicated that they had work experience of 1 to 5 years while 38.3 percent of the respondents said they had experience of 6 to 10 years and also 25.2 percent of the respondents replied that they have worked for more than 10 years. The results indicates that majority of the respondents have an experience in work area between 6 to 10 years which is an indication that they understand the effect of logistics integration on the distribution performance because they had the chance to work in different areas in different positions where it paves a way to analyze the circumstances of different problems. The implication of the result is that most of the respondents are more experienced which dominated the company (6-10years) and they are more cooperative and easily understand the questionnaire which is required to complete by them to provide information. The respondents are aware of the company working system and they gave the correct and accurate information the researcher needed for the study.

4.3.2. Descriptive Analysis of Logistics Integration Dimension and Distribution Performance

The mean or average is a measure of central tendency that offers a general picture of the data without unnecessarily covering one with each of the observations in the data set. The mean of respondents in each dimensions of logistics integration suggest that the average amount that each dimension has positive or negative response of respondents. In this case, the mean of each item together with their respective dimension overall mean/average mean was calculated in order to conclude the overall logistics integration of Textile Share Company. According to Zelalem(2019) the means statistical values of the items were based on the 5 point Likert scale and will be illustrated through the following assumptions: if the mean (M) score is below 2.5 it implies that the respondents disagree with the statement, if the mean score is equal to 2.5 it indicates that the respondents prefer to stay Neutral, and finally if the mean score is above 2.5 it implies that the respondents agree with the statement.

Accordingly, the mean scores have been computed for all the four logistics integration dimensions that includes institutional support, information integration, logistics operation coordination, and organizational relationship and also the dependent variable distribution
performance by equally weighting the mean scores of all the items under each dimension. The average mean result of each logistics integration dimension together with their respective variables was separately presented, analyzed and interpreted as follows.

4.3.2.1. Information sharing

Table 4. 3Mean Value of Information Integration

<table>
<thead>
<tr>
<th>Items</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The company use ICT to help the apparel distribution more visible to know exact customer demand</td>
<td>206</td>
<td>3.15</td>
<td>1.030</td>
</tr>
<tr>
<td>2. The company has appropriate ICT to allows integration of operational functions that support apparel distribution</td>
<td>206</td>
<td>3.09</td>
<td>1.010</td>
</tr>
<tr>
<td>3. Company has timely sharing of information across the members of supply chain</td>
<td>206</td>
<td>3.33</td>
<td>1.039</td>
</tr>
<tr>
<td>4. There is facilitate integration through use of information technology</td>
<td>206</td>
<td>2.32</td>
<td>1.235</td>
</tr>
</tbody>
</table>

Valid N (list wise) 206

Average mean values 2.97

Source: Own survey (2020)

Table 4.3, illustrates responses to the item of information sharing which shows their agreement on the issue of company use ICT to help the apparel distribution more visible to know the exact customer demand, company has appropriate ICT to allows integration of operational functions that support apparel distribution, company has timely sharing of information across the members of supply chain. These items have mean and standard deviation score of (M=3.15, SD=1.03), (M=3.09, SD=1.01) and (M=3.33, SD=1.039) respectively. Also they show complain on the issue of there is facilitate integration through use of information technology with score of (M=2.32, SD=1.235).

As the results acquired from Textile Share Company indicated that, there is strong integration with information sharing effect on distribution performance of the company. The company use
ICT to help the apparel distribution more visible to know the exact customer demand, company has appropriate ICT to allows integration of operational functions that support apparel distribution, company has timely sharing of information across the members of supply chain that were not neglected. However, facilitate integration through use of information technology the variables that have given emphasis. This has an implication that, the company is strong in terms of information sharing can play a great role in enhancing company distribution performance. Moreover, the results obtained depicts that information sharing has a significant influence on distribution performance of the company which aligns with the finding of (Rivard et al., 2006).

4.3.2.2. Institutional Support

<table>
<thead>
<tr>
<th>Items</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. There is good quality roads with in the delivery route</td>
<td>206</td>
<td>3.56</td>
<td>.979</td>
</tr>
<tr>
<td>2. Government supports the company by establishing a new technology</td>
<td>206</td>
<td>2.43</td>
<td>1.168</td>
</tr>
<tr>
<td>3. There is facilitating leases</td>
<td>206</td>
<td>3.76</td>
<td>1.050</td>
</tr>
<tr>
<td>4. Company uses electronic payment method</td>
<td>206</td>
<td>4.03</td>
<td>.939</td>
</tr>
<tr>
<td>Valid N (list wise)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average mean values</td>
<td></td>
<td>3.46</td>
<td></td>
</tr>
</tbody>
</table>

Source: Own survey result (2020)

Institutional support is another core dimension of logistics integration. The preceding table 4.4 pinpoints the mean value of each item related to institutional support with its aggregate average. They show their disagreement on, Government supports the company by establishing a new technology in the road network in order to enable the security resources to control higher traffic risks (M=2.43, SD=1.168). So the company gives emphasis to government support. It shows surprising that, the respondents show their agreement on there is good-quality roads within the delivery route, facilitating leases (i.e. vehicle, warehouse, shipping equipment) with the aim of improving apparel logistics distribution and company uses electronic payment methods with a mean and standard deviation score of (M=3.56, SD=0.979), (M=3.76, SD=1.050) and (M=4.03, SD=0.939) respectively. This has an implication that, the company is good logistics integration
in terms of institutional support can play a great role in enhancing company distribution performance.

4.3.2.3. Logistics Operation Coordination

Table 4.5 Mean Value of Logistics Operation Coordination

<table>
<thead>
<tr>
<th>Items</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. company improve customer satisfaction</td>
<td>206</td>
<td>3.67</td>
<td>2.783</td>
</tr>
<tr>
<td>2. company develop joint transport planning processes for apparel distribution</td>
<td>206</td>
<td>3.32</td>
<td>1.046</td>
</tr>
<tr>
<td>3. company intending to share stock planning functions</td>
<td>206</td>
<td>3.74</td>
<td>.962</td>
</tr>
<tr>
<td>4. there is a full storage facility in apparel distribution</td>
<td>206</td>
<td>3.02</td>
<td>1.239</td>
</tr>
</tbody>
</table>

Valid N (list wise) 206

Average mean values 3.44

Source: Own survey result, 2020

The other critical dimension of logistics integration is the logistics operation coordination of the company. Table 4.5 depicts that the respondents show the company intends to improve customer satisfaction by reducing the distribution costs through collaboration with third party logistics. And develop joint transport planning processes for apparel distribution with other logistics firms a mean score of (M=3.67, SD=2.78) and (M=3.32, SD=1.046) respectively. Consequently, the company intending to share stock planning functions and full storage facility in apparel distribution center/warehouse management a mean and standard deviation score of(M=3.74,SD=0.962) and(M=3.02,SD=1.239) respectively. This has an implication that, the company is strong logistics integration in terms of logistics operation coordination can play a great role in enhancing company distribution performance. These results are in line with studies conducted by (Christopher & Gaudenzi 2009; Shih et al., 2012).
4.3.2.4. Organizational Relationship

Table4. 6 Mean Value of Organizational Relationship

<table>
<thead>
<tr>
<th>Items</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. There is sufficient and up to date knowledge sharing with in staff</td>
<td>206</td>
<td>3.93</td>
<td>.992</td>
</tr>
<tr>
<td>2. Company encouraging joint problem solving in apparel distribution</td>
<td>206</td>
<td>3.99</td>
<td>1.050</td>
</tr>
<tr>
<td>3. Company encouraging staff members to help each other by skill</td>
<td>206</td>
<td>3.99</td>
<td>1.036</td>
</tr>
<tr>
<td>4. Enhancing team works in logistics distribution by hiring skilled employees</td>
<td>3.73</td>
<td>1.219</td>
<td></td>
</tr>
<tr>
<td>Valid N (list wise)</td>
<td>206</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average mean values</td>
<td></td>
<td>3.91</td>
<td></td>
</tr>
</tbody>
</table>

Source: Own survey 2020

As per table 4.6 from the dimensions of organizational relationship respondents agree on the issue of there is sufficient and up to date knowledge sharing with staff, company encourage problem solving in apparel distribution, company encourage staff members to help each other improve their skill and enhancing team works in logistics distribution by hiring skilled employees mean score of (M=3.93, SD=0.992), (M=3.99, SD=1.050), (M=3.99, SD=1.036) and (M=3.73, SD=1.219) respectively. This has an implication that, the company is strong logistics integration in terms of organizational relationship can play a great role in enhancing company distribution performance.

4.3.2.5. Distribution Performance

Table4. 7Mean Value of Distribution Performance

<table>
<thead>
<tr>
<th>Items</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Delivery reliability</td>
<td>206</td>
<td>3.56</td>
<td>.64982</td>
</tr>
<tr>
<td>2. Responsiveness</td>
<td>206</td>
<td>3.70</td>
<td>.74661</td>
</tr>
<tr>
<td>Valid N (list wise)</td>
<td>206</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average mean values</td>
<td></td>
<td>3.63</td>
<td></td>
</tr>
</tbody>
</table>

Source: Own survey result, 2020
As per table 4.7 from the dimensions of distribution performance respondents agree on the issue of there is delivery reliability, responsiveness with mean score of (M=3.56, SD=0.65) and (M=3.7, SD=0.75). This has an implication that, the company has a good distribution performance.

4.4. Correlation Analysis

Under research investigation the expectations to understand concepts are the means and standard deviations of the dependent and independent variables. So that needs to know how one variable is related to another which comes with the concept of correlation. Correlation is the relationship between two variables. So, we would like see the nature, direction, and significance of the bivariate relationship of the variables used in the study. The Bivariate Correlations procedure computes the pair wise associations for a set of variables and displays the results in a matrix. It is useful for determining the strength and direction of the association between two scale and ordinal Bivariate Correlations. As noted above, a Pearson correlation matrix indicates the direction, strength, and significance of the bivariate relationships of all the variables in the study. According to Field (2005) correlation coefficient is a very useful means to summarize the relationship between two variables with a single number that falls between -1 and +1. The general symbol for the correlation coefficient is “r”. So, a perfect positive relationship (r=+1.00) indicates a direct relationship and an “r” of -1.00 indicates a perfect negative relationship.

Hence, in this study Bivariate Pearson Coefficient (r) was used to shows the relationship between the four dimensions logistics integration and distribution performance by using a two-tailed test of statistical significance at the level of 95% significance, P< 0.05. Interpretation of correlation coefficient (r) size is as follows: if the correlation coefficient falls between 0.1 to 0.20, it is slight correlation or small; if it is between 0.20 to 0.40 is low correlation or weak relationship, if it lies between 0.40 to 0.70 moderate; if it falls along 0.70 to 0.90 high correlation or substantial relationship and if it is within 0.90 to 1.00 it is very high correlation or very strong correlation between variables (Burns, 2008).
### Table 4.8 Correlation of Independent Variables with Dependent Variables

<table>
<thead>
<tr>
<th></th>
<th>Distribution Performance</th>
<th>Information Sharing</th>
<th>Institutional Support</th>
<th>Logistics Operation coordination</th>
<th>Organizational relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribution Performance</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>.258**</td>
<td>.323**</td>
<td>.241**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>206</td>
<td>206</td>
<td>206</td>
<td>206</td>
</tr>
<tr>
<td>Information Sharing</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>.287**</td>
<td>.232**</td>
<td>.210**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.001</td>
<td>.002</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>206</td>
<td>206</td>
<td>206</td>
<td></td>
</tr>
<tr>
<td>Institutional Support</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>.245**</td>
<td>.444**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>206</td>
<td>206</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Logistics operation coordination</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>.167*</td>
<td></td>
<td>.017</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>206</td>
<td>206</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational relationship</td>
<td>Pearson Correlation</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td>206</td>
</tr>
</tbody>
</table>

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

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

Table 4.8 shows the correlation coefficient of the four factors measuring logistics integration dimension where all are positively correlated with distribution performance of the company within the range of 0.241 up to 0.444. All are significant at both p<0.05 and p<0.01 level. When
we further look at into each factor with their coefficients which indicates the four independent variables: information sharing (r=0.258), institutional support (r=0.323), Logistics operation coordination (r=0.241) and organizational relationship (r=0.444). All are important determinants of logistics integration and significant to show the association of logistics integration and distribution performance. Regarding the relationship between independent variables, the above correlation table 8 depicts that majority of the independent variables are correlated at P<0.01 and at P<0.05 level of significance. Institutional support dimension shows the first positive and moderate association with organizational relationship with the result of (r=.444, p <0.01). Secondly information sharing has a positive relationship with institutional support and it is statistically significant with a confidence of 95 percent. This is displayed in the table as (r=.287, p <0.05) which actually means there is association between the two variables. This result implied the two variables are weak related with a confidence of 95%. The third positively correlated dimensions are institutional support and logistics operation coordination with the value of (r=0.245, p <0.01) this implies there is weak association between the two variables. There is slight significant association between logistic operation coordination and organizational relationship (r=.167, p <0.01).

4.5. Regression Analysis
Regression analysis is a way of predicting an outcome variable from one predictor variable (simple regression) or several predictor variables (multiple regressions) (Andy field, 2009). The model of regression shows how much of the variance in the measure of logistics integration is illustrated by the underlying dimensions of predictors of logistics integration model. If the VIF values of independent variables are beyond 10, then it is suggested that further investigation is required (Robert, 2006). So the model there is no Multicollinearity problem, because VIF of the model approaches to 1. The value of VIF ranges between 1.100 and 1.342. Tolerance value is an indication of the percentage of variance in the predictor that cannot be accounted for by the other predictors implying the fact that very small values indicate overlap or sharing of predictive power. In this model the tolerance of the variables ranges between 0.745 and 0.909.
Table 4. 9 Multicollinearity Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Collinearity Statistics</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tolerance</td>
<td>VIF</td>
<td></td>
</tr>
<tr>
<td>1 Information sharing</td>
<td>.883</td>
<td>1.133</td>
<td></td>
</tr>
<tr>
<td>Institutional support</td>
<td>.745</td>
<td>1.342</td>
<td></td>
</tr>
<tr>
<td>Logistics operation</td>
<td>.909</td>
<td>1.100</td>
<td></td>
</tr>
<tr>
<td>coordination</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational</td>
<td>.793</td>
<td>1.261</td>
<td></td>
</tr>
<tr>
<td>relationship</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Distribution performance

Source: own survey result, 2020

Based on this figure it is possible to conclude that there is no multicollinearity effect and the inter relationships among independent variables doesn’t cause concern. Therefore as the indication of statistics that multicollinearity is not the problem of the study.

**Linearity Test of Independent Variables**

Linearity defines the dependent variable as a linear function of the predictor (independent) variables (Darlington, 1968). According to Bedru & Seid (2005) the model should be linear in the parameters regardless of whether the explanatory and the dependent variables are linear or not. This is because the difficulty to estimate the parameters if they are non-liner and not known their value given with data of both dependent and independent variable. Plot the standardized residuals against the standardized predicted values to check for linearity and equality of variances. From the diagram below the data distributed without any increment or decrement. This indicates there is linearity between the dependent and independent variables.
Figure 4.1 Tests of Linearity

Test of Homoscedasticity of Independent Variables

According to Tabachnick & Fidell, (2013) homoscedastic assumption tells that the variance remains constant for all observations. For each value of the predictors the variance of the error term should be constant. But there are many situations in which this assumption may not hold. So, plot the standardized residuals against the standardized predicted values to check for linearity and equality of variances. For example, the variance of the error term may increase or decrease. Based on the graph below it can be concluded that there is no Heteroscedasticity problem the point distributes randomly and no increment or decrement behaviors.
The variables in the multiple linear regression models must follow the normal distribution. To check the normality of variables which is incorporated in the multiple linear regression model results was shown in the following diagram.

**Figure 4.2 Test of Homoscedasticity**

**Normality Assumption**

The variables in the multiple linear regression models must follow the normal distribution. To check the normality of variables which is incorporated in the multiple linear regression model results was shown in the following diagram.
Figure 4.3 Tests of Normality

From the diagram above the points are not more far from the line and from the curve of histogram. This indicates the normality of the data by using histogram.

Table 4. 10 Model Summary

Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.8102a</td>
<td>.7401</td>
<td>.723</td>
<td>.32183</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), organizational relationship, logistics operation coordination, information sharing, institutional support

b. Dependent Variable: Distribution performance

The model summary displays the significance and percentage of variation in logistics integration which is caused by independent variables. Multiple correlations R of +0.812 represent the combined correlation of all the independent variables. Adjusted R square tells us that 72.3% of the variation in logistics integration can be explained by variation in the four independent variables taken together. This leaves 27.7% unexplained.

Table 4. 11 ANOVAa

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>18.442</td>
<td>4</td>
<td>4.610</td>
<td>16.931</td>
<td>.000b</td>
</tr>
<tr>
<td>Residual</td>
<td>54.734</td>
<td>201</td>
<td>.272</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>73.176</td>
<td>205</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Distribution performance

b. Predictors: (Constant), organizational relationship, logistics operations coordination, information sharing, institutional support

Source: Own survey result, 2020
In the ANOVA sub table we have the F value of 16.931 which is significant with p =0.000 which is less than 0.05. This informs us that the some independent variables taken together as a set are significantly related to the dependent variable. In order to see the contribution of factors that affect logistics integration, regression analysis of distribution performance were employed. Table 12, provides the result of multiple regression analysis beta coefficient and significance.

**Table 4. 12 Coefficients**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>1.626</td>
<td>.256</td>
<td>6.348</td>
<td>.000</td>
</tr>
<tr>
<td>Information sharing</td>
<td>.114</td>
<td>.059</td>
<td>.125</td>
<td>1.932</td>
</tr>
<tr>
<td>Institutional support</td>
<td>.086</td>
<td>.062</td>
<td>.098</td>
<td>1.392</td>
</tr>
<tr>
<td>Logistics operation coordination</td>
<td>.092</td>
<td>.046</td>
<td>.129</td>
<td>2.014</td>
</tr>
<tr>
<td>Organizational relationship</td>
<td>.249</td>
<td>.048</td>
<td>.353</td>
<td>5.153</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Distribution performance

Source: Own survey result, 2020

The unstandardize beta value shows the number of standard deviations that the outcome will change as a result of one standard deviation change in predictor. The standard deviation units are directly comparable; therefore, they provide a better insight in to the importance of a predictor in the model. The large value of beta coefficient in an independent variable has the more important determinant in predicting the dependent variable. The unstandardized beta value for information sharing, institutional support, logistics operation coordination and organizational relationship are 0.114, 0.086, 0.092 and 0.249 respectively.

**The final model is Y= 1.626+ 0.114X1+ 0.086X2+ 0.092X3+0.249X4 +ε**

The coefficient table depicts that the significant regression coefficients of logistics operation coordination and organizational relationship were, significant at p=0.05. But information sharing and institutional support are not significant. This significance level tells us that those variables uniquely contribute to the regression equation thereby making a significant contribution to the
prediction. Since, two coefficients of predictor variables are logistics operation coordination and organizational relationship statistically significant so the hypothesis related to these dimensions \( H_0 \) is reject (P<0.05), information sharing and institutional support are statistically not significant \( H_0 \) is fail to reject (P>0.05).

4.6. Test of Hypothesis and Discussions of Major Findings

\( H_0 \): information sharing has no significance effect on distribution performance

H0: fail to Reject \( \beta=0.114 \) \quad p>0.05

The findings of hypothesis pointed out that information sharing, statistically has no a significant effect on distribution performance, since (Beta= 0.114,(P>0.05).But information sharing has significant effect on distribution performance from previous studies result of Beta= 0.798, \( p < 0.05 \) (Pinmanee, 2016).

\( H_0 \). Institutional support has no significance effect on the distribution performance

H0: fail to Reject=0.086 \quad p>0.05

The findings of hypothesis pointed out that institutional support, statistically has no significant effect on distribution performance, since (Beta= 0.086,(P>0.05).But institutional support has significant effect on distribution performance from previous studies result of Beta = 0.801, \( p < 0.05 \) (Pinmanee, 2016).

\( H_0 \). Logistics operation coordination has no significance effect on distribution performance

H0: Reject \( \beta=0.092 \) \quad p<0.05

The findings of hypothesis pointed out that logistics operation coordination, statistically a positive and significant effect on distribution performance, since (Beta= 0.092, (P<0.05). The result was supported by prior research conducted by Vereecke et al. (2008); they suggested that firms share distribution centers with other firms. In particular, the authors indicated that sharing order management, transportation, warehousing activities and value-added logistics is essential for enhancing the distribution performance. Logistics operations coordination refers to the cooperation in the context of logistic operations between firms and logistic providers/other firms. When executed correctly, it is expected to result in more standardized services, more segmented markets, as well as more intense competition, as the products and services provided can be more versatile, efficient and cost-effective (Mortensen & Lemoine, 2008). In this work, the strategy for achieving optimal logistics operations coordination was based on the RDT, RBV, and SCM theories.
H0: organizational relationship has no significance effect on distribution performance.

H0: Reject $\beta = 0.249$ p<0.05

The findings of hypothesis pointed out that organizational relationship, statistically a positive and significant effect on distribution performance, since ($\beta = 0.249$, P<0.05). The result was supported by prior research conducted by (Shi and Liao, 2013). These authors indicated that creating teamwork along the supply chain and cross-functional teams can improve performance through increased competency, skill development, improved communication, managing diversity, and greater team synergy. This finding is consistent with those reported in the study of Kwon (2004). As noted by these authors, firms create trust through forging and maintaining long-term relationships among supply chain partners. In particular, effective logistic delivery is achieved when they share confidential information, keep promises and respect agreements. This level of trust helps firms maintain good working relationships with business partners, thus ensuring effective performance in the long-term. Organizational relationship is an important aspect of any business operation, as being able to establish trust, stable interactions and transparent relationships among all supply chain partners is crucial for the performance of the entire chain. In particular, this pertains to maintaining long-term relationships, creating teamwork, and sharing of knowledge, skills and ideas based on the RDT, RBV, and SCM theories.
CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction
This chapter presents summary, conclusions, recommendations, limitation of the study and areas for further research

5.2. Summary of Findings
The study objective was to examine the relationship among information sharing, logistics operations coordination, organizational relationships, institutional support, and distribution Performance measurement (as indicated by perfect order fulfillment and order fulfillment lead times), aiming to identify the organizational changes and strategies for improving the distribution performance in Bahir Dar Textile Share Company. In order to meet these objectives, a research framework was developed based on the following six variables (constructs) obtained from extant literature and theory. The framework consists of four independent and two dependent variables (see Figure 2.1). The independent variables are: (1) information sharing (based on RDT, RBV, and SCM), (2) logistics operations coordination (based on RDT, RBV, and SCM), (3) organizational relationships (RDT, RBV, and SCM), and (4) institutional support (based on RDT, and institutional theory). The dependent variables consist of (1) delivery reliability, and (2) responsiveness. These constructs were utilized in the development of the final model, which is analytically proven to provide the best fit to the data. This has been ascertained by developing multiple linear regression model that has been tested as a part of this research. In addition, the final model yielded results that were aligned with the theories underpinning this research. And the study to achieve these objectives, primary data was collected from the employees of the company and to analysis the data quantitative approach was used. The results of the study are discussed as follows:

The analysis result depicts that; the first dimension of logistics integration is information sharing the average mean score of 2.97. Therefore the result is under the category of agreement. So as the results indicated that, there is strong information sharing within the company. But under each statements of this dimension ,the respondents they show disagreement on the issue of there is facilitate integration through use of information technology with mean score of (M=2.32, S D=1.235).
The correlation result between, information sharing and distribution performance showed that there is positive correlation with a Pearson coefficient of value of (r=0.258, p <0.05). Regarding the relationship between independent variables information sharing has a positive relationship with logistics operation coordination, it is statistically significant with a confidence of 95 percent (r=0.232, p <0.05) which actually means there is significant correlation between the two variables. This finding is in line with the findings reported by Olorunniwo&Li (2010), who noted that firms’ ability to share information is significantly and positively related to the extent of their collaboration. Information sharing has a positive relationship with organizational relationship, it is statistically significant with a confidence of 95 percent (r=0.210, p <0.05) which actually means there is significant correlation between the two variables. This result confirms the findings reported by Cambra-Fierro and Polo-Redondo (2011), who indicated that communication is significantly and positively related to the level of trust among business partners. Besides, to correlation the findings of hypothesis pointed out that information sharing, statistically has no significant effect on distribution performance, since (Beta= 0.114, (P>0.05). But information sharing has significant effect on distribution performance from previous studies result of Beta= 0.798, p < 0.05 (Pinmanee, 2016).

The analysis result depicts that; the second dimension of logistics integration is institutional support the average mean score of 3.46. Therefore the result is under the category of agreement. This has an implication that, the company is strong logistics integration in terms of institutional support can play a great role in enhancing company distribution performance. But under each statements of this dimension, the respondents they show disagreement on the issue of Government supports the company by establishing a new technology in the road network in order to enable the security resources to control higher traffic risks with mean score of (M=2.43, S D=1.168).

The correlation result between, institutional support and distribution performance showed that there is positive correlation with a Pearson coefficient of value of(r= 0.323, p <0.05).The result was supported by prior research conducted by (Gregory, 2008) and institutional theory. Regarding the relationship between independent variables institutional support has a positive relationship with organizational relationship, it is statistically significant with a confidence of 95 percent (r=0.444, p <0.05) which actually means there is significant correlation between the two variables. The finding of the study conducted by Lutz and Birou (2013) provide support for this
result, as the authors indicated that educational institutions providing programs for cross-functional coordination can assist the chain partners in developing skills necessary for creating teamwork. Institutional support has a positive relationship with information integration, it is statistically significant with a confidence of 95 percent (r=0.287, p <0.05) which actually means there is significant correlation between the two variables. This finding reported by Silvestro & Lustrato (2014), indicating that the role of banks is significantly and positively related to the extent of financial information flow in the supply chain. And institutional support has a positive relationship with logistics operation coordination, it is statistically significant with a confidence of 95 percent (r=0.245, p <0.05) this is in keeping with the conclusions of Silvestro and Lustrato (2014), whose study revealed that banks play a significant role in the coordination of financial flows among business partners.

Besides, to correlation the findings of hypothesis pointed out that institutional support, statistically has no significant effect on distribution performance, since (Beta= 0.086,(P>0.05).But institutional support has significant effect on distribution performance from previous studies result of Beta = 0.801, p < 0.05 (Pinmanee, 2016).

The analysis result depicts that; the third dimension of logistics integration is logistics operation coordination the average mean score of 3.44. Therefore the result is under the category of agreement. This has an implication that, the company is strong logistics integration in terms of logistics operation coordination can play a great role in enhancing company distribution performance. The correlation result between, logistics operation coordination and distribution performance showed that there is positive correlation with a Pearson coefficient of value of(r= 0.241p <0.05). Regarding the relationship between independent variables logistics operation coordination has a positive relationship with organizational relationship, it is statistically significant with a confidence of 95 percent (r=0.167, p <0.05) which actually means there is significant correlation between the two variables. This result confirms the findings of the study conducted by CambraFierro and Polo-Redondo (2011), whereby coordination was significantly and positively related to the level of trust among business partners.

Similarly, the findings of hypothesis pointed out that logistics operation coordination, statistically a positive and significant effect on distribution performance, since (Beta= 0.092, (P<0.05). The result was supported by prior research conducted by (Vereecke et al., 2008).
The analysis result depicts that; the last dimension of logistics integration is organizational relationship the highest average mean value from other constructs 3.91. Therefore the result is under the category of agreement. This has an implication that, the company is strong logistics integration in terms of organizational relationship can play a great role in enhancing company distribution performance.

The correlation result between organizational relationship and distribution performance showed that there is positive correlation with a Pearson coefficient of value of \( r= 0.444 \ p <0.05 \). Regarding the relationship between independent variables organizational relationship has a positive relationship with information integration, it is statistically significant with a confidence of 95 percent \( r=0.210, \ p <0.05 \) which actually means there is significant correlation between the two variables.

Similarly, the findings of hypothesis pointed out that organizational relationship, statistically a positive and significant effect on distribution performance, since \( \text{Beta}= 0.249, \ p<0.05 \). The result was supported by prior research conducted by (Shi and Liao, 2013).

Generally the findings of the study from the descriptive analysis the average mean value of all dimensions of logistics integration and distribution performance above the acceptance range of Likert scale 2.5. The correlation finding of all dimensions of logistics integration, have a positive and significant relationship with distribution performance. The hypothesis finding of logistics integration dimensions, information sharing and institutional support has no a positive and significant effect on distribution performance. Whereas, logistics operation coordination and organizational relationship have a positive and significant, effect on distribution performance of the company.
5.3. Conclusions
From the descriptive statistics analysis result of the dimensions of logistics integration and distribution performance in the company achieved a composite mean score above the average rate 2.5. This shows that as far as the perception of the respondents concern the company is currently good logistics integration and distribution performance. Under dimensions of logistics integration, organizational relationship the highest average mean value from other constructs. As result the company has strong logistics integration in terms of organizational relationship can play a great role in enhancing company distribution performance.
The research concluded as there is a positive relationship between logistics integration dimension and distribution performance in company. And also regarding the relationship between independent variables, all independent variables are associated each other. The multiple regression results of beta value shows that organizational relationship has the highest effect on distribution performance than other variables.
Generally researcher concluded as the result of the study pointed that logistics operation coordination and organizational relationship were able to significant effect distribution performance of the company where as information sharing and institutional support have a positive insignificant effect on distribution performance of the company.
5.4. Recommendations

Based on the study research findings, the researcher recommends the following:

- In the study, infer from the results of mean analysis recommended as, from information sharing the issues of facilitate integration through use of information technology is poor in the company. So the company should give emphasis the use of information technology to facilitate integration, because the company benefits on time sharing of information with supply chain partners and it minimize information distortions within the company.

- From results of mean analysis recommended as, from institutional support the issues of Government supports the company by establishing a new technology in the road network in order to enable the security resources to control higher traffic risks is weak . So the government should enhance supporting the company by expanding new technology in the road network to secure resource and minimize high traffic risk.

- In order to improve the logistics operation coordination, the company needs to create collaboration and joint actions across companies and departments in order to achieve the same result and common goals. So the company should work coordinately with logistics services providers and third party logistics for improve distribution performance of the company.

- Without the organizational relationship the company, it is impossible to compete in the national and global market. So the company should have to give a critical emphasis to organizational relationship because the company benefits of forging and maintaining long-term relationships with partners and increases mutual trust, between company and customers.

- Finally the researcher recommends that even if the company has not performing effectively all logistics integration dimensions, the company has good information sharing and institutional support. So the company should maintain the sustainability of these two logistics integration dimensions.
5.5. Limitation of the Study

The findings of this study are significant for academic researchers and practitioners in logistics supply chain management. However, the study is subject to three key limitations that need to be borne in mind when interpreting its findings.

The first limitation of the study has low generalizability due to its case area is limited only on Bahir Dar Textile Share Company. As it was not assessed for other Textile companies in Ethiopia, so, it is difficult to generalize the finding at national level.

The second limitation of the study was conceptually limited only on the following logistics integration variables and distribution performance, such as information integration, institutional support, logistics operation coordination and organizational relationship and distribution performance measurements the study only delivery reliability and responsiveness. So, the study is not incorporated with other variables of distribution performance pertains to many other aspects, such as production cycle time and cash-to-cash cycle, cost per shipment and cost per warehouse pick-up, on-time shipments, defective products and inventories, among other factors reported in extant literature (Supply-Chain Council, 2004).

Thirdly the study also has methodological limitation because, under this study only close ended questionnaires data collection techniques were employed and the researcher did not use other data collection techniques such as FGD, Panel, interviews etc. So, it may have an influence on the data obtained because close ended questionnaires are mostly limited alternatives which may limit responses. The reason for using these methods of data collection is respondents would not have enough time to respond open ended questionnaires.

5.6. Recommendation for Future Studies

In future research, this framework can be adopted in other industries, as it might yield different outcomes with respect to its ability to enhance distribution performance. Moreover, the framework of this study consisted of four constructs, each of which included several significant dimensions that were deemed capable of improving distribution performance.

In future studies in this field, additional factors related to distribution performance could be tested, in order to assess their significance. If proven relevant, such factors could help develop new strategies for improving distribution performance. In addition, other factors (such as, for example, demographic profiles of the respondents) could be examined in relation to the survey responses provided, as this could assist in establishing any effects of these variables on the
significance participants assign to various aspects of logistics integration. As this study aimed to examine the effect of logistics integration on distribution performance, so the effects of respondents’ demographic background were outside the scope of the investigation. Therefore future studies could expand on this research by assessing the potential influence of the respondent characteristics on the distribution performance.
References


Morris, M., & Barnes, J. (2009). Globalization, the changed global dynamics of the clothing and textile value chains and the impact on Sub-Saharan Africa.


APPENDIX

BAHIR DAR UNIVERSITY
College of Business and Economics
Department of Logistics and Supply Chain Management

Effect of Logistics Integration on Distribution Performance in Bahir Dar Textile Share Company

Questionnaire on: effect of logistics integration on distribution performance

Questionnaires to be filled by employees of Bahir Dar Textile Share Company

Greetings! My name is Mengesha Dagnew from Bahir Dar University College of Business and Economics from the department of logistics and supply chain management. I am conducting a research study on the effect of logistics integration on distribution performance.

Dear respondent, first I want to put my gratitude for your time in responding to the research questions provided below. The response you provide me gives a critical input to my research. You have been identified as one of the respondents for this study and you are kindly requested to fill the questionnaire. Information given will be held with confidentiality and will be used purely for research purposes.

Instruction: You are not expected to write your name and I kindly request you to respond to each item of the question very carefully. Please fill the following listed questions frankly and honestly by making tick “√” symbol in the box that corresponds to your answers. Dear respondent to fill all this questions take only 20 minutes.
PART ONE: Demographic Characteristics

1. Gender
   1) Male □
   2) Female □

2. In which department do you belong?
   1) Purchasing and supply □
   2) Finance □
   3) Sales and Marketing □
   4) Store operation □
   5) Quality assurance □
   6) Production □

3. Educational qualification:
   1) G-12 completed □
   2) Certificate □
   3) Diploma □
   4) First degree □
   5) Masters and above □

4. Year of work experience in the company:
   1) Less than 1 year □
   2) 1-5 year □
   3) 6-10 year □
   4) More than 10 years □
The key factors influencing logistics integration in Bahir Dar textile Share Company

The following statements relate to the effect of logistics integration on distribution performance in case of Bahir Dar Textile Share Company. Follow the instructions given for your responses.

Please tick mark the appropriate box against each statement according to the degree of agreement on the basis of a given scale (1=strongly disagree; 2=disagree; 3=neutral; 4=agree; 5=strongly agree)

**PART TWO: Information sharing**

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<tr>
<td>5. The company use ICT to help the apparel distribution more visible to know exact customer demand</td>
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<td>6. The company has appropriate ICT to allows integration of operational functions that support apparel distribution</td>
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<td>7. Company has timely sharing of information across the members of supply chain</td>
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<td>8. There is facilitate integration through use of information technology</td>
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**PART THREE: Institutional support**

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<td>9. There is good-quality roads within the delivery route</td>
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<td>10. Government supports the company by establishing a new technology in the road network in order to enable the security resources to control higher traffic risks.</td>
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<td>11. There is facilitating leases (i.e. vehicle, warehouse, shipping equipment) with the aim of improving apparel logistic distribution</td>
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<td>12. The company uses electronic payment methods (e.g., online banking &amp; electronic payment systems).</td>
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PART FOUR: Logistics operation coordination

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<td>13</td>
<td>The company intends to improve customer satisfaction by reducing the distribution costs through collaboration with third party logistics.</td>
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<td>14</td>
<td>The company intending to develop joint transport planning processes for apparel distribution with other logistics firms</td>
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<td>15</td>
<td>The company intending to share stock planning functions (e.g. calculation of quantities, stock capacity, etc.) in apparel distribution through warehouse management.</td>
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<td>16</td>
<td>There is a full storage facility in apparel distribution center/warehouse management.</td>
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PART FIVE: Organizational relationship

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<td>17</td>
<td>There is sufficient and up-to-date knowledge sharing with your employee/staff.</td>
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<td>18</td>
<td>Company encouraging joint problem-solving in apparel distribution.</td>
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<td>19</td>
<td>Company encouraging staff members to help each other to improve their skills and to develop distribution performances.</td>
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<td>20</td>
<td>The company enhancing team works in logistic distribution by hiring skilled employees</td>
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PART SIX
Driving factors for distribution performance through delivery reliability, and responsiveness

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<tr>
<td><strong>Delivery reliability</strong></td>
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<td>21</td>
<td>Company has better relationship with logistics provider to deliver right products</td>
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<td>22</td>
<td>Logistic provider were capable delivery of product to the right customers</td>
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<td>23</td>
<td>Company develops team work and trust with logistics provider to deliver right quantity</td>
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<td>24</td>
<td>Company fulfill resources to help logistics provider for performing delivery reliability</td>
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<td><strong>Responsiveness</strong></td>
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<td>25</td>
<td>Company has better integration with employees to reduce lead time</td>
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<td>26</td>
<td>The company has timely sharing of information with cross functional team to facilitate responsiveness</td>
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<td>27</td>
<td>The company has better integration with supply chain partners to reduce the time from receipts of customer order to delivery</td>
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<tr>
<td>28</td>
<td>The company gives training to staff members to minimize the time from receipt of customer order to delivery</td>
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Thank you very much for your assistance.