Effect of Purchasing through Third Party of Yarn on Logistics Performance in the Weaving Sector of Pakistan

Waleed Tariq Butt

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A thesis submitted to NUST Business School for the degree of Master of Science in Logistics and Supply Chain Management

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Thesis Acceptance Certificate

It is certified that final copy of MS LSCM thesis written by Mr. Waleed Tariq Butt registration No.238865 of MS Logistics & Supply Chain Management has been vetted by undersigned, found complete in all aspects as per NUST Statutes/Regulations/MS Policy, is free of plagiarism, errors, and mistakes and is accepted as fulfilment for award of MS degree. It is further certified that necessary amendments as pointed out by GEC members and foreign/local evaluators of the scholar have also been incorporated in the said thesis.

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Declaration

This thesis is a presentation of my original research work. Wherever contributions of others are involved, every effort is made to indicate this clearly, with due reference to the literature, and acknowledgment of collaborative research and discussions. I hereby state that no portion of the work referred to in this dissertation has been submitted in support of an application for another degree or qualification of this or any other university or another institute of learning.

Student's Name: *Waleed Tariq Butt*

Signature: Waleed Tariq Butt

Acknowledgment

I would like to thank my thesis supervisor Dr. Waqas Ahmed for his constant guidance and support. I would also like to thank the Operations and Supply Chain Management faculty for making the master's program an academically enriching experience.

Lastly, I am extremely thankful to my family for the much-needed encouragement in all of my endeavors.

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List of Abbreviations

Phrase	Abbreviation
Perfect Order Fulfilment of Supplier	POF
Flexibility of Supplier	FL
Sourcing Cost	SC
Purchasing Lead Time	LT
External Information Sharing	IS
Gross Domestic Product	GDP

Abstract

In today's world as competition has increased, so has the process of purchasing through the third party. Businesses have recently seemed to consider purchasing as a strategic tool to help achieve business objectives. This phenomenon has seen a steady rise over the past few years with technology playing a key role. In recent times there is one function that has gained importance within the supply chain domain and is known as the purchasing function. Purchasing through third party businesses has seen a rise around the globe and hence it is important to analyze how this might affect the different functions within the supply chain. The aim of this research is to analyze the effect of purchasing through a third party and how it effects the logistics performance in the weaving sector of an emerging economy. In this paper, we focus on the emerging economy which is Pakistan and its weaving sector which is one of the largest sectors within the country. This paper tends to target businesses that purchase through the third party. Our focus in this paper was solely on the weaving industry of Pakistan to gather credible insights. A quantitative analysis has been conducted to test the hypothesis against different variables. This paper tends to target weaving companies within the country irrespective of their size. Existing literature shows us that not much work has been done to analyze the performance of purchasing through the third party concerning logistics performance especially in developing economies such as Pakistan. It is of great important for businesses to be able to fully understand and learn about the effects of purchasing through the third party. As purchasing function is now considered to play a strategic role within organizations, it would be interesting to see how businesses use purchasing through the third party as a tool to achieve their business objectives. Concerning academic relevance, this research will open opportunities for researchers along with building a framework for future researchers to work upon and make advancements in the field of business management. The paper focuses on the significance of purchasing through the third party on important KPI's which are associated with logistics performance. The findings through this paper would help to fill the research gap which would help businesses make informed decisions.

Keywords: Logistics performance; Third-Party purchasing; Process integration; Responsiveness.

Chapter 1: Introduction

The focus of this chapter is on the reasons for selecting such a topic for research and also highlights the theme on which this study is based. It tells us how organizations operating in today's world have changed and why purchasing functions play a key role for organizations to fulfill their business objectives. Also, the research gap and contribution has been explained in this chapter, which tells us that more research work needs to be done to understand why companies tend to purchase through third party agents. Research objectives and questions are also stated to better understand the idea behind conducting such research.

1.1. Background

In recent times, especially with the rise in globalization, the demand for quality, variety, and the brand has increased van Damme and Ploos van Amstel (1996), which results in high levels of competition among organizations which as a consequence have driven firms to purchase through third party organizations (Yeung *et al.*, 2012). Firms all over the world have been using third party purchasing agents to positively impact their various value chain functions to the point where this 'strategic tool' of purchasing has positively affected business functions and processes. This has resulted in a voluminous length of studies. Therefore, now and then such scrutiny in terms of academics of the purchasing phenomena is not surprising at all. To this effect, researchers are trying to find answers as to 'how and why 'businesses purchase through third party agents, the costs and benefits of this practice, and the factors that amount to the best practices in purchasing (Varadarajan, 2009).

In a bid to contribute to the wealth of research and encourage future investigations, there are many articles that have being published on purchasing (Schmeisser, 2013). The world has seen a change over time at a rapid pace, which has forced businesses to revisit their business processes to better understand and utilize its resources to achieve strategic goals. Purchasing is one such tool that has been used to leverage a competitive advantage for many businesses around the world. Such a strategy for logistics was developed by Porter (1985), which is largely based on the concept of the value chain. He says that if any business wants to

achieve a certain competitive advantage against its rival it should focus on providing more value to its customer(s) through performing activities much more efficiently than its competitors. Purchasing through the third party has become a great source to reduce cost and at the same time is spreading risks for both traditional and vertically integrated businesses around the world. Using purchasing as a tool, businesses have been able to move to a business model where they focus on those investments which help them in achieving a competitive advantage against the rivals (Srabotič & Ruzzier, 2012). Many managers in today's world consider purchasing through third party agents to be the only feasible way to keep their businesses competitive. Hence suggesting that it is now important, more than ever, to better understand the role of purchasing through a third-party and the benefits and risks that it brings with it. Moreover, it is of key importance to understand the value of purchasing through third party agents in business strategy. A certain degree of business costs in developing economies is associated with the inefficiencies within their supply chain, limitations created through physical bottlenecks, and the lack of coordinated administrative processes.

Despite such academic endeavors, one question has remained unanswered: does purchase through third party agents have any sort of effect on the logistic performance of a business? Finding the answer to this question is vital because purchasing through third party agents is used widely by businesses across the globe in different industries and is considered to be a strategic tool to enhance performance. Businesses are up against cost pressures and the increased market competitiveness in global trade has made purchasing through third party agents lucrative processes for many businesses, and also to withstand capability and certify continued existence (Mukherjee *et al.*, 2013). If firms in this competitive age fail to provide customers with the required products and services, their survival becomes questionable.

Hence it has become a necessity for firms to form partnerships with logistics providers that offer various services and share the workload with firms. Being in a competitive race, executives are supposed to draw profit and loss summary of their purchasing strategy. At the same time, they also need to learn about their competitors' purchasing practices and their consequences to improve their practices. Such learnings will surely help businesses improve their purchasing practices and

yield more positive results. Research suggests that when executed properly, purchasing through third party agents' activities can prove to be beneficial in terms of cost of production and improving customer service (Yeung *et al.*, 2012; Liu *et al.*, 2015).

Similarly, if it is not implemented properly it can be a source of huge loss for the firm Wong and Karia (2010) especially with the increase of advanced logistics which involves Information technology (IT) (Langley & Capgemini, 2015). However, it is not possible to conclude whether or not purchasing through third party agents is beneficial to firms in Pakistan as there is little substantial evidence to support or refute this notion. As mentioned earlier, purchasing through third party agents helps firms improve their competitive advantage, one cannot deny the fact that it is not uncommon that multiple clients may request the same services which means that the firm cannot take advantage of purchasing activities or function for long. Besides, the number of third-party logistics providers is small hence there is always the risk of imitation of services (Hitt *et al.*, 2015). The success of purchasing through third party agents, therefore, does not only depend on its use but also on the capability of the firm to properly implement it and to organize their resources effectively (Barney, 1997; Doh, 2005). The higher cost of producing internally is also one of the factors why major businesses tend to focus on purchasing through third-party agents.

The function of purchasing has recently gained importance since more and more businesses tend to purchase through third-party agents and without a competent purchasing department, businesses cannot function. The purchasing function has transformed into a strategic level function. Purchasing does not have a traditional function of obtaining goods and services when an internal query rises, instead, it now focuses on obtaining a quality product at a competitive price and in the right quantity, and on timely deliveries through managing its supply chain efficiently. Various researchers and scholars have taken different perspectives in explaining purchasing (Hatonen & Eriksson, 2009). As per the resource-based view, purchasing gives firms access to many special resources and capabilities to improve their stance in the ever-growing competition (Bolumole *et al.*, 2007). Purchasing through external service providers is usually to attain technological, economic, and strategic advantages (Uzair & Siddiqui, 2018). Through their partnership with the third party agents and logistics providers, firms are better able to focus on other core

areas such as competitiveness. Firms also benefit in terms of lower transaction cost from purchasing through third party agents, as externalizing (buying) certain activities are more profitable than internalizing (producing) them within the firm (Ang & Straub, 1998).

1.2. Supply Chain in the Textile Industry of Pakistan

From the start, Pakistan has focused on developing the manufacturing sector and the major focus has been on the agro-based industries. Pakistan is one of the leading producers of cotton, and the development of the textile industry as a strategic objective for the government has been a long-time goal. Making use of the abundant resources of cotton is a top priority that they want to dig into and move towards industrialization. The textile industry of Pakistan has played a huge role in the economic development of the country and has a huge impact on the gross domestic product (GDP) of the country. Textile and clothing is the largest industrial sector of Pakistan if you take into consideration the amount of investment being made and the number of people employed directly and indirectly in the sector. It accounts for almost 27% of the total industry output, about 38% of the labor force is being employed here, and the contribution is about 60% in terms of earning through export.

The textile industry has a pivotal position in the exports of Pakistan. The textile industry of Pakistan has a complex supply chain. Often the chain is very long, and there are a huge number of party's involved (Saad *et al.*, 2002). Therefore, there is a need for careful management of the functions associated with the supply chain domain so organizations can try to minimize their cost and provide flexibility in regards to quick responses. The textile industry relies heavily on third-party agents for their sourcing needs. A major part of the industry is located in the developed cities of Karachi, Lahore, Multan, and Faisalabad. We selected the textile industry to conduct this research as one of the largest industries in Pakistan and it employs a large workforce. We opted for the weaving sector as it is one the largest sector which relies on third-party agents for its purchasing needs.

This study makes significant practical contributions by highlighting the need to approach purchasing through a third party more strategically. It presents a quantitative analysis to help organizations understand the significance of purchasing

through a third party. It also helps understand the variables which are affected by purchasing through a third party. It would be beneficial for businesses to understand the different KPIs that have an impact on purchasing through the third party and hence help them in making informed decisions associated with business growth and achieving competitive advantage in the market.

A textile supply chain is shown in figure 1.1.

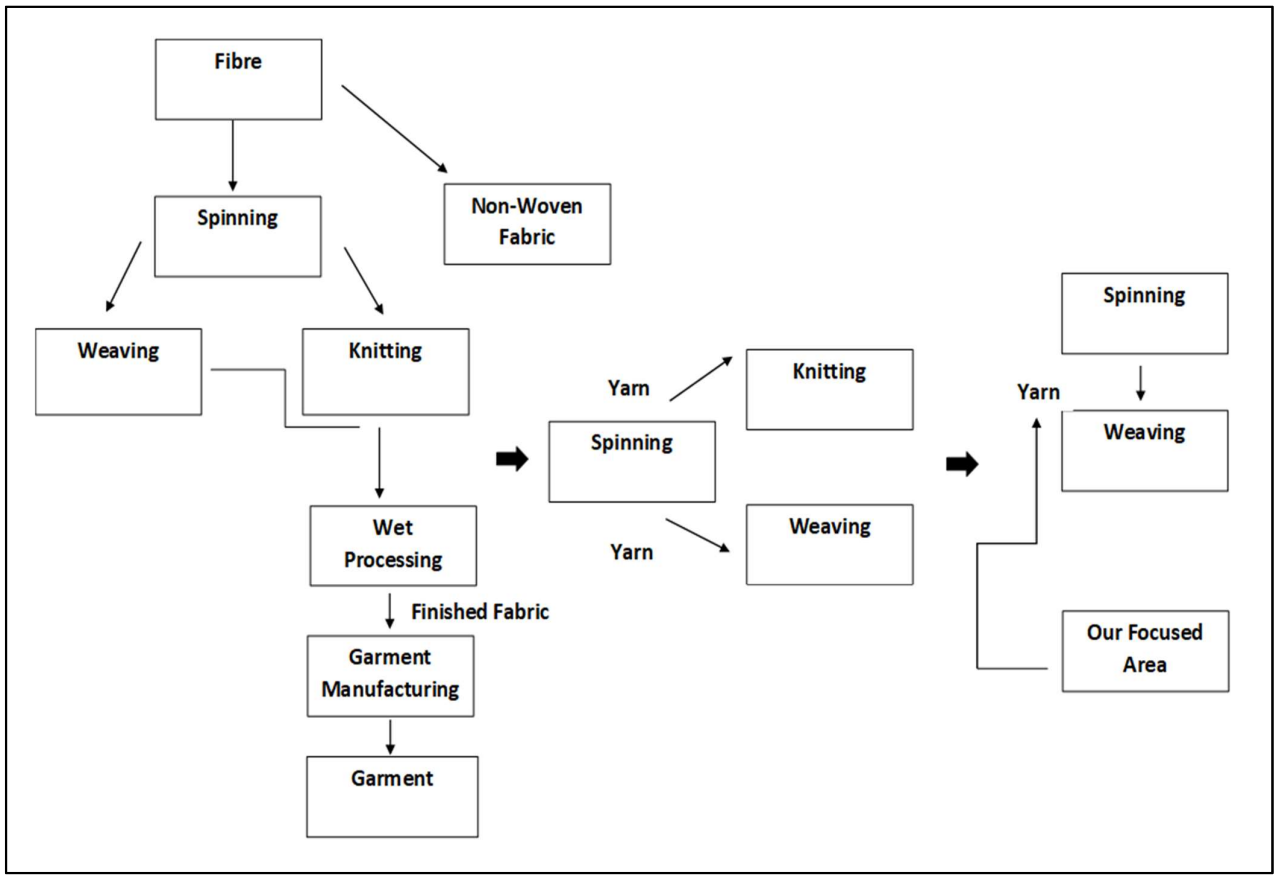

Figure 1.1: The Textile Supply Chain

1.3. Research Gap and Contribution

There have been various research studies conducted on other functions within the supply chain domain such as logistics, however, there has not been enough focus on purchasing through the external party (Brewer *et al.*, 2014). While some aspects have been widely addressed in the existing academic literature with most of the research being in areas such as manufacturing and logistics, the purchasing function has been largely neglected (Kaipia & Turkulainen, 2017). Hence, the purchasing function needs to be explored in this aspect as it has been observed

that the potential impact of the purchasing through the third party has, approximately in context for goods and services purchased, and accounted for 50% to 90 % of the business cost of goods sold (Emiliani, 2010). Zhu *et al.* (2017) state that the findings in the paper might be biased towards a specific culture and economic condition, and therefore a study should be conducted in a different culture and economic condition. Given this, it becomes important that a research study is conducted on a developing economy such as Pakistan.

Investing in Information technology enables product design information to be shared among different departments, for example, product development, purchasing, and manufacturing, etc. Thus improving communication which leads to a reduction in lead time and helps management makes decisions quicker and in real-time which eventually aids in making business decisions. Shorter lead times helps firms to be more flexible. While our research supports the presence of IT for a flexible supply chain and many may agree with this, but more research is required to warrant this statement (Swafford *et al.*, 2008). The manufacturing sector is the third-largest sector in Pakistan, which is accounting for 18.5% of the GDP, and 13% of total employment (Ministry of Finance, 2020). As the textile industry of Pakistan is the biggest contributor to the manufacturing sector, within this textile industry our study will be specifically focusing on the weaving sector.

Businesses in Pakistan need to understand and learn about the effects of purchasing through third party agents as well as to know how to and when to use this strategic tool for better management and execution of such practices. Regarding academic relevance, this research will open opportunities for students and scholars along with building a framework for future researchers to work upon and make advancements in the field of business management. This can be done by analyzing how purchasing performances are measured. Moreover, other factors or aspects of the firm should be assessed in association with the impact of purchasing through third-party agents. For instance, one can take into account the demographics of the firm i.e. where it is based, how big the firm is and the number of employees, etc. into consideration for future research. This study will prove to be extremely beneficial for businesses that are facing a dilemma of deciding whether to purchase through third-party agents or not. Moreover, this research will also provide insights into the potential risks and benefits associated with purchasing through an external party.

1.4. Research Aims and Objectives

This research aims to examine the effect of purchasing through third party agents on logistics performance in an emerging economy. The research recognized the following objectives to fulfill this research aim:

- Examining the determinants of logistics performance
- To investigate the impact of purchasing through third party agents function on logistics performance
- To test the mediating role of external information sharing in the weaving sector

1.5. Research Questions

This research is being conducted to find the answer to the following questions:

- Does purchasing through third party agents have any impact on logistics performance?
- What role does external information sharing play between purchasing through third party agents and logistics performance?

1.6. Scope of the Research

Most of the previous research is focused on other supply chain functions and there is limited literature that focuses on purchasing through third-party agents. Also, there is an even lesser focus on developing countries with most of the earlier research based on developed countries. Given this, our study looks at the textile industry of Pakistan, specifically the weaving sector as it is one of the largest sectors of the country while also being one of the largest sectors which purchase through third-party agents and rely on such external parties to fulfill their needs. The supply chain in the textile industry is complex and is relatively a very long chain with many different supply chain stakeholders involved. Hence, to keep it more specific we have focused on the weaving industry within the textile sector, which will allow us to focus on yarn purchasing. This helps in avoiding confusion and it is more feasible to collect data of one specific sector. As covering various sectors can result in misleading information, for example, lead time for fabric and yarn are never the same, and hence to gain credibility and reliability in the data being collected we focus on only one sector within the textile industry.

Chapter 2: Literature Review

The focus of this chapter is on the literature that exists for our said topic. It includes a review of the variables that have been used in the study to develop the model for our research study. There is also a discussion on the existing different models and theories. The chapter starts by discussing the meaning of purchasing and moving forward with understanding the role purchasing plays with respect to the supply chain management function. It then follows to develop the hypotheses for our study and finally leading the model that is being used to conduct the research

2.1. Introduction

The second chapter of this research presents the literature review. It discusses key aspects related to our research to get a better understanding of the purchasing concept. Furthermore, various variables included in the research framework are described in detail. The independent variable is purchasing through the third party and the dependent variables include perfect order fulfillment of supplier, sourcing cost, purchasing lead time, and flexibility of supplier. Afterward, there is a discussion on the mediating role of process integration. Lastly, the proposed hypotheses are presented with the research framework.

2.2. What does purchasing through the third party mean?

Weele (2010) in his paper has defined purchasing as:

The management of the company's external resources in such a way that the supply of all goods, services, capabilities, and knowledge which are necessary for running, maintaining and managing the company's primary and support activities are secured at the most favorable conditions".

(Weele, 2010)

Purchasing through the third party is considered a strategic level decision, as it offers organizations access to external resources or capabilities so they can compete better in today's globalized market (Mclvor, 2008). It should be noted here that purchasing through third parties "may be narrow in scope" and therefore can be

limited to only one type of service, examples being warehousing or purchasing (Lieb *et al.*, 1993). Purchasing through the third party can be also defined as

"The transfer of responsibility to a third-party of activities, which used to be performed internally".

(Maltz & Ellram, 1999)

Purchasing is indeed associated with a strategic function. For years now purchasing has played an important role in the firms' strategy and performance. It is well established that organized purchasing leads to adding more value not only to operational but also with respect to financial and market performance of the firm. Looking back at the recent global economic environment, the main objective of any purchasing department has been to optimize the cost, at the same time increasing efficiency within the firms' supply chain (Schütz *et al.*, 2019). A study conducted by ABC made some recommendations that focused on digitalization along with the purchasing and procurement function practices (Srai & Lorentz, 2019).

As per the knowledge-based view, the firm's most important or strategic asset is its knowledge. Hence, the purchasing function must possess the knowledge and skills that can directly influence the savings of material and services by reducing the cost associated with purchasing of goods. This includes having information about the supplier market and technical knowledge regarding products that combines into an appropriate sourcing tactic (Hesping & Schiele, 2016). It has been known that third parties can play a pivotal role in the relationship between firms, which can lead them to engage in some form of economic exchange. Noteboom (2004) discusses how third parties can help bridge the gap of cultural distance between two stakeholders and effectively reduce information asymmetry. The role of third parties has been, to some extent, explored in the past with some related traditional research. A few examples being the Network theory Burt (1996) and innovation Howells (2006) that provide some insights related to the role of third parties.

Lately, some authors have started to move their focus on these topics, one such topic being the importance of the role that third party businesses tend to play in lowering power differences and social distance, therefore reducing the transaction costs associated with this e.g. Adobor and McMullen (2014), also the power or importance of the third party in defining supply base structure (Lacoste & Johnsen,

2015). This helps to better understand the factors which are associated with the imbalance in powers between the different supply chain stakeholders Brito and Miguel (2017) and also associated with business sustainability (Touboulic & Walker, 2015). Talking about today's world, it is very important to extend a view from the different perspectives that each stakeholder has in association with a transaction and how they interact with each other (Carnovale *et al.*, 2017; Finne *et al.*, 2015; Gelderman *et al.*, 2008).

Lawrence (2011) has defined purchasing through third party agents as transferring of key activities concerning goods and supplier management to an external source know as a purchasing source, usually to focus on its core competencies. Brown and Wilson (2005) in their paper have defined purchasing through the third party as an act of securing services from an external source. Aubert *et al.* (2004) has defined purchasing through the third party as a typical example of make-or-buy decision, stating that the whole decision is associated with the management and how they perceive what is more feasible to them strategically. Hanson and Olson (2005) define purchasing through third party agents as the transfer of all or some part of all or part of a range of sourcing-to-settlement processes.

This includes all aspects which are sourcing, contracting, and management of supplier to a third party. Purchasing through third party agents simply means a process in which an organization takes a measured and calculated risk of proceeding towards moving some of their internal processes around to a specialist organization. This usually involves the organization recognizing the non-core and the core activities with a source to pay and usually purchase through a third party the non-core activities to a specialist who is already operating in that field (Manikandan, 2016). As per the research conducted by Aberdeen Group in 2007, purchasing through the third party is considered to be a way an organization is utilizing its resources to acquire goods and services. However, this doesn't simply mean that the company doesn't have control over its function but is only utilizing purchasing services.

This can mean a reduction in cost, efficiency improvements, improved compliance, and lead to better performance. Purchasing through the third party

means that it may involve very little or all of the company's technology, systems, and vendor management or everything purchased can be directed towards the purchasing company (Sigalia, 2010). Weele (2010) has distinguished between the extent of the difference in purchasing through the third party, the two being partial/incremental purchasing through the third party and the second being total purchasing through the third party which is also known as turnkey purchasing. Partial or incremental purchasing can be looked upon as when only a certain part of a fully integrated function is conducted through third-party agents while the power still lies with the business entity. Turnkey means that the whole function is handed over to the third party organization and all the responsibilities are transferred and rely on the vendor. This means the vendor is responsible to provide the product and the decision making relies on him alone and the business doesn't interfere and only receives the final product. Usually, a certain price is decided for each order placed.

This doesn't mean that the business does nothing as they still have to overlook and keep a check to plan and execute their business plans, coordination is considered to be of key importance in both the cases (Weele, 2010). Dhawan *et al.* (2011), In his paper argued that to date, purchasing through the third party is only linked to transactional purchases which are conducted on a day to day basis within any business rather than turning it into a strategic alliance between the two. Nevertheless, businesses are likely to expand the scope of what and how much they purchasing through the third party in the years to come (Hackett Group, 2011). As per Joel (2008), businesses need to enhance and develop a strong relationship with the suppliers, and look at their partnership from a strategic perspective and hence creating value for all included in the supply chain.

2.3. Purchasing and Supply Chain Management

A supply chain management can be defined as a way to integrate value-adding business processes starting from the purchasing of goods to delivery to end-user. It is having an impact and providing particular directions to any business (Wibowo *et al.*, 2017). Purchasing can be used in any form but when specifically talking about supply chain management it has a border perspective. Purchasing has impacted the supply chain itself, as playing a part in widening the scope of the function. Organizations tend to purchase through the third party which in return

widens their supply chain scope. Hence how efficiently organizations manage this function has a total impact on their supply chain performance and hence on their profitability.

Mazlan and Ali (2006) have studied the relationship that exist between supply chain and purchase through the third party, they have concluded that purchasing is a very important tool that can be used in the implementation of the supply chain management. Pagnocelli (1994) in his study relating to purchasing through the third party, resulted in him finding out that purchasing through the third party improved efficiency, also it had a positive impact on the service, and cost reduction as the purchasing provided the same service at a lower price as compared to the internal resources. It also helped businesses focus on their functions which were considered to be providing value addition to their organization and were considered as core functions. Reduction in cost of operations and also helped businesses access technology and expertise which were before inaccessible (Weaver *et al.*, 2000). Pearce and Robinson (1997) in their paper focused on the many different reasons due to which businesses purchase through the third party.

Some of these included reasons such as to improve business focus, to access technology or world-class infrastructure and to divert the focus from non-core activities and purchase through third party these functions, and to keep the focus on core activities of the business. Beulen *et al.* (2000) have recognized a total of five major drivers of purchasing through the third party they include, quality, cost, capacity, finances, and core business functions. They deduce that they are the major factors for which businesses would choose purchasing through the third party. Randall (1993) says that businesses undergo a swift and speedy due to changes in their internal and external environments and can benefit to a greater degree if they consider purchasing through the third party as an operations strategy that can be used to reduce the cost of operations of the business. It is of great importance to be able to measure the true performance of the supply chain, as it directly affects the decision-making through the opportunity of benchmarking it against past performances.

Insufficient results or measures can lead to problems associated with going concerned of any in the short or long term because this is a great source of

information for strategic decision making. It is very important to have the right set of tools to measure performance at different supply chain levels (Van-Damme & Amstel, 1996). As per Lambert and Pohlen (2001) a well-structured supply chain measurement system would have a positive impact and would increase the chances for success by streamlining the processes across different firms, and similarly gaining a competitive advantage through the difference in services and lower costs. Mostly purchasing done through third party and measures associated with supply chain fall into the following categories; price performance, quality, responsiveness, cost-effectiveness, supplier performance, revenue, and internal customer satisfaction. This measurement of purchasing through a third-party and the entire supply chain is of key importance for all organizations as if something can't be measured, it certainly wouldn't be effectively managed and hence there couldn't be any growth or importance with respect to it. Aside from this, measurements are critical in playing a role with gaining a competitive advantage in an increasingly packed global market place (Lysons & Brian 2012).

Purchasing through the third party is a relatively recent trend adopted around the globe in various industries, and to date, there are only limited studies that address this topic in detail (Yang *et al.*, 2017). Historically, purchasing through the third party has been used as a mean of reducing costs, and a lot of emphases was placed on short term business objectives. With changing times, purchasing through the third party has transformed into a strategic management tool (Bapna *et al.,* 2013). All around the world, competitiveness between businesses has increased pressure and the need for better financial performance year in year out is causing a rise in the scale of functions being purchased through third parties across businesses around the globe (Carter & Yan, 2007). Purchasing through the third party has potentially shown to reduce the operational cost by almost 25% (Olson, 2010) simultaneously also reducing the cost of administration to up to 75% (Hesketh, 2008).

Rise in the use of Information Technology (IT) based solutions have made purchasing through the third party more cost-effective and feasible. It has also played a huge role in reducing purchasing costs, for example by lowering search costs for potential vendors and also (McIvor & Humphreys, 2004). Consequently, when there are scarce resources, purchasing through a third party can help

businesses focus on higher-value activities (Olson, 2010). The transaction cost theory or Transaction Cost Economics (TCE) is associated with analyzing logistics and purchasing decisions made by organizations (Andersson, 1997). Accordingly, to this theory, the transaction cost is considered to be a major reason behind various economic activities.

The theory discusses that businesses have important decisions to make, which includes one being to make in the house or to buy from external sources. So this theory provides a theoretical background for decisions associated with make or buys decisions. When businesses tend to purchase through third parties, a transaction cost occurs and while producing the products in the house they tend to incur production cost. Transaction cost is defined as a cost that is needed to "fulfill" the trade between partners. Transaction cost speaks about the "market friction" or "cost associated with using the price mechanism". Aubert *et al.* (2004) discuss in his paper that basic rule is that when marginal costs of using the markets (transaction cost) are higher than the cost of producing it in the house (production cost) than it is better to incur the cost by producing in house and vice versa.

On the other hand Geyskens *et al.* (2006) has provided in his paper evidence for this theory by conducting their analysis of other primary studies and stated that make-or-buy decisions are primarily related to uncertainty and lack of information. Transaction cost theory (TCE) has two assumptions on which it is based upon, first being bounded rationality and opportunism (Wang, 2002). Bounded rationality simply means limited rationality as all the parties involved in a transaction tend to bound by limited knowledge or rationality. Opportunism simply means self-interest that is associated with each stakeholder associated with a transaction. Carmel and Nicholson (2005), has explained opportunism as a behavior, in which one part during a transaction takes advantage over another party. Cheon *et al.* (1995) in his papers discusses transaction cost theory helps examine purchasing from an economic point of view, basically trading off transaction cost and production costs.

The resource-based view (RBV) is also a theory which discusses the internally focused processes of a business, it says that competitive advantage can be attained through effectively utilizing resources that create value and are rare, can't be copied by its competitors and is hard to substitute (Brewer *et al.*, 2013). This

doesn't only include the physical assets but also the resources such as technology and intellectual. The combination of these resources complementing each other would enhance performance and help attain businesses a competitive advantage (Tokman *et al.*, 2012). Quinn and Hilmer (1994) in their study the effect of strategic purchasing by focusing on an organization's core activities and recognizing activities that can be performed much better externally. Billington and Kuper (2003) is their paper has analyzed the different aspect of purchasing through the third party, and also the potential risks and challenges that the firm may face while adopting such a strategy. They examine the value of Hewlett-Packard's strategy that they have adopted for purchasing through the third party named "the buy-sell mode". Amaral *et al.* (2006) have examined opportunities and threats associated with purchasing through the third party by organizing an in-depth industrial survey. Our study differs from all of these as we focus on the impact of purchasing through the third party on logistics performance which is one of the key functions within any organization.

The Agency theory which explains the principal-agent theory in great detail. Principal-Agent Theory is a subset of Agency Theory. The basic concept is that when hired by a firm (the principal), the agent (purchasing firm) should perform in the best interest of the principle. However, to the very nature of humans, the idea of self-interest rises, and the agent might perform on his interests rather than focusing on providing the best service to its principle. This holds in cases where the principle is in no position to monitor the actions of its hired agent and hence the concept of information asymmetry and opportunistic behavior arise (Sappington, 1991).

In simpler terms, a principal-agent relationship can be seen as a seller-buyer relationship. In terms of purchase through the third party, the buyer is considered to be the principal and the agent is the seller who on the behalf of principle deals with the suppliers. Information asymmetry here would mean the agent has more information regarding the product than the principle itself and hence can use it to his advantage but similarly this is also a major reason why businesses tend to hire agents to fulfill their business needs. Hence, businesses need to have a high level of integration between the different processes to avoid such a situation. The business should be aligned in such a way that processes are closely monitored and such that information is integrated to make better-informed decisions at all points within the supply chain.

2.4. Logistics Performance

Performance measurement simply means to quantify the process of efficiency and effectiveness of certain actions. An important trend identified by Busi and Bititci (2006) is the development of management and a shift from performance measurement. Any organization would focus on enhancing revenue, this means that how efficiently can a group of different organizations come together in a form of chain and create a value chain which would ultimately create value for the final customer. There is an existing performance measurement framework within the supply chain. One such framework is the balanced scorecard discussed by Kaplan and Norton (1992), which forces on the financial and non- financial performance aspects of an organization. Another framework, which is highly spoken of, is the Supply Chain Operation Reference (SCOR) model. The efficiency of the logistics function has a huge impact on the profitability of organizations to a very large extent. Logistics is defined as the effective and efficient management flow of material within and between organizations (Ülgen & Forslund, 2015). Logistics is considered to be a backbone of trade as it is a medium to transfer products from producers to consumers. An efficient logistic performance would mean an increase in business opportunities and also add to the gross domestic product (GDP) which would benefit the economy as a whole (Hanouz *et al.*, 2014).

Logistics performance can be explained as a subdivision of a larger process of a business or an organizational performance, similarly, performance is also considered to be multi-dimensional. There is no one such measure that is considered to be sufficient for measuring the performance of logistics. Nevertheless, the main objective of any research should always be to find such measures that can help capture utmost, if not all, of performance dimensions which are believed to play a key role for both short-term and long-term perspectives (Chow *et al.*, 1994). Sahay and Mohan (2006) in their paper has observed that providing exceptional logistics performance would mean a tradeoff between the need to push down supply chain inventory levels and reduction in lead time, which at the same time enhancing the overall customer experience for better business performance. The integration associated with 3PL usually involves external providers to perform activities such as management and delivery of logistics (Maloni & Carter, 2006). Following this method

allows firms to provide a more tailored offering for its customers, and leads to a long-term affiliation between businesses and logistics service provider. With a capable and effective 3PL provider, the firm using its service is likely to benefit in terms of reduction in cost and better on-time delivery as these two factors are basic requirements of any firm which plans to purchase through a third party (Zhu *et al.*, 2017).

Knemeyer and Murphy (2004) have associated logistics performance in their papers with a reduction in logistics cost and also strengthen the responsiveness of the system as a whole. Logistics adds value through fulfilling customers' requests. Hence, logistics performance should represent the business's ability to deliver goods and services when required and at a justifiable cost and in the exact quantity that is required by the customers (Green *et al.*, 2008). Dotti *et al.* (2012) says in his paper that the textile industry, which is addressed in his study, is very competitive. Logistics problems such as very long lead times and fluctuation in demand prevail (Kwok & Wu, 2009). Very few studies have been identified in this industry concerning logistics performance. Unahabhokha *et al.* (2007) in his paper has proposed how using a predictive performance measurement system can lead to solving the problem associated with the low delivery performance of the textile manufacturers. Dotti *et al.* (2012) in his study focused on yarns and yarn manufactures, where the internal performance measurement system had to be flexible to handle the request to the re-designing of processes related to production.

Chan and Chan (2010) in his papers argues that the textile supply chain is often design-driven, which puts a lot of importance on demand for efficient logistics performance. A great example is of the retail chain Zara which is often talked in regards to how successful they at managing their logistics performance particularly associated with lead time management in their supply chain. Issues such as lengthy transportation distances, longer lead times, short product life cycles, high product variety demand, unpredictable demand Chaudry and Hodge (2012), and very competitive profit margins are very common in the textiles industry (Bruce *et al.*, 2004). Kwok and Wu (2009) have also further stated that in regards to the development of logistics function, that the textile industry is still very less developed in this regard. There are many different indicators for logistics performance, logistics performance most frequent indicators include, firstly the ability to provide the exact

quantity consistently, secondly to provide flexibility to modify order size or volume during fulfilling of orders, thirdly lead time, fourthly the reliably of the delivery and lastly the total cost of logistics which is of great importance in today's world (Boon-itt & Wong, 2011).

Moons *et al.* (2019) in their paper discuss how a performance of internal hospital distribution tasks can be evaluated on factors such as on-time delivery of supplies and response time against urgent requirements. Lenin (2014) is his paper discusses the Supply Chain Operation Reference (SCOR) model, and how this is used to improve and help communicate supply chain functions within an organization and also to external stakeholders? It is also used to define logistics processes, gain benchmarks, and also define measures for performance. It can be used to define the current logistics processes, get benchmarks or best-practices, and define performance measures. Hence with international trade increasing day by day, it is important to understand how and what impacts the logistics performance of an organization (Wong & Tang, 2018).

2.5. Purchasing Through Third Party and Perfect Order Fulfilment of Supplier

Perfect order fulfillment is associated with the percentage of orders that meet the required delivery date, which also provides complete and exact documentation and in the required quantity without any damage (SCOR, 2017). Perfect order fulfillment deals with the concept of time in full. This is also one of the key performance indicator (KPI) used to measure supply chain performance in many organizations. This focuses on providing products in the right quantity, at the right time and at the designated location as decided between the different stakeholders. With the growth in the variety of products that businesses are offering around the globe, this presents different challenges to manufacturers in designing such an order fulfillment system that can help answer customer's needs (MacCarthy, 2013). Historically speaking, the decision to purchase was only dependent upon the price (Christopher, 2008; Jonsson, 2008; Bowersox, 2010). In recent years, other options are also now taken into consideration such as the choice of supplier, and the time it takes to purchase and fulfill the order placed by customers (Christopher, 2008). This

shows that purchasing has become more complex as it needs to be not only cost-efficient but also be reliable for businesses to run in the long run.

H1a: Significant impact of purchasing through the third party on perfect order fulfillment of supplier.

2.6. Purchasing Through Third Party and Flexibility of Supplier

How do you respond to external influences, and also the ability to react to fluctuations in market conditions to achieve business objectives or gain competitive advantage (SCOR, 2017)? An agile system means that businesses should be responsive to changes in customer demand (Liu & Liu, 2008). One of the key aspects of any organization operating anywhere around the globe is to have flexibility in their processes. This means that without being flexible to changing market trends or changing customer demands no business can survive. An organization's ability to respond to any challenge in terms of competition and to maintain its competitive advantage is the single most important factor involved in the success of the organization in today's global market (Swafford *et al.*, 2008). Organizations that have agile supply chains are automatically more market-oriented because they are better placed and able to synchronize supply with demand accordingly (DaSilveira *et al.*, 2001). As per Katayama and Bennett (1999), an organization's level of supply chain flexibility shows the strength of the interface between the firm and its markets.

***H2a: Significant impact of purchasing through the third party on Flexibility of supplier*.**

2.7. Purchasing Through Third Party and Cost of Sourcing (Sourcing Cost)

The transportation system is considered to be of key importance to economic activity among all other workings of the business logistics system. Transportation cost is considered to one of the largest costs incurred by businesses, an estimate is that one-third to two-thirds of all expenses of firms' logistics costs. Such a study has been conducted by the *National Council of Physical Distribution Management (NCPDM)* in by Chang (1988), which shows that logistic costs accounted for, on average, 6.5% of market revenue and a staggering 44% of the cost of logistics.

Measurement of the supply chain process in transport logistics needs to incorporate performance such as cost efficiency as it holds key importance for all the parties involved (Lai *et al.*, 2002).

The most crucial objective of any transportation system is to make delivery of products and goods in time and as per the quantity demanded by the customer. The main aim of the transportation system is to make products transportable and provide timely delivery to its customers. This means promoting value-added by incurring the least possible cost. Transportation affects logistics activities and also influences other functions of the business too.

H3a: Significant impact of purchasing through the third party on the cost of sourcing (sourcing cost).

2.8. Purchasing Through Third Party and Purchasing Lead Time

Lead time can be defined as the time between receiving an order and the placement of order (Li, 2000). This includes the time taken from receiving the order to delivering the order to the customer and receiving all the necessary documentation. One of the major challenges arising from globalization for businesses is how efficiently they manage their time to fulfill customer needs, and hence resulting in longer lead times (Bowersox, 2010). Companies are the past had tried to bridge this gap by using inventory as a tool, the inventory is kept accordingly to a certain forecasting system. However, precision regarding demand is never accurate, and hence, no matter how advanced is the forecasting system, it is bound to fail. Historically speaking, the decision to purchase was only dependent on the price (Bowersox 2010; Jonsson, 2008). In today's world, other options are also taken into consideration such as the choice of supplier and also the cost of the time it takes to purchase and fulfill the order placed by customers (Christopher, 2008). This shows that purchasing through the third party has become more complex as it should not only be very cost-efficient but also have responsiveness and flexible lead-time.

H4a: Significant impact of purchasing through the third party on purchasing lead time.

2.9. A Mediating Role: External Information Sharing

External information sharing has played a vital role in bringing businesses together. Previous research about supply chain management has suggested that information sharing has in recent times become a major source of competitive advantages for many businesses around the globe (Koçoğlu *et al.*, 2011). Businesses now rely heavily on information sharing tools which have enabled organizations to process and communicate information in a faster more reliable way. Researchers have concluded that the closer the information linkages between business become more prevalent it leads to better managing supply chain effectiveness which in return leads to better performance by using its resources more smartly (Ding *et al.*, 2011).

There is a growing acceptance in the literature in terms of the benefits that are provided by using information sharing as a tool to enhance the performance of businesses and its supply chain partners (Lambert & Rogers, 2008). When talking about information sharing with external supply chain partners such as suppliers, it has more value as it eliminates the potential variability of the information exchanged between the parties thus making way to achieve a standardized information sharing platform (Yu *et al.*, 2010). As purchasing through the third party has increased, the scope of the textile sector has become larger, and each stakeholder within the supply chain needs more and more credible and reliable information to improve their efficiency and effectiveness (Dodd Parrish *et al.*, 2004). Many businesses rely on information technology and enterprise system planning software for sharing information among different stakeholders within the supply chain is an important factor that needs to be considered (Hodge, 2002).

It should be noted here that information sharing among different members of the supply chain can reduce the bullwhip effect that may cause within the supply network but can also help reduce the costs associated with the whole supply chain network (Park *et al.*, 2003). To gain a smooth flow in terms of production, transportation, and payment between businesses, it is crucial to have an effective logistics and optimal level of information sharing between members (Nordas, 2004). Salam and Banomyong (2003) in their papers have suggested that textile businesses should information with their suppliers and customers with the use of

information technology such as EDI systems, which are known to improve the effectiveness and communication between business partners.

They explained and discussed different variables that impact on demand responsiveness of the Thai textile supply network, they are majorly operational accuracy, lead time, and collaboration between different supply chain partners. It can't be stated enough that effective information sharing allows a supply chain to operate more efficiently and hence lead to achieving a higher overall supply chain performance (Chu & Lee, 2006). Information sharing has an impact on the supply chain network and its performance in both total cost and service level terms (Zhao *et al.*, 2002).

Information sharing is a medium through which businesses build better relationships and promotes liaison between the different suppliers and the different manufacturers in the supply network, which in return would lead to better performance (Du *et al.*, 2012; Khan *et al.*, 2016). Information technology plays an important part in the supply chain network and promotes a culture of information sharing. The relationship and level of trust play a productive role in supply chain information sharing in China (Cai *et al.*, 2010). Information sharing between suppliers and manufactures also has a positive impact on logistics integration Information sharing between suppliers and manufacturers also has a positive relationship on logistics integration, especially when looking at managing inventory (Prajogo & Olhager, 2012). Based on the above mentioned literature, the research aims to prove the following hypotheses.

H1b: External information sharing mediates the relationship between purchasing through the third party and perfect order fulfillment of supplier.

H2b: External information sharing mediates the relationship between purchasing through the third party and flexibility of supplier.

H3b: External information sharing mediates the relationship between purchasing through the third party and cost to the source (Sourcing Cost).

H4b: External information sharing mediates the relationship between purchasing through the third party and purchasing lead time.

2.10. Hypotheses

The following table gives an overview of the hypotheses of the said study.

Table 2.1: Hypotheses

Variables	Direct Relationship Between IV & DV	External Information sharing as Mediator
Perfect Order Fulfilment of Supplier	**H1a**	**H1b**
Flexibility of Supplier	**H2a**	**H2b**
Cost Of Sourcing (Sourcing Cost)	**H3a**	**H3b**
Purchasing Lead Time	**H4a**	**H4b**

2.11. Theoretical Framework

Based on the literature review presented in the previous section, the following theoretical frameworks are proposed. Figure 2.1 illustrated a direct relationship between the independent and dependent variables, whereas Figure 2.2 illustrates their relationship with external information sharing as a mediator.

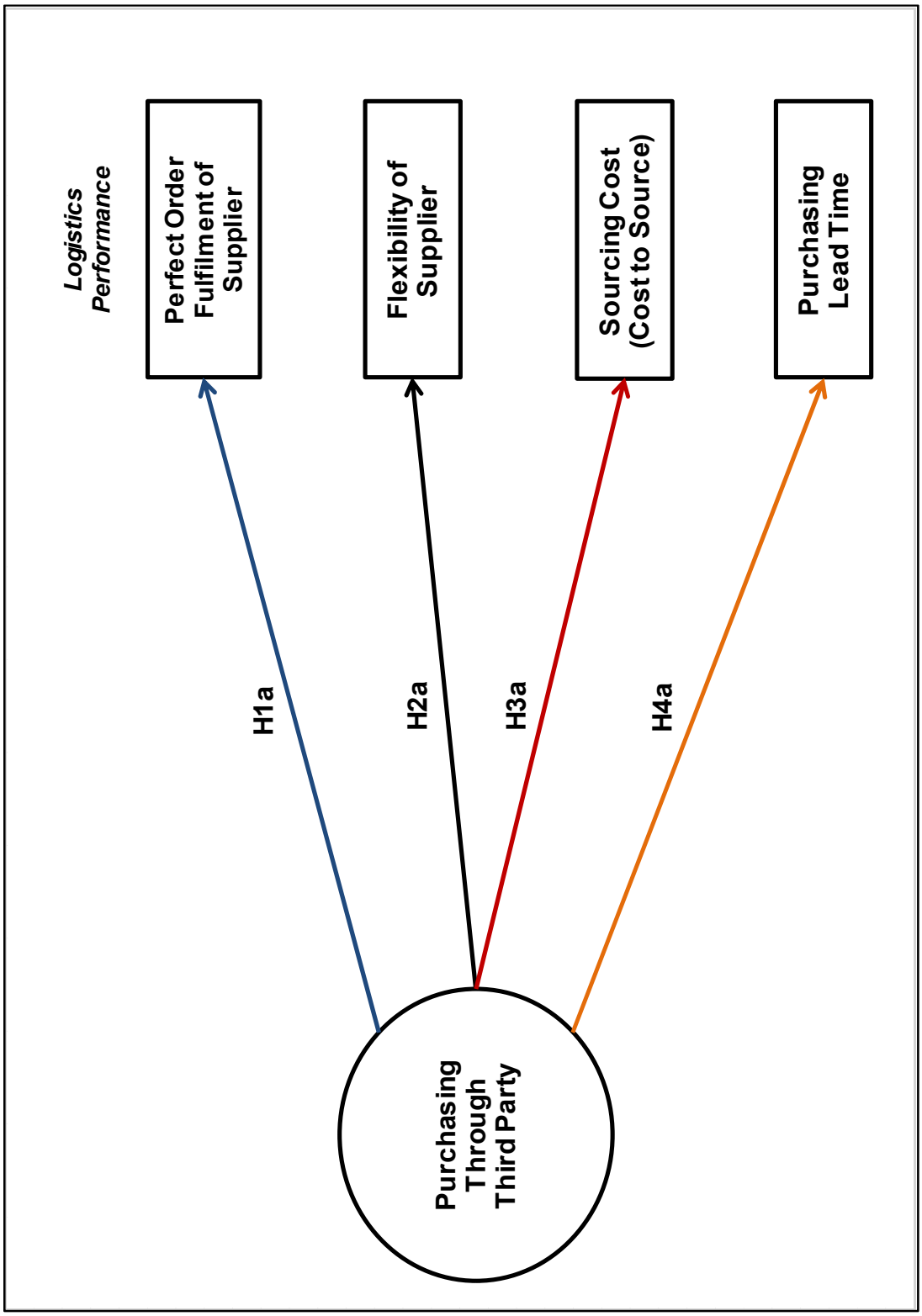

Figure 2.1: Direct Relationship

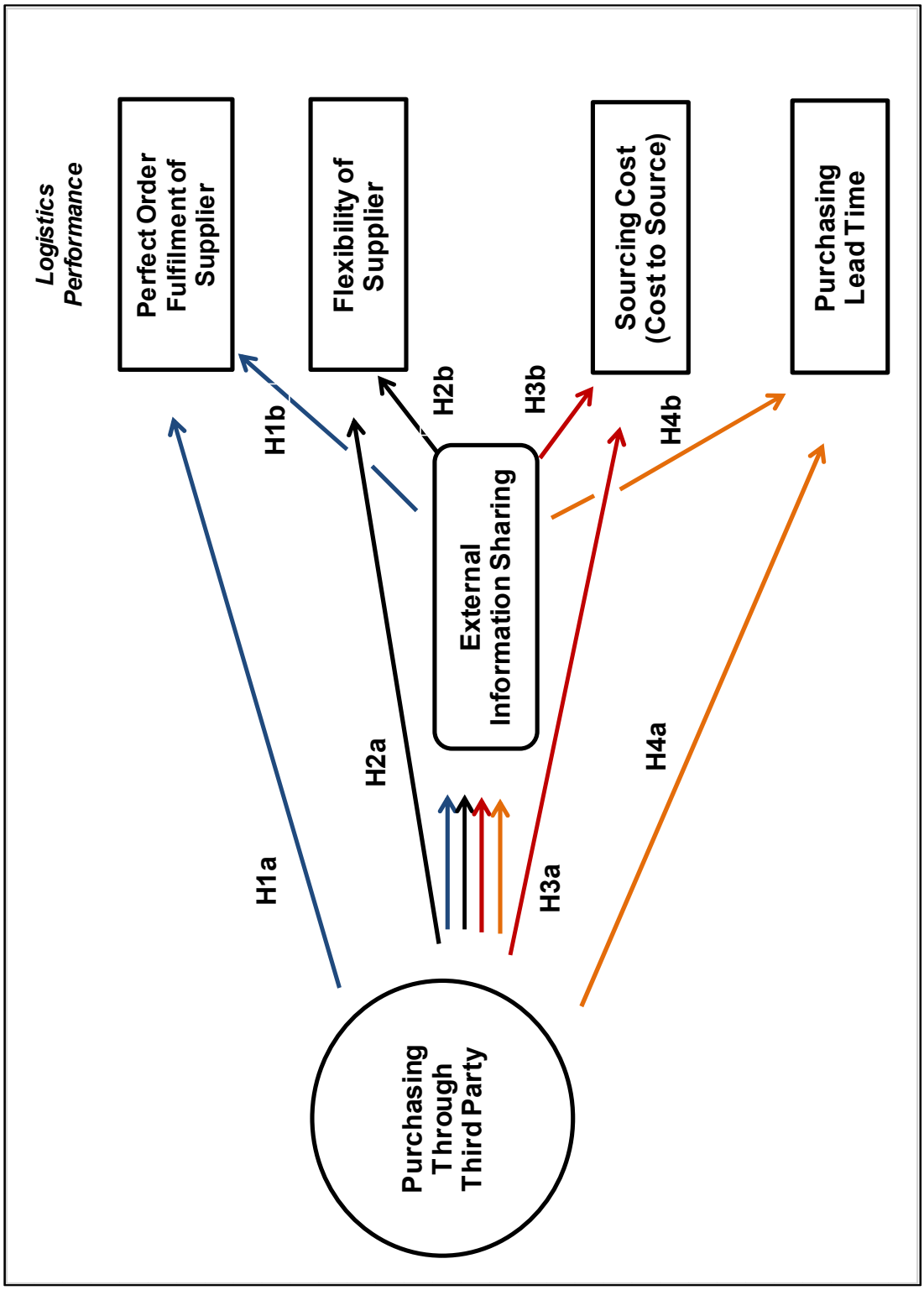

Figure 2.2: External information sharing as Mediator

2.12. Problem Statement

As businesses have evolved around the globe, purchasing has turned into a more strategic function, hence gaining more importance with different organizations. As businesses are always looking to enhance their capability and gain a competitive advantage against their competitors, it has become more and more common for businesses to purchase through third party agents. In a developing economy such as Pakistan, it's still on an initial level and businesses haven't fully understood the potential that purchasing through the third party may play in achieving their business objectives. Hence conducting such research in one of the largest sectors of Pakistan was crucial and would play a pivotal role in understanding the key factors that influence while purchasing through a third party. Businesses would be able to better understand and make better-informed decisions. Purchasing through third party agents is not a relatively new concept but it has lacked focus towards itself both in literature and the real world. The current study is important in a developing country such as Pakistan, which needs to realize the true potential of managing purchasing function strategically. This would help achieve business objectives and enhance cooperation and business between organizations.

Majorly businesses in Pakistan do tend to purchase through third party agents but such research regarding its impact on the performance of the logistics function has not been discussed or analyzed in the existing literature. Hence there is a strong need to understand and explain this phenomenon is an organized way, which would help future researchers to understand it better. With technology playing a huge part in today's communication between businesses, it is crucial to include external information sharing as a mediator to check exactly how much of an impact does it have between variables? A review of the existing literature shows that there is a need to better understand this phenomenon. The current study addresses this gap by surveying concerning businesses that are purchasing through third party yarn manufacturers and how this impacts the logistics performance in the weaving sector across Pakistan. It is crucial to understand and help businesses grow and maintain a strategic advantage in the market.

Chapter 3: Research Methodology

This chapter focuses on the research methodology used for this study and why the textile industry was chosen for conducting the study. It also focuses on the analytical procedures that were used for this research. The chapter also discusses the sampling technique and data collection procedures used. Besides, the measures and relevant scales that were adapted to collect the responses from the sample are explained in detail.

3.1. Introduction

This chapter focuses on the research design and the method used to collect the required data. The targeted population and sample size are discussed as well as the method of data analysis and the procedures adopted in undertaking this research.

3.2. Research Design

According to the proposed research questions, this study will have a quantitative research strategy along with the positivism research philosophy. Due to it being quantitative, this research has a deductive approach. This research aims to examine the effect of purchasing through the third party of yarn and the impact it plays on logistics performance of the purchasing function along with the investigation of the mediation effect of external information sharing and integration between the relationship of the independent variable and dependent variables. So, this research will investigate the cause-effect relationship due to which the ontological orientation is objectivism. Research design is considered to be a type of master plan, which helps in determining how to collect data and how to analyze it. It ensures to understand that the data being collected is suitable and fitting to help understand and problem being investigated (Zikmund, 2003). As our research is quantitative. An ontological stand of any individual conducting research explains two very basic questions; “how can we understand reality?” and more importantly, “what constitutes reality?” it is solely based on how an individual researcher forms his understanding of these important questions, they may take a “realist” or a “relativist” ontological stance. While conducting this research we had a “realist” and “objective” ontology, as

this research is based upon the view that reality and the human experience or an individual's mind are considered to be independent of each other.

In plain terms, realists are of the point of view that it is of crucial importance to take a point of view of an outsider to properly understand the reality and its true impact on the context. Moreover, realists believe that "there is only one true reality" which cannot change. The ontological stance of any individual researcher further directs their epistemological beliefs. Annells (1996) in his paper has defined epistemology as "The relationship between the researcher and the research subject". Similarly, as realist ontology is objective, this means that as the researchers' role is very limited in gathering only factual data by using deductive methods in quantitative research.

This depicts the "*Positivist"* approach of the researchers in inquiring about the truth. The main assumption of using such an approach is that the researcher must spate itself from the context of the research and empirically study the effect of purchasing through the third party on logistics performance in an emerging economy. With an experimental research design, it uses makes a questionnaire for the sole purpose of collecting data from the industry, and in our case focusing on the weaving sector within the textile industry of Pakistan. The research model is based solely based on *hypotheses* and move towards validating empirically the hypotheses through conducting a cross-sectional study. Non-probability doesn't provide any justification for the theory of probability and is not based on random selection.

Purposive sampling simply means that keeping the purpose of the research into consideration, a pre-determined group is targeted from which sample is to be acquired (Apostolopoulos & Liargovas, 2016). Purposive sampling was used to collect that data. Purposive sampling is a non-probability sampling where the total number in the population doesn't have an equal chance of being selected in the sample. With two screening questions included within the questionnaire to screen out organizations that don't purchase through the third party and helps us identify only those organizations which purchase through the third party giving us a standard on which the data is to be collected.

To achieve a reliable set of primary data, this research used a questionnaire to collect responses from the respondents. Sekaran and Bougie (2016) have defined

questionnaire as a set of pre-defined questions for the respondents to answer, and that it is a very functional and effective way of collecting data provided that the questions accurately grasp the requirements and measurement method for all the different variables that are being discussed within the study being conducted.

3.3. Participants and Procedures

As explained by Saunders *et al.* (2016) in their book, a 100% response rate is not possible and hence a sample size should be kept which allows sufficient responses keeping in mind the margin of error. Therefore a table is provided below to evaluate the total population and the number of samples required with the degree of margin of error. The unit of analysis in this study would be the purchasing managers of each weaving concern which can be accessed within Pakistan, and the convenience sampling method would be used for this purpose. The population we have undertaken is the textile companies within Pakistan.

Table 3.1: Screening questions

<table>
<tr><td>1. Does your organization purchase through third party agents' function?</td><td colspan="2">A. Yes</td><td>B. No</td><td colspan="2">• If YES please answer question No.2
• If NO please disregard this questionnaire</td></tr>
<tr><td>2. To what extent do you purchase through these organizations?</td><td colspan="3">A. Partially (purchasing through purchasing agents)</td><td>B. The complete function is managed by external purchasing agents</td><td>• If A please fill the following questionnaire
• If B please disregard this questionnaire</td></tr>
</table>

The textile industry of Pakistan has an overwhelming part in the exports of the country, with a contribution of up to 57 %. The textile industry is the second in terms of employment of labor force within the country, it is also the 8th largest exporter for textile products in Asia and contributes 8.5% to the GDP of Pakistan (Government of Pakistan, 2018). As stated above that the sampling technique used to collect data is purposive sampling and hence two screening questions were included in the questionnaire which are shown in Table 3.1 which helped achieve the target sample within the textile industry. As we focus on the organizations which partially purchase

through the third party to maintain a standard while collecting data. Our focus is primarily on the weaving units currently operating within Pakistan.

3.4. Measures

The official working language of Pakistan is English and hence the questionnaire was developed in the same language. Developing the questionnaire was of key importance here, as this would include questions that truly define the variables and the role of the mediator. The survey questionnaire that was used to collect data from the respondents used a five-point Likert-type scale was used which ranged between 1 = No Extent, 2 = Little Extent, 3 = Moderate Extent, 4 = Large Extent to 5 = Very Large Extent. The questionnaire included items from previously published research for the sole purpose of collecting data on the various variables from the framework.

Purchasing Function – Measure for purchasing through the third party is adapted from the scale used by (Wheele, 1994). To what extent organizations are purchasing through the third party was measure with four items.

Perfect Order Fulfilment of Supplier - Measure for perfect order fulfillment of supplier is adapted from the scale used by (Pitt *et al.*, 1995). Perfect order fulfillment of supplier was measured with seven items.

Flexibility of Supplier - Measure for flexibility of supplier is adapted from the scale used by (Benlian *et al.*, 2011). Flexibility of supplier was measured with six-item.

Sourcing Cost - Measure for sourcing cost is adapted from the scale used by (Stępień *et al.*, 2016). Sourcing Cost was measured with five items.

Purchasing Lead time - Measure for purchasing lead time is adapted from the scale used by (Miller & Doyle, 1987). Purchasing lead time was measured with two items.

External information sharing - Measure for external information sharing has been adapted from (Narasimhan & Kim, 2002). External information sharing was measured with three items.

3.5. Population and Sampling

Newing (2011) has described the population as being a set of sampling units that are of interest to the researcher. While this research would be conducted, data would only be collected once from each unit, as this will be a cross-sectional study, in which the data will be collected through a questionnaire. Each questionnaire accompanied with it an introductory paragraph to explain the purpose of the study and to make the respondents aware of the ethical consideration that had been undertaken by the researcher. In case of any information required, an official email ID and mobile number are provided to easily contact the researcher.

Population and sample size as below

- There are a total of 297 weaving units currently operating in Pakistan (APTMA, 2019)
- Unit of analysis = single employee from the purchasing department of each organization

  N = 297 n = 168 (Saunders *et al.*, 2016) Margin of error = 5 %

  Response rate = 42.26 %
- Total usable responses collected from 71 weaving units within Pakistan

3.6. Reliability Analysis

One of the important factors to consider in research is the reliability of the data being collected. Reliability analysis also considered as an internal consistency analysis is considered to be a measure of the consistency of the items used for data collection. This analysis suggests that if the research is to be conducted again and the same respondents are to be included the chances of getting the same or very similar results are very high. The most common measure used for this is Cronbach's alpha, which has an acceptable value of 0.70 and above as agreed by many researchers such as (O'Leary & Vokurka, 1998).

3.7. Data Analysis Technique

The analytical test included using Partial Least Square Equation Modeling (PLS-SEM) for analysis. Smart pls 3.0 was used for using the data gathered to conduct relevant tests for obtaining results. Both the measurement and structural model was used to obtain relevant results. The complete model was be tested for every result which includes the effect of purchasing through the third party on perfect order fulfillment of supplier, the flexibility of supplier, purchasing lead time, and sourcing cost (H1a, H2a, H3a, and H4a). After that, the mediation effect of external information sharing on the relationship of the independent variable and dependent variables were estimated by (H1b, H2b, H3b, H4b, and H5b).

3.8. Ethical Considerations

Ethics is the research is of key importance, it is of key importance to protect the privacy of the participants as breaching privacy is unethical and illegal while conducting research. For our study, all the participants will be asked to sign the consent form after expressing the basic purpose of the research where every questionnaire will include a brief overview and background of the research being conducted, and all the data will be kept confidential. Participants will also be ensured that the data that is being collected is only for research purposes and will not be given to any other third party. Last but not least the research is faced with the issue of time consumption; this can be tackled by keeping the questionnaire short and relevant to the research and not adding any unnecessary questions. In this particular thesis, the data which is obtained from the respondents has only been accessed by the researcher, and no such information is disclosed to any other individuals or organizations.

Chapter 4: Results and Analysis

This chapter focuses on the analysis and results of the study. The chapter starts with the descriptive statistics which specify the characteristics of the respondents who have participated in this study. Measurement and Structural models are conducted on Smartpls to analyze the data gathered.

4.1. Introduction

This chapter focuses on the results that were gathered by running the different processes on the data that was collected from the relevant respondents. Starting with the descriptive statistics of the respondents followed by the description of the different results obtained through running relevant analysis.

4.2. Descriptive Statistics

As the sampling technique used for conducting the research was purposive sampling. The first two questions in the questionnaire were based on gaining access to the said group of organizations. A total of 71 responses were collected from the different weaving units within Pakistan. When asked about their working tenure in this field, which was measured in the form of group and the statics were 13.3% (0-3 years), 12% (4-6 years), 25.3% (7-10 years), 20% (10-15 years) and 29.3% (More than 15 years). When the question was asked in regards to the number of employees that the business organization had in total the statics were 30.9% (50-250 employees), 19.7% (251-500 employees), 15.5% (501-1000 employees) and 33.8% (Above 1000 employees). The data is collected from major cities of Pakistan, with the highest data being collected from Lahore (33), Faisalabad (16), Karachi (9), Multan (11), Kohat (1) and Sheikhupura (1).

Table 4.1: Number of Employees

	Frequency	Percent
50-250 employees	22	30.9
251-500 employees	14	19.7
501-1000 employees	11	15.4
Above 1000 employees	24	33.8
Total	71	100

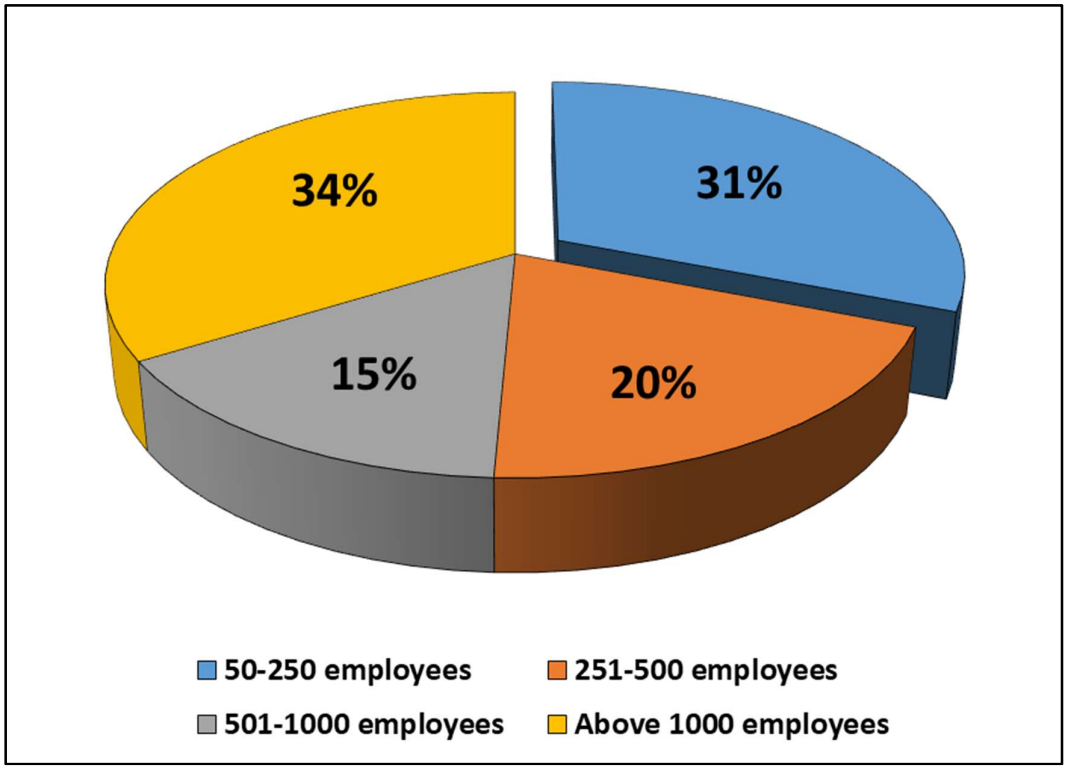

Figure 4.1: Number of employees

Table 4.2: Area-wise Organization

Cities	No. of Organizations
1. Lahore	33
2. Karachi	9
3. Multan	11
4. Faisalabad	16
5. Sheikhupura	1
6. Kohat	1

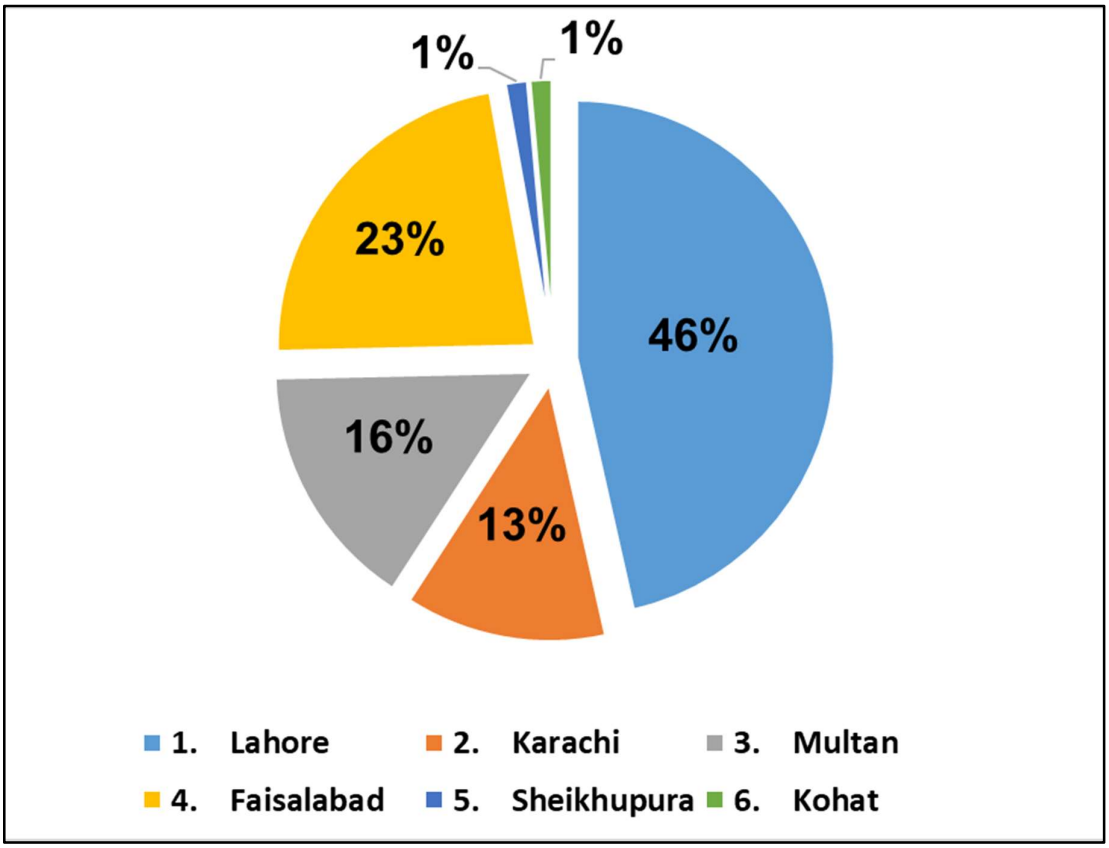

Figure 4.2: Area wise organization

4.3. Partial Least Square Structural Equation Modeling (PLS-SEM)

Partial Least Square Structural Equation Modeling (PLS-SEM) is gaining wide acceptance in different domains of the business studies like supply chain management Kaufmann and Gaeckler (2015); operations management Peng and Lai (2012), international management Richter *et al.* (2012), human resource management (Ringle *et al.*, 2019). There are many software available in the market that uses PLS-SEM for analysis like PLS Graph Chin (2003); R Leisch (2012), and Smart PLS (Ringle *et al.*, 2005).

PLS-SEM is a variance-based approach that can estimate non-recursive, recursive, non-linear, and linear structural models (Dijkstra & Schermelleh, 2014). It can deal with latent variables , emergent constructs Dijkstra and Henseler (2015) and with dummy response with yes or no Schuberth *et al.* (2018) and also higher-order constructs both latent variables and emergent (Van Riel *et al.,* 2017). Initially, PLS-SEM was developed for exploratory research (Wold, 1975), with the recent

developments it has been considered appropriate or suitable for causal, predictive, and descriptive research (Henseler, 2018; Shmeuli *et al.*, 2016). PLS-SEM approach is useful when a study contains a complex model having multiple numbers of constructs, items or indicators, and relationships (paths) without considering data normal distribution. It is also used for predicting causal relationships in a complex model (Sarstedt *et al.*, 2017). This approach is also suitable when the sample size is small (Hair *et al.*, 2017). It can show multicollinearity through Variance Inflation Factor (VIF) in the proposed structural model (Jung & Park, 2018). On the advance level, it can be used to address causes of endogeneity Hult *et al. (* 2018), for making a comparison between groups Sarstedt *et al.* (2011), Importance Performance Map Analysis (IPMA) for indicating construct's performance and importance for providing useful implications (Ringle & Sarstedt, 2016).

Structural Equation Modeling (SEM) works on two levels: measurement or outer level and structural or inner model. The measurement model is used to assess convergent and discriminant validity along with Cronbach alpha and composite reliability of the constructs. The structural model evaluates the Variance Inflation Factor (VIF), coefficient of determination (R^2), effect size (f^2), hypothesis testing through path coefficients.

4.4. Assessment of Measurement Model

The measurement model is presented in Figure 4.3. Following results were obtained for the reporting measurement model:

a) Average Variance Extracted (Convergent Validity)

b) Fornell-Larcker criterion (Discriminant validity)

c) Cronbach alpha

d) Composite reliability

e) Outer loadings (indicators)

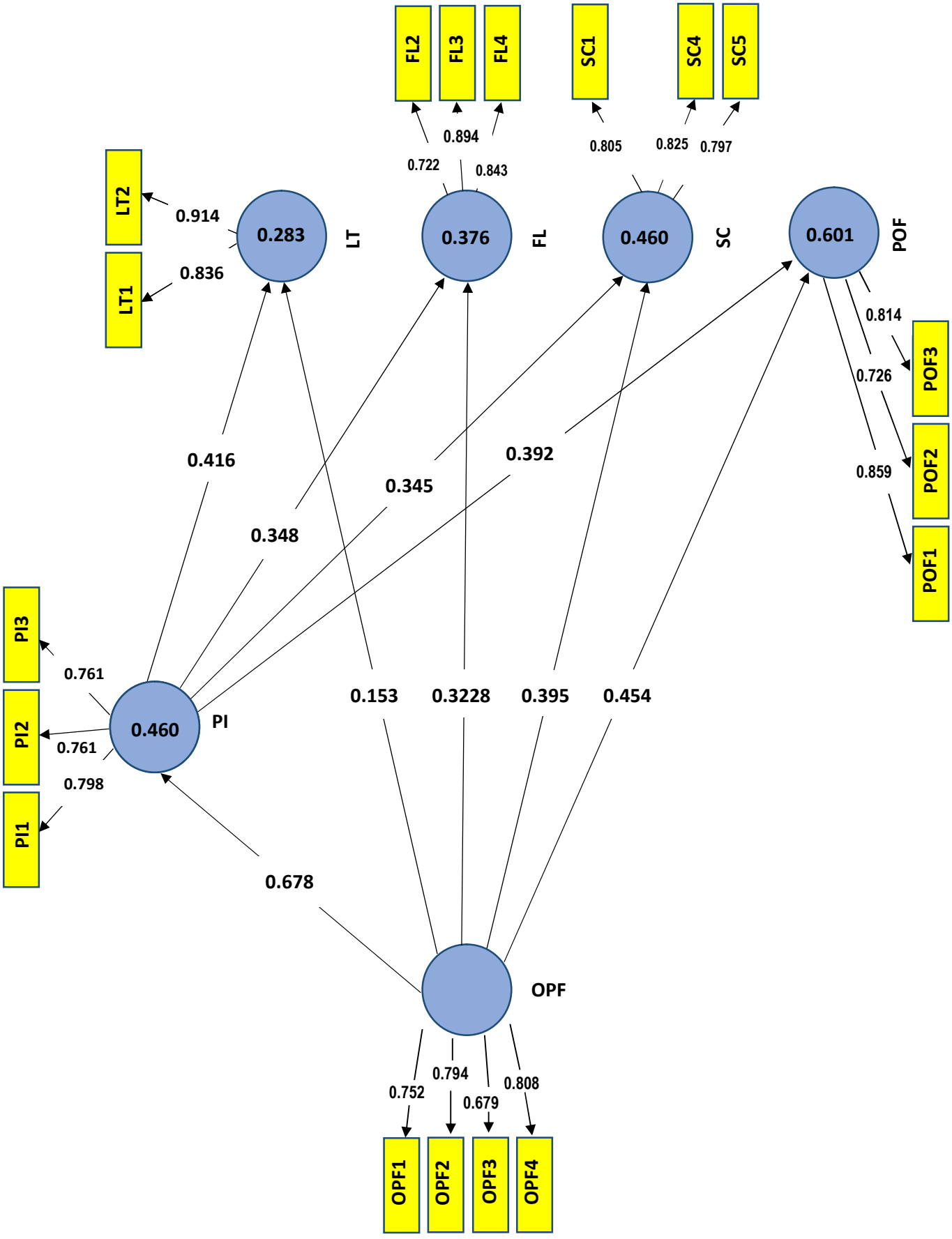

Figure 4.3: Measurement model

4.4.1. Convergent Validity

Convergent validity of the constructs (latent variables) was measured through Average Variance Extracted (AVE). AVE shows that at least 50% of the variation in that particular construct is explained by the indicators. AVE value should be above 0.50 as shown in table 4.3. It can be seen that all AVE values are above 0.50 indicating the presence of convergent validity (Hair *et al.*, 2017).

Table 4.3: Average Variance extracted (AVE) values of the constructs

Constructs	AVE
FL	0.65
LT	0.77
OPF	0.58
PI	0.66
POF	0.64
SC	0.66

4.4.2. Discriminant Validity

Fornell and Larcker (1981) criteria was used to assess the discriminant validity of all the constructs. Discriminant validity shows that one construct differentiates or distinguishes from other constructs. As criteria, the square root of AVE should be higher than the correlation values among the other constructs used in the model. All the values met the criteria showing no issue of discriminant validity as shown in table 4.4.

Table 4.4: Fornell-Larcker criteria

Constructs	FL	LT	OPF	PI	POF	SC
FL	0.807					
LT	0.314	0.876				
OPF	0.558	0.436	0.76			
PI	0.566	0.52	0.678	0.811		
POF	0.745	0.523	0.72	0.7	0.802	
SC	0.807	0.313	0.629	0.613	0.795	0.809

4.4.3. Cronbach's Alpha

Cronbach's alpha shows the lower limit of reliability of the constructs used in the study. According to Hair *et al.* (2017), Cronbach's alpha values higher than 0.70 are considered satisfactory. However, values between 0.60 and 0.70 are acceptable

in case of exploratory research. It can be observed that all values of Cronbach's alpha were above 0.70 showing the presence of reliability in table 4.5.

Table 4.5: Cronbach alpha values of all the constructs

Constructs	Cronbach Alpha
FL	0.736
LT	0.703
OPF	0.756
PI	0.739
POF	0.719
SC	0.739

4.4.4. Composite Reliability

Composite reliability of the constructs shows the upper limit of the reliability. According to Hair *et al.* (2017), composite reliability values higher than 0.70 are considered satisfactory. However, values between 0.60 and 0.70 are acceptable in case of exploratory research. It can be observed that all values of composite reliability were above 0.70 showing the presence of reliability in table 4.6.

Table 4.6: Composite Reliability

Constructs	Composite Reliability
FL	0.848
LT	0.868
OPF	0.845
PI	0.852
POF	0.843
SC	0.851

4.4.5. Factor Loadings

Outer or factor loadings of every indicator show variance explained by them to their respective construct. Outer loading higher than 0.70 is considered satisfactory. If the values are below 0.40, it should be removed or deleted from the model, outer loadings between 0.40 and 0.70 can be kept in the model provided AVE value is higher than 0.50 (Hair *et al.*, 2017). In the given model, FL1, FL5, FL6, POF4, POF5, SC2, SC3 were removed to bring AVE in the acceptable range given in table 4.7.

Table 4.7: Factor Loadings

	FL	LT	OPF	PI	POF	SC
FL2	0.722					
FL3	0.849					
FL4	0.843					
LT1		0.836				
LT2		0.914				
OPF1			0.752			
OPF2			0.794			
OPF3			0.679			
OPF4			0.808			
PI1				0.798		
PI2				0.761		
PI3				0.872		
POF1					0.859	
POF2					0.726	
POF3					0.814	
SC1						0.805
SC4						0.825
SC5						0.797

4.5. Structural Model

The structural model focuses on testing the hypothesized relationships given in the model. The structural model evaluates the following:

a) Variance Inflation Factor (VIF)
b) Coefficient of determination (R^2)
c) Effect size (f^2)
d) Hypothesis testing through path coefficients

4.5.1 Variance Inflation Factor (VIF)

Multicollinearity among the indicators or items of the constructs was assessed through the Variance Inflation Factor (VIF). The value of VIF should be less than 5.00 for every indicator (Hair *et al.*, 2017). It can be seen in Table 4.8 that all values were within range i.e. less than 5 indicating no issue of multicollinearity.

Table 4.8: VIF values for all indicators

Items	VIF
FL2	1.4
FL3	1.62
FL4	1.45
LT1	1.42
LT2	1.42
OPF1	1.54
OPF2	1.6
OPF3	1.29
OPF4	1.48
PI1	1.48
PI2	1.39
PI3	1.73
POF1	2
POF2	1.18
POF3	1.9
SC1	1.51
SC4	1.39
SC5	1.52

4.5.2 Coefficient of determination (R Square)

The coefficient of determination (R-square) shows the predictive accuracy of the structural model. Its value varies between 0 and 1 where 0 means no predictive accuracy and 1 indicates the highest predictive accuracy. The coefficient of determination reflects the combined effects of all exogenous constructs on endogenous constructs. According to Cohen *et al.* (1989), R-square values of 0.02, 0.13, and 0.26 categorized as weak, moderate, high respectively. It can be observed from Table 4.9 given below that all R square values were above 0.26 indicating substantial effects of all exogenous constructs on endogenous ones.

Table 4.9: R square values for all the constructs

Constructs	R Square Values
FL	0.376
LT	0.283
PI	0.46
POF	0.601
SC	0.46

4.5.3 Effect Size (F-Square)

Effect size (F square) reflects the change in R square value when a specific construct is removed from the model (Hair *et al.*, 2014). 0.35, 0.15, and 0.02 shows substantial, moderate, and weak effect size (Cohen, 1988). Effect size from OPF to LT was weak, whereas from PI to FL, OPF to LT, PI to LT, PI to SC had medium and OPF to CT, OPF to PI, OPF to POF, PI to POF, OPF to SC had large effect size as given in table 4.10.

Table 4.10: Effect sizes for all hypothesized relationships

Constructs	FL	LT	OPF	PI	POF	SC
FL						
LT						
OPF	0.09	0.018		0.85	0.279	0.156
PI	0.105	0.131			0.208	0.119
POF						
SC						

4.5.4 Hypothesis Testing

Bootstrapping command was used for the software using a subsample size of 2000 for testing hypothesized relationships indicating estimate parameters. For all direct relationships, t value more than 1.96 and p-value less than 0.05 with one tail were considered for showing the significance of the hypothesized relationship. In table 4.11 given below, all direct relationships except OPF to LT was found to be insignificant as the t values were above 1.96 and p values less than 0.05 and different path coefficients.

Table 4.11: Direct relationships

Relationships	Beta	SD	T value	P-value
OPF -> FL	0.321	0.137	2.34	0.019
OPF -> LT	0.153	0.142	1.082	0.28
OPF -> PI	0.678	0.079	8.605	0
OPF -> POF	0.454	0.118	3.854	0
OPF -> SC	0.396	0.125	3.169	0.002
PI -> FL	0.348	0.127	2.736	0.006
PI -> LT	0.417	0.16	2.602	0.009
PI -> POF	0.391	0.121	3.238	0.001
PI -> SC	0.344	0.122	2.822	0.005

Specific indirect effects were reported for checking mediating relationships using t value more than 1.96 and a p-value less than 0.05 with two tail was taken into account (Memon *et al.*, 2018). All four hypothesis related to mediation was accepted as criteria were met (t values more than 1.96, p values less than 0.05, different beta values), as shown in table 4.12 below.

Table 4.12: Mediating relationships

Relationships	Beta	SD	T value	P-value
OPF -> PI -> FL	0.236	0.093	2.537	0.011
OPF -> PI -> LT	0.283	0.12	2.353	0.019
OPF -> PI -> POF	0.265	0.095	2.789	0.005
OPF -> PI -> SC	0.233	0.09	2.606	0.009

Table 4.13: Hypotheses

No.	Hypotheses	Result
H1a	The significant impact of purchasing through the third party on perfect order fulfillment	Accepted
H2a	The significant impact of purchasing through the third party on flexibility	Accepted
H3a	The significant impact of purchasing through the third party on the cost of sourcing (sourcing cost)	Accepted
H4a	The significant impact of purchasing through the third party on purchasing lead time	Rejected
H1b	External information sharing mediates the relationship between purchasing through a third party and perfect order fulfillment	Accepted
H2b	External information sharing mediates the relationship between purchasing through third party and flexibility	Accepted
H3b	External information sharing mediates the relationship between purchasing through third party and cost to the source (sourcing Cost)	Accepted
H4b	External information sharing mediates the relationship between purchasing through the third party and purchasing lead time	Accepted

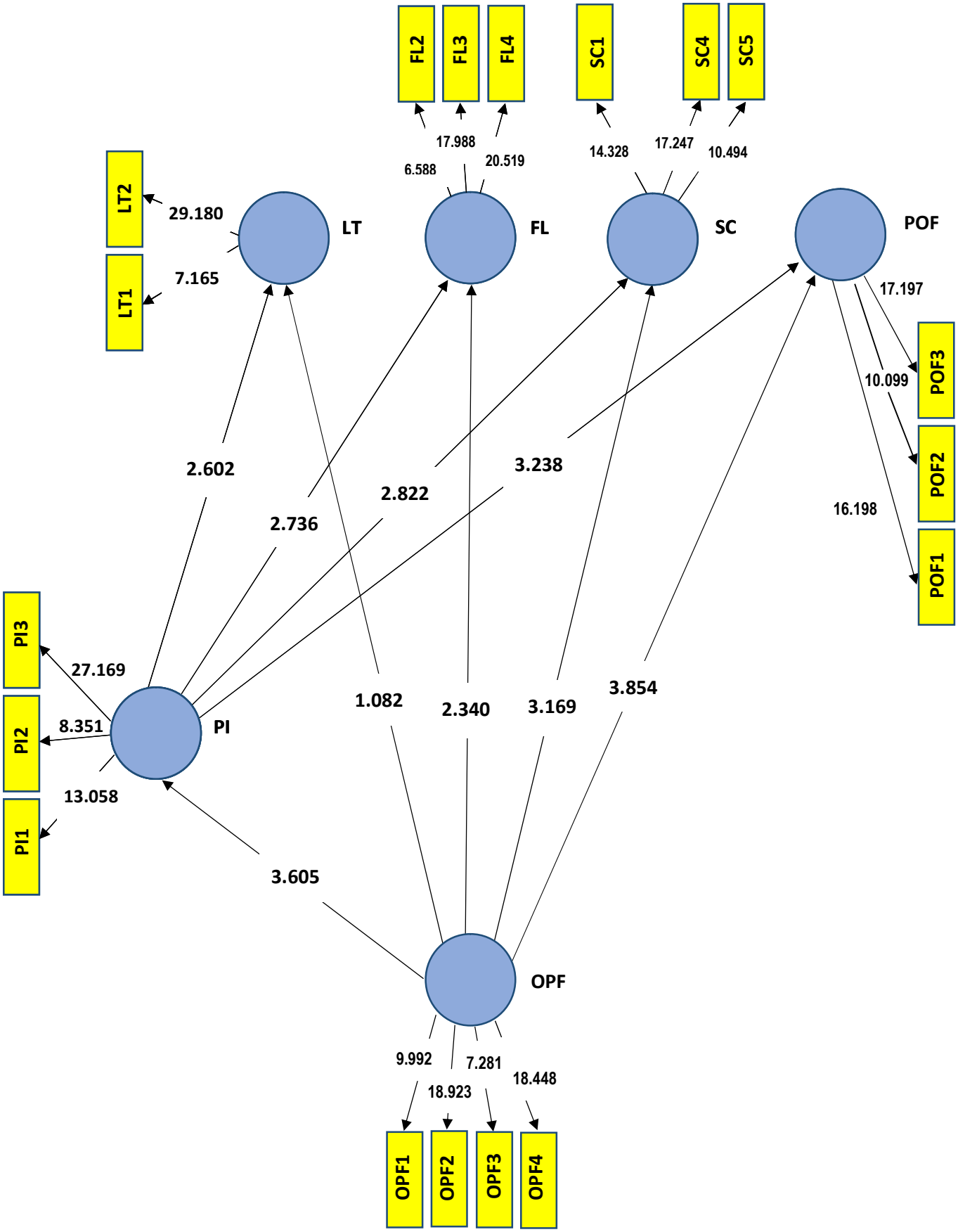

Figure 4.4: Structural model for all hypothesis

Chapter 5: Discussion, Limitations and Future Recommendations

This chapter focuses on the findings and discussion of the research that we have conducted. It discusses the importance of the research study and the relationship between different variables included in the research study. It also discusses the limitations that the study had and provides recommendations for further research.

5.1. Discussion

In a developing economy such as Pakistan, businesses must focus on the strategic alliance to gain or maintain their competitive advantage in the market. Purchasing in this regard is crucial as a tool to enhance business performance as well as using it to further its business objectives. This study primarily aimed at examining the effect of purchasing through a third party and its impact on logistics performance. However, this study also aimed at examining the role that external information sharing plays between purchasing through a third party and its impact on logistics performance. On the other hand, the choice to use perfect order fulfillment of supplier, sourcing cost, lead time of purchasing and flexibility of supplier as variables associated with logistics performance was based on the recognition of the fact that these variables play a crucial role and significantly impact the performance of an organization.

This study focuses on the textile industry and in particular the weaving sector within the textile industry, as it is one of the largest industries within Pakistan. The scale of purchasing done by different organizations in this sector is very large. Also, a large workforce is employed by the textile industry of Pakistan. To avoid any error or confusion the product purchased was narrowed down to only one, which is the yarn that is purchased by the weaving sector solely. Similarly, the unit of analysis was employees from the purchasing department within each organization and for that purpose, only a single questionnaire was filled from each weaving unit. Furthermore, our literature was based on previous relevant research work on purchasing through third party and logistics performance. SCOR model is one such model that has extensive work towards continuous improvement, it helps businesses

better manage their supply chain with a focus on Key performance indicators (KPI). Similarly, the principle-agent theory which focuses on the interest of principal and agent is the same to create a win-win situation for both the parties involved. Our choice of using variables such as perfect order fulfillment of supplier, the flexibility of supplier, sourcing cost, and lead time as logistics performance is based on literature which says that to measure performance like logistics these are the most talked-about KPI's which need to be considered and discussed.

The current study examines the effects of purchasing yarn through the third party on logistics performance. The data collected from the weaving sector of Pakistan reveals that purchasing through the third party has a significant influence on perfect order fulfillment of supplier, the flexibility of supplier, and cost of sourcing Hypothesis H1a, H2a, H3a, and H4a are accepted as the direct effects of purchasing through the third party are supported by current findings.

Results of H1a are consistent with findings and suggestions of past studies e.g. (Liu & Lyons, 2011; McCarthy, 2013). These researchers also supported the argument that purchasing through the third party enhances the ability to fulfill orders perfectly. Results of H2a are in line with the findings and suggestions of Liu and Liu (2008) who supported the argument that purchasing through a third party enhances the ability to fulfill orders rapidly and efficiently. Similarly, findings regarding H3a and H4a are also aligned with suggestions of Liu and Liu (2008), Swafford *et al.* (2007), Katayama and Bennett (1999), and Lai *et al.* (2002) who directly or indirectly linked the purchasing through the third party with the flexibility of supplier and sourcing cost in logistics. Our findings reveal that a direct effect of purchasing through the third party shows a significant impact on perfect order fulfillment of supplier, the flexibility of supplier, and sourcing cost. The findings are as per Magutu *et al.* (2013) who in his paper found that purchasing through the third party enables organizations to achieve cost savings by maintaining the same level of customer service.

On the other hand, it doesn't have a significant impact on purchasing lead time. Results regarding H5a reveal that purchasing through the third party does not significantly affect the purchasing lead-time so, this hypothesis is rejected based on current findings. It means that the purchasing lead-time is independent of purchasing through the third party so, purchasing through the third party does not play any

significant role in reducing or increasing the lead-time. These results are though contrary to some past findings but they find theoretical support from studies of Bowersox and Closs (2010) and Jonsson (2008) who indirectly linked the lead-time with the price only.

However, these results are contrary to the findings of Clark (1989) and Luo *et al.* (2009) who suggested that the choice of supplier is much associated with the lead-time. This difference of findings may be attributed to the difference of context between studies because the choice of supplier may not be as important for the lead-time in Pakistan as in other countries. The other reason that this may be the case would be that businesses tend to keep a credible margin before purchasing orders through the third party and hence don't place such a high level of importance on lead time.

With the role of external information sharing playing its part as a mediator, we ran the test to test the hypotheses developed through our model. Our findings revealed that the adoption of external information sharing as a mediator does lead to a significant impact on logistics performance for perfect order fulfillment of supplier, the flexibility of supplier, sourcing cost and the lead time. The second category of hypotheses was about the mediating role of external information sharing between purchasing through the third party and logistics performance indicators. It is found in the current study that purchasing through the third party significantly affects the process integration, which in turn, affects the perfect order fulfillment of supplier, flexibility of supplier, sourcing cost, and purchasing lead-time. Hence, our study shows that the external information sharing is a significant mediator between purchasing through a third party and perfect order fulfillment of supplier, purchasing through the third party and purchasing through third party and flexibility of supplier, purchasing through third party and sourcing cost, and purchasing through the third party and purchasing lead-time.

Therefore, H1b, H2b, H3b, H4b, and H5b are accepted based on current results. These results find enough theoretical support from past studies discussed in the literature e.g. Forslund and Jonsson (2007), Gunasekaran *et al.* (2017) and (Huiskonen & Pirttilä 2002*,* Liu *et al.*, 2015; Papakiriakopoulos & Pramatari, 2010). These past studies also suggested that external information sharing has the potential

to affect different logistics performance indicators so, all current findings are aligned with previous findings.

We selected the textile industry to conduct this research as one of the largest industries in Pakistan and it employs large work. We opted for the weaving sector as it is one the largest sector which relies on third-party agents for its purchasing needs. This study makes significant practical contributions by highlighting the need to approach purchasing through a third party more strategically. It presents a quantitative analysis to help organizations understand the significance of purchasing through a third party. It also helps understand the variables which are affected by purchasing through a third party. Purchasing lead time in our study doesn't show significance in association with purchasing through a third party. On the other hand, POF, OFCT, FL, and SC do show significance in association with the purchasing through the third party. Lastly looking at the mediating effect of process integration, it can be seen through our analysis the indirect showed significance in respect to POF, OFCT, FL, SC, and LT.

5.2. Limitations of the Study

This study has answered the questions regarding the effect of the purchasing through a third-party and the impact it has on the logistics performance in the weaving sector of the textile industry. By taking into consideration the mediating role of external information sharing and how does this impact the effect of purchasing through a third party on logistics performance. However, despite answering a very important and underexplored area of study and connection between these different constructs, this research also has certain limitations. The first limitation is associated with the design adopted for the study i.e. cross-sectional study. This means that the data was collected for the study at one particular time, therefore, it doesn't take into consideration the temporal effects. Also, the requirement or expectation of purchasing through a third party may change over time. The second limitation is that this study only focuses on the weaving sector within the textile industry of Pakistan. The other sectors are neglected.

As only one industry is taken into consideration, therefore results cannot be generalized for other industries operating in Pakistan. One of the key limitations of this study is that the organizations were not given an equal opportunity to be

selected in the sample, due to the purposive sampling technique that was used in our research. Another limitation is associated with the different sizes of each organization, which can affect the findings of this research. While conducting the survey this factor wasn't taken into consideration. Hence it could be possible that different sizes of organizations might yield different findings associated with the effect of purchasing through the third party.

5.3. Future Recommendations

Considering the limitation of this study, a multilevel or longitudinal study is advised to be conducted in the future. This would help the researchers to overcome any biases that might have been associated with the cross-sectional design. This would also help future researches to make a comparison in association with different research designs adopted. Moreover, a future study can be carried out in the different sectors within the textile industry of Pakistan i.e. spinning. This would again help gain a comparison between the same industries but different sectors. Also, the study can be carried out in different industries i.e. retail. This would again help provide a comparison between the different industries. Moreover, the future study can focus on a comparative analysis between the different sizes with the same sector, for example, Small medium enterprises (SME) and large scale enterprises. Similarly, future research can focus on other functional areas (e.g. operations) to test the effect of purchasing through the third party and how does it impact both external and internal stakeholders. Lastly, this study has been conducted in an emerging economy, which is Pakistan. Future researchers can focus on conducting a similar study in a developed economy and see what, if any, difference arises in the findings or results.

5.4. Conclusion

Building on the study associated with purchasing through third party and logistics performance, this research focused on answering the call for further research in this particular area. It also answered the call for studying the underlying meaning that might exist in which external information sharing in taken consideration as a mediator. This research study aimed at identifying the mediating role that external information sharing might have or play in the relationship between

purchasing through a third party and logistics performance (POF, OFCT, FL, and SC & LT). Data was collected from the purchasing department employees from each weaving unit within the textile industry of Pakistan. Overall, this study from a perspective of research opens up multiple avenues for future researchers to work. They can focus on linking different concepts from different areas to study the phenomena of purchasing through the third party. Lastly, from a perspective of a professional, it featured the need to consider purchasing through the third party as a strategic business objective which can ultimately lead to sustainable competitive advantages for any business organization.

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Annexure A (Questionnaire)

Dear Sir/Madam,

Kindly participate in this study which is part of my master's research thesis. The purpose of this study is to understand the **effect of purchasing through the third party of yarn on logistics performance in the weaving sector of Pakistan.** Your participation will be highly appreciated, please note that this research is focused only on the weaving sector within the industry. Please be assured of the utmost confidentiality and anonymity regarding the information being shared through this questionnaire. The data being collected will only be used for academic purposes. If you have concerns or questions regarding this, please feel free to contact me on waleed.mscm17@nbs.nust.edu.pk or my mobile number 0300-5010001.

Regards,

Waleed Tariq Butt

National University of Sciences and Technology (NUST), Islamabad

Instructions:

- *Please fill all the questions and do not leave anything blank.*
- *Please tick only one option against each question.*

Part A

The following information is concerned about your position and organization. Please tick the appropriate one.

1. Does your organization purchase through third party agents' function?	**A.** Yes	**B.** No	• If **YES** please answer question **No.2** • If **NO** please disregard this questionnaire	
2. To what extent do you purchase through these organizations?	**A.** Partially (purchasing through purchasing agents)		**B.** The complete function is managed by external purchasing agents	• If **A** please fill the following questionnaire • If **B** please disregard this questionnaire

Tick as appropriate using the following Likert scale of 1-5 where:

1= No Extent; 2= Little Extent; 3= Moderate Extent; 4= Large Extent; 5=Very Large Extent.

To what extent is the organization purchasing through a third party the following activities (To Purchasing Agents)					
	1	**2**	**3**	**4**	**5**
1. Evaluation of prices					
2. Supplier selection					
3. Negotiation services					
4. All paperwork (contract related)					

Part B

Tick as appropriate using the following Likert scale of 1-5 where:

1= No Extent; 2= Little Extent; 3= Moderate Extent; 4= Large Extent; 5=Very Large Extent.

To what extent has purchasing through the third party had an impact on your external information sharing					
	1	**2**	**3**	**4**	**5**
1. We conduct joint planning to anticipate and resolve operational problems with our major purchasing agents					
2. Our major purchasing agents are linked to our system so information is accessible to them also					
3. Information System has made it possible to coordinate better with our purchasing agents					

Please indicate the extent of the effect of *purchasing through the third party* on:

Purchasing Lead time					
	1	**2**	**3**	**4**	**5**
1. Significant reduction in lead time					
2. Our organizations hand over time (delivery time to our customers) has reduced significantly					

Cost of sourcing (Sourcing Cost)					
	1	**2**	**3**	**4**	**5**
1. Higher savings due to zero or minimal cost associated with searching of suppliers					
2. Higher savings due to no or minimal cost associated with the evaluation of suppliers					
3. Higher savings due to no or minimal planning cost					
4. Higher savings due to no or minimal negotiation cost					
5. Profitability has increased					

Perfect Order Fulfillment of supplier					
	1	**2**	**3**	**4**	**5**
1. Receive our order with zero or minimal damage					
2. Receive our order as per contracted specifications					
3. Receive our order on time					
4. Receive our order with complete documentation that are required with delivery					
5. Receive consistent service in terms of purchasing of the product					
6. Product quality is consistent within each order					
7. Urgent deliveries don't lead to compromise on quality					

The flexibility of supplier in Logistics Performance					
	1	**2**	**3**	**4**	**5**
1. In terms of putting in extra effort to help us during emergencies					
2. In terms of providing emergency deliveries on short notices					
3. In terms of readily adjusting its operations to meet unforeseen needs that might occur					
4. In terms of handling changes to the whole order					
5. In response to requests, we make regarding delivery time					
6. In terms of handling changes in order size easily					

Thank you for participating in this study.

If you would like to receive the results of this study, please mention the name of your organization and your official email below.

Name of the Organization:

Email ID: