



ADDIS ABABA UNIVERSITY
SCHOOL OF COMMERCE
LOGISTIC AND SUPPLY CHAIN MANAGEMENT

**THE EFFECT OF STRATEGIC SUPPLIER RELATIONSHIP
MANAGEMENT ON SUPPLY CHAIN PERFORMANCE: THE
CASE OF PHARMACEUTICAL FUND AND SUPPLY AGENCY
ETHIOPIA**

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Logistic and Supply Chain Management

**The Effect of Strategic Supplier Relationship Management on
Supply Chain Performance: The Case of Pharmaceutical Fund and
Supply Agency Ethiopia**

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Addis Ababa, Ethiopia

The Effect of Strategic Supplier Relationship Management on Supply Chain Performance: The Case of Pharmaceutical Fund and Supply Agency Ethiopia

Master of Arts in Logistics and Supply Chain Management

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ABSTRACT

This study was aimed at filling the gaps on how strategical supplier relation management could be used to enhance the performance of the PFSA, Ethiopia. The study was guided by the following research objectives, to: determine the effect of collaboration on the performance of organizations and to determine the effects of technology in the performance of an organization. The study adopted a survey and targeted the tender management and the contract management directorate staff of PFSA Ethiopia, head quarter Addis Ketema sub city. The research employed a census study design. The questionnaires were issued to the two directorate staff by drop and pick later. Descriptive statistics was used aided by SPSS to analyze the quantitative data. The study used descriptive and multiple regression analysis to determine the relationship between strategical supplier relationship and the supply chain performance of the agency. This research indicated that by adopting collaborative relationship and technology with their supplier contribute to enhanced supply chain performance.

Key words: Strategical supplier relationship management, PFSA, collaboration, supply chain performance

DECLARATION

I hereby declared that the work which is being presented in this thesis titled “The Effect of Strategic Supplier Relationship Management on Supply Chain Performance: The Case of Pharmaceutical Fund and Supply Agency Ethiopia” is original work of my own, has not been presented for a degree to any other university and all the materials used for the thesis have been duly acknowledge.

Kidist Fikadu

(Candidate)

Date

This is to certify that the above declaration made by the candidate is correct to the best of my knowledge.

Dr. Mengistu Bogale

(Thesis Advisor)

Date

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LIST OF ABBREVIATIONS AND ACRONYMS

| | |
|--------------|--|
| CRM | Customer Relationship Management |
| FMOH | Federal Ministry of Health |
| LC | Letter of Credits |
| PFSA | Pharmaceuticals Fund and Supply Agency |
| SC | Supply Chain |
| SCM | Supply Chain Management |
| SRM | Supplier Relationship Management |
| USAID | United States Agency for International Development |

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CHAPTER ONE - INTRODUCTION

1.1 Historical Background of the Study

As the modern business environment becomes almost borderless, we are witnessing broad supply chain strategies that can turn the complex processes and chains in to simple and more manageable. The strategic view of managing supply chains has assumed paramount importance, especially since such a complex environment has effectively shifted the focus of competition from a firm versus-firm to a supply chain-versus-supply chain (Sufian & Tarafdar, 2013).

Strategic supplier management is the emerging mode of supplier relationships in which, suppliers are integrated with the supply chain organization as integrated partners (direct and indirect) that share the risks and benefits while running their business operations. SRM is essentially the process for organizations determining the supply categories that are important and creating the strategies that manage these items in an intelligent fashion. Its principles are similar to managing joint ventures although with a specific focus on managing continuous flow of supplies at each echelon of the supply chain (Sarkis & Talluri, 2002).

Supplier Relationship Management (or SRM) came into life in 1983 when McKinsey consultant Peter Kraljic called for corporate buyers to grow more proactive in supply management. He argued that buyers should look to understand their categories' risk and profitability impact upon a company and devise supplier management strategies that best meet this need. As an example, stationery supplies do not impact the company's profitability, nor does its absence represent a significant risk. However, should Foxconn, a major technology manufacturer, suffer a shutdown, this creates a major risk to the operations of the big-name brands it supplies, such as Apple. Indeed, so closely intertwined are Foxconn's and Apple's fates, that they are considered to have a strategic alliance. These strategic partnerships assume a major commitment from a buying organization. They require executive sponsorship, careful cross-planning and involve a great number of meetings. Managing these relationships demand substantial more effort than stationery contracts.(Webb, 2017)

Supplier Relationship Management (SRM) which emerged as a term or an idea only a few years ago has rapidly gained traction in the marketplace. Presentations on SRM are by now standard fare at most procurement and sourcing conferences. In March of 2005, the Conference Board hosted its first conference devoted specifically to SRM. But as with many big business ideas, reality falls short of hype. For example, few companies have yet implemented a formal SRM function within their Procurement organization. (Hughes, 2004)

Despite the documented success stories, buyers are reluctant to abandon old habits. Some argue that good purchasing practice demands that a buyer seek multiple bids from qualified suppliers to be assured of a competitive price. Others are nervous as basing their fears on the problems of supplier nonperformance. These arguments range from the subtle implications of too much dependence on one supplier to the obvious effects of late shipments. Vendor evaluation is a traditional approach which tends to emphasize purchasing efficiency and revolve around quality, price, and delivery. Although these are important concerns, they do not cover all the issues upon which a good long-term partnership should be based. The need should be to select suppliers who, at the very least, are competent, reliable, and strong competitors. The next step towards procurement excellence is to adopt a value-driven orientation with external/supplier collaboration as a key cornerstone (Spekman, 1988).

A maturing stream of recent conceptual literature has focused upon supply chain partnerships that theoretically within a supply chain partnership, traditional competitive barriers between supply chain members are mitigated to create mutually beneficial relationships, thus leading to increased information flows, reduced uncertainty, and a more profitable supply chain. Selection of strategic partners which provides the right products in a timely and effective manner has been one of the critical challenges faced by purchasing managers. Thus, these challenges have shifted many literatures and the researcher to focus on the effects of applying strategic supplier relationship management on the performance of organizations. (Hughes, 2004)

1.2 Background of the Study Organization

Pharmaceuticals Fund and Supply Agency, PFSA, is legal entity established under the law of Federal Democratic Republic of Ethiopia Government to overcome the problems and assure uninterrupted supply of pharmaceuticals to the public at an affordable price. The Pharmaceuticals Fund and Supply Agency was established in September 2007 by Proclamation No. 553/2007 as part of Pharmaceutical Logistic Master Plan implementation with the following objectives:

- I. To enable public health institutions to supply quality assured essential pharmaceuticals at affordable prices in a sustainable manner to the public;
- II. To play a complementary role in developmental efforts for health service expansion and strengthening by ensuring enhanced and sustainable supply of pharmaceuticals;
- III. To create enabling conditions for enhancing the accumulation of funds in its revolving and cost recovery process and thereby ensure the realization of the objectives. (PFSA, 2016)

It was organized in three technical processes (forecasting and capacity building, procurement, storage and distribution), and three support processes (fund management, management information system, and human resource and general service). Currently, PFSA has 17 functional and 2 under establishment branches and covers all regions and city administrations of the country. The branches and its activities are working beyond the political regional boundaries. Currently a branch may serve from 1 to 4 regions or city administrations. General Director and two deputy general directors manage who reports to the board. The members of the board are selected from parliamentarian, Prime Minister Office, regions, FMOH and other ministries. Moreover, PFSA reports to FMOH and the parliaments.

Pharmaceuticals Fund and Supply Agency is a governmental organization established to ensure the supply of safe and quality assured Drugs, Medical Supplies, Laboratory Reagents & Diagnostics and Medical Equipment to all public health facilities in Ethiopia. It mainly supplies to Governmental Hospitals which are found in many regions of Ethiopia, it is the primary supplier for the Governmental Hospitals. The private health sectors are also provided with the agency but not that much. (NegaritGazeta, 2007)

1.3 Statement of the Problem

The PFSA, as procurement organization, purchases the products from all around the world and from local suppliers. It distributes to the governmental hospitals through the respective branch in the region. Researchers have been done on the supply chain performance and the challenges of supply chain management in the agency. Even though the agency tries to improve delivery of the right medicine at the right time with reduced cost but still problems are observed due to different reasons. As an initial observation, the year 2015 and 2016 financial and supply chain reports indicated that the procurement practices of the PFSA showed that there is a challenging situation in relation to suppliers. The agency faces a high cost in product procurement in most cases. This is observed by reviewing the reports. Such problems are delayed delivery from the suppliers which leads to an expiry of Letter of Credit (LC) and extending this will cost extra. Again according to the reports of the half 2017 year, it showed that there was a cancelation of contracts with a supplier because of the supplier's inability to deliver the products at the right time.

Consequently, supply chain related problems can be observed in different types, supplier's inability to provide regular price reduction; price reduction as a constraint on supplier's investments in improvements, difficulty in controlling quality, delivery and time to market and insufficient support for operational development and collaborative relationship.

Based on the informal interview with some of the professionals from the PFSA head quarter, the supplier-buyer relationships that the agency has, is not as such strong, even though contracts are made, there is still failure of the suppliers to go with the terms of the contracts until the end, sometimes the supplier that promised to supply products may even be out of stock at all at the contract time. Some suppliers provide price quotation without anything available on their hand or sometimes with below market prices just to win the tender, but after they are selected they cannot provide the products that they said they will.

Even if the agency has operative and capable flows of products and services, information, money and decisions, insufficient results of the health service is observed as a result of the lack of synergy and direction in the strategic partnership besides other factors that may affect the supply chain performance of the agency. Cost effective and adequate supply of pharmaceuticals, in a timely manner are the core processes of the agency and these calls for well-organized supply

chain management directing and focusing on strategic supplier relationship management beginning from strategic supplier selection up to maintaining the relationship through all stages of the contract. These observation and concerns were what motivated the researcher to conduct the research.

1.4 Research Questions

The research questions mainly points at:

- How supplier collaboration affects the supply Chain performance of the agency?
- How technology affects the SC performance of the agency?

1.5 Objectives of the Study

1.5.1 General Objectives

The General objective of this study is to assess the effects of strategic supplier relationship management on the supply chain performance of the PFSA.

1.5.2 Specific Objectives

The study has the following specific objectives

- To describe the effect of supplier collaboration on the performance of agency,
- To describe the effects of technology in the performance of an agency,

1.6 Significance of the Study

The study is intended to increase an understanding of the complex strategical supplier relationship management and suggested ways through which supply chain performance efficiency can be enhance through supplier relationship. The study is beneficial to upcoming researchers who are interested in conducting studies in this or related field. This is due to the fact that the findings of this study formed part of rich literature on the strategic supplier relationship and supply chain performance. It can be a learning model for the PFSA to understand effective supplier integration and collaborative relationships.

1.7 Scope of the study

The researcher delimits the study only to the PFSA Ethiopia Head quarter. The researcher thinks that the main representative for the supplier relationship management, are the Tender management and Contract Management teams, which is why the researcher took all of these two departments' staffs as the sample population.

Many researches on the supplier relationship management have used many parameters to define the variables for the supplier relationship management. Handfield & Bechtel, (2002) used Trust, Contracts, Site-specific Assets, Buyer-dependency, Human- specific assets and responsiveness as the variables. Onyango et al (2015) used Joint Decision Making and Communication as the independent variables for the SSRM. Based on literatures this study focused on supplier collaboration and Technology as the independent variables and the dependent variables measuring the supply chain performance of the Agency.

1.8 Definition of Terms

Purchasing is the transactional function or activity of buying needed goods or services. This involves placing and processing purchase orders or requisitions. (Wallace & Xia, 2014)

Procurement is the management of a broad range of processes that are associated with an organization's desire to obtain the necessary goods and services needed for manufacturing a product, transforming inputs to outputs, or indirectly operating the organization. (Wallace & Xia, 2014)

Strategic sourcing is a broader, more transformational process, performed at a higher organizational level. Strategic sourcing takes the procurement process further, examining the whole supply network, its linkages, and how they impact procurement and purchasing decisions. The focus is more on the Tier 1 supply network, value creation, risk, and uncertainty in the supply chain and the overall responsiveness and resilience of the supply chain (Wallace & Xia, 2014).

CHAPTER TWO - LITERATURE REVIEW

2.1. Theoretical Review

2.1.2. Strategic Supplier Relationship Management

According to Hojbjerg 2013, SSRM is focused on creating close partnerships with an enterprise's most important customers. The focus with SSRM is on the most important suppliers and how one can build and maintain partnerships with them that provide a high degree of competitive differentiation for the company in the marketplace. It involves things like developing 3-5 year business plans with key suppliers and updating them annually; working more closely with suppliers on activities from product development to demand forecasting; and putting in place dedicated relationship managers who spot new opportunities for collaboration with suppliers and marshal the resources required to pursue them.

Strategical supplier relationship management entails broadening the view of key suppliers so that they are seen as not simply vendors that you buy things from, but as actual or potential partners who can help you drive competitive advantage. This in turn means expanding the scope of interaction with them beyond purchasing and fulfillment transactions – tapping into their expertise and capabilities to drive innovation, enter new markets, improve quality, exchange insights about marketplace trends, and more. It also means beginning to view relationships with suppliers as assets and to manage them accordingly (Hojberg, 2013).

According to Hughes, (2011) in many fundamental ways, SRM is analogous to CRM. Just as companies have multiple interactions over time with their customers, so too do they with their suppliers negotiating contracts, purchasing, managing logistics and delivery, collaborating on product design, etc. The starting point for defining SRM is recognition, that these various interactions with suppliers are not discrete and independent, instead they are accurately and usefully thought of as comprising a relationship. With SRM, the case is somewhat less straightforward. After all, while it seems intuitively obvious that there is value in understanding customers better by tracking and analyzing all interactions with them, it is certainly not equally obvious that there is a parallel benefit to understanding suppliers in the same way. With customers, the overwhelming goal is sales. There may be objectives beyond profitable sales that

matter with some customers. Nonetheless, these interests are largely at the margins. The best customer is one who buys a lot at attractive margins. You want as many of these customers as possible. Typically, a high volume, low price supplier is a commodity vendor: relatively easy to replace, and by most measures not a source of competitive advantage. Other factors, like product and service quality, willingness and ability to innovate, and the degree to which a supplier's products and services help you differentiate your own in the marketplace are more important than volume or price in determining how important or valuable a supplier is. (Hughes, 2011)

2.1.3. The Customer relationship management

The original and fundamental insight of CRM was that the multiple interactions (multiple purchases, customer service requests and responses, etc.) between a company and a customer that occurred over time were not simply a collection of atomic, unrelated events. Instead, they were properly and usefully understood as comprising a relationship between company and customer. This fundamental insight suggests a clear definition of CRM as the management of a company's multiple interactions with its customers in a systematic way based on the theory that they are not discrete events, but instead related in various ways — that they collectively comprise an arrangement that can be usefully understood and treated as a relationship. This fundamental insight has many implications. One is that information about customer needs and preferences can be gleaned by analyzing the universe of transactions with them. This in turn creates opportunities to increase sales, to decrease the cost of sales, to increase the return on marketing and advertising expenditures, and so on (Hughes, 2004)

Again according to Hughes, 2004, With SRM, the case is somewhat less straightforward. After all, while it seems intuitively obvious that there is value in understanding my customers better by tracking and analyzing all my interactions with them, it is certainly not equally obvious that there is a parallel benefit to understanding my suppliers in the same way. With customers, the overwhelming goal is sales. There may be objectives beyond profitable sales that matter with some customers (reference-ability which drives sales with other customers; reducing cost of sales; getting early insights about needs and preferences that may represent major market opportunities). Nonetheless, these interests are largely at the margins. The best customer is one who buys a lot at attractive margins. You want as many of these customers as possible. But is the best supplier one from whom you buy a lot at low prices? Not in an analogous way. Typically, a

high volume, low price supplier is a commodity vendor: relatively easy to replace, and by most measures not a source of competitive advantage. Other factors, like product and service quality, willingness and ability to innovate, and the degree to which a supplier's products and services help you differentiate your own in the marketplace are more important than volume or price in determining how important or valuable a supplier is.

2.1.4. Buyer/Supplier Integration and Supply Chain Performance

Based on the Gartner publication on the "Executive Summary: Managing Strategic Partnerships" on 01, June 2011, by Iyengar, Colella, & Snyder, Strategic partnerships (SPs) are external relationships that directly support key business processes, outcomes and revenues. They are integral to IT's ability to deliver business results to the enterprise. It also states that now a days the state of changed risk responsibility suggest, enterprises must accept and manage the reality that their destiny now rests partly in the hands of strategic partners. A partnership's failure to deliver will lead directly to business risk for the enterprise.

Strategic partners help drive a level of capability, delivery and business results very different from that of legacy strategic vendors. Likewise, the skills and competencies required for Strategic partnership management are very different from those required for traditional strategic vendor management , and an Strategic partners' specific skill and competency differences both internally (at the enterprise) and externally (at the vendor) dictate further mind-set and behavioral changes. Strategic partners require, moreover, that IT and other business management functions think and act in new ways. For example, its interaction and collaboration with these functions must be refined and adapted to allow the integration of Strategic partners into a single collaborative framework (Iyengar, Colella, & Snyder, 2011)

2.1.5. Suppliers as a Source of Competitive Advantage

Muckstadt, Murray, Rappold, and Collins (2001) states that end-consumers continue to demand greater product variety, lower cost, and more agility from their suppliers, Product life cycles are shortening and the competitive time-to-market for new products is decreasing. Customers are requiring shortened lead times between the time when an order is placed and when an order is due. These shorter lead times render accurate demand forecasting over order lead times virtually

impossible for many manufacturing and distribution planning purposes, thereby increasing operational uncertainty.

According to Hughes, 2011, there is no clear definition or framework for evaluating value. Many companies are simply looking for ways to continue to drive costs down typically by demanding lower prices from suppliers, and are trying to figure out whether and how SRM might help them do so. Other companies have an instinctual sense that better relationships will deliver more value often indicate (or validate) that the most important way to realize competitive advantage from many suppliers is by driving costs down by negotiating or by collaborating. Thus, SRM is important to create a competitive advantage by using suppliers' assets, capabilities and their network.

According to the literature review strategic supply chain partnership requires that a number of variables are acting in parallel influencing the effectiveness and efficiency of partnerships and related controls in each of the supply chain echelons (stages).

2.1.6. Structure of the Organization

According to Maraka, Kibet& Mike (2015), While there is no one correct model for deploying SRM at an organizational level, there are sets of structural elements that are relevant in most contexts: A formal SRM team or office at the corporate level; the purpose of such a group is to facilitate and coordinate SRM activities across functions and business units. The SRM office and supply chain function are typically responsible for defining the SRM governance model, which includes a clear and jointly agreed governance framework in place for some top-tier strategic suppliers. Effective governance should comprise of a face-off model connecting Personnel in different departments such as procurement, logistics, engineering quality and operations with their supplier counterparts, regular operational and strategic planning and review meetings and well-defined escalation procedures to ensure speedy resolution of conflicts at the appropriate organizational levels.

2.1.7. Value Measurement

According to Maraka, Kibe t& Mike (2015), “You cannot improve what you can’t measure”, measures include quality, cost, delivery and flexibility and are used to evaluate how well a supplier is doing. Information provided by the supplier performance will be used to improve the entire supply chain. Thus the goal of any good performance evaluation system is to provide metrics that are understandable, easy to measure and focused real value added results for both the buyer and supplier. One tool for monitoring performance and identifying areas for improvement is the joint, two-way performance scorecard. A balanced scorecard includes a mixture of quantitative and qualitative measures, including how key participants perceive the quality of the relationship. These are shared between customer and supplier and reviewed jointly, reflecting the fact that the relationship is two-way and collaborative, and that strong performance on both sides is required for it to be successful. Advanced organizations conduct 360 degree scorecards, where strategic suppliers are also surveyed for feedback on their performance, the results of which are built into the scorecard. There are many ways SRM can contribute to financial performance. These include cost savings (e.g., most favored customer pricing, joint efforts to improve design, manufacturing, and service delivery for greater efficiency); incremental revenue opportunities (e.g., gaining early or exclusive access to innovative supplier technology; joint efforts to develop innovative products, features, packaging, etc. avoiding stock -outs through joint demand forecasting); and improved management of risk.

2.1.8. Supplier Collaboration

According to Maraka, Kibet& Mike (2015), In practice, SRM expands the scope of interaction with key suppliers beyond traditional buy-sell transactions to encompass other joint activities which are predicated on a shift in perspective and a change in how relationships are managed, which may or may not entail significant investment. Such activities include, Joint research and development, more disciplined, systematic, and often expanded, information sharing and finally joint demand forecasting and process re-engineering. The strategic focused outcomes model (SFOM) categorizes collaboration into three. These are Market collaboration which includes activities such as shared merchandising, co-branding, joint selling and distribution channel management. Operational collaboration which includes

shared operational planning information, developing and sharing of forecasts, link order management system and joint capacity management system. Strategic collaboration which includes aligning customer requirements, sharing basic technologies, shared production engineering, developing joint market entry strategies and develop joint capital expenditures.

Close cooperation helps supply chain members to effectively match demand and supply to increase over all supply chain profitability (Simatupang & Sridharan, 2002)

2.1.9. Technology

According to Maraka, Kibet& Mike (2015), SRM encompasses a broad suite of capabilities that facilitate collaboration, sourcing, transaction execution and performance monitoring between an organization and its trading partners. SRM leverages the latest technology capabilities to integrate and enhance supplier oriented processes along the supply chain such as design-to-source, source-to-contract and procure-to-pay. SRM involves stream lining the processes and communication between buyer and supplier and using software application to enable these processes to be managed more efficiently and effectively.

2.1.10.Responsiveness

As we noted earlier, one of the most important performance outcomes expected from improved inter-organizational relationships is cycle time reduction within the supply chain High-velocity business environments are forcing firms to respond quickly to changing competitive priorities. Rapid shifts in the bases of competition are driving firms to place greater emphasis on cycle time-based capabilities in order to capture the benefits of flexible response to changing conditions. Research suggests that suppliers who are able to respond quickly to changes in order volumes through strategies such as vendor managed inventory, just-in-time delivery, and inventory positioning within the supply chain can significantly improve customer satisfaction (Handfield & Bechtel, 2002).

2.1.11.Supplier Selection

Ellram, (1990), states that Strategic supplier selection is a long-term focus. This focus suggests that while a supplier's current performance and capabilities are important, the supplier's potential and future direction should be given equal, if not greater, attention. The emphasis on the future is

critical because a long-term relationship is sought. If current performance does not quite meet expectations but the supplier is moving in the right direction and is compatible with the firm's top management, this supplier could have greater partnership potential than a supplier that currently meets specifications, but for whom the firm is only a relatively small piece of business. An understanding of the factors to consider in selecting a partner could be useful to managers who are entering or considering supplier partnerships, and could also be useful to those developing supplier selection models.

2.1.12. Supply Chain Performance Measures

According to Beamon, 1999, Supply chain models have predominantly utilized two different performance measures:

- (1) Cost; and
- (2) A combination of cost and customer responsiveness.

Costs may include inventory costs and operating costs. Customer responsiveness measures include lead time, stock out probability, and fill rate.

2.2. Empirical Literature Review

A study revealed that buyer supplier joint decisions and supplier` communication management have positive effect on internal operational performance of manufacturing firms in Kenya. The study further revealed that the effect was statistically significant. This implies that organizations that have well managed supplier communication systems, implement buyer supplier joint decisions and that have improved customer relations are likely to enjoy improved internal operational performance. Improved supplier relations enhance supplier performance which in turn enhances internal operations performance. Similarly, effective communication system improves flow of information between the organizations and suppliers improving operational performance. The study therefore recommends that management of manufacturing organizations enhance communication systems and develop lasting relations with suppliers. A dedicated information system may be used to provide real time flow of information as well as achieve enhanced relations between the suppliers and the organization (Onyango, Onyango, Kiruri, & Karanja, 2015)

Wachira,(2013) has showed a result using a significance level of 5% all the independent variables are statistically significant since their P values are below 5% (Trust= 0.4%, Communication =0.2%, Risk Assessment and Management= 0.5% and Strategic Supplier Partnership = 0.4%). The model shows that trust, communication, risk assessment and management and strategic supplier relationship are suitable predictors of supply chain performance. The prediction model is therefore as follows:

$$Y=-0.11+0.277X_1+0.620X_2+0.31X_3+0.137X_4$$

The study indicated that the R² is 78.9%., meaning the four independent variables explain 78.9% of the variance in supply chain performance of firms in the alcohol beverage industry. These independent variables are key determinants to improved performance of Supply Chains in the organizations.

2.3. Conceptual Framework

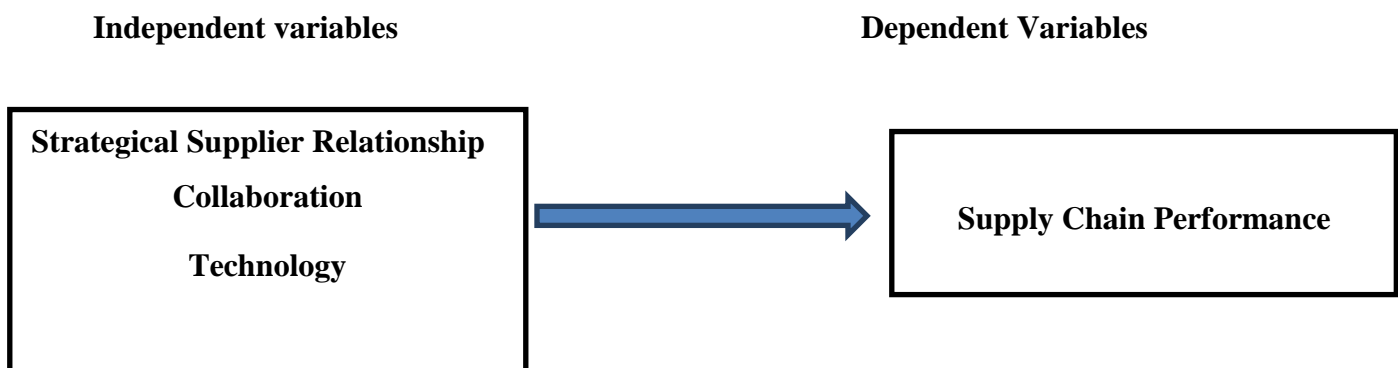


Fig: Supplier Relationship Management conceptual frameworks

(Source: the researcher)

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1. Introduction

This chapter presents the research methodology that was applied in conducting the study. It discusses the research design, target population, data collection procedures and instrument, determination of reliability and validity as well as data analysis techniques.

3.2. Research Design

The study involved a descriptive research design of cross sectional type. Tanur, (1982) asserts that a survey is a means of collecting information about a large group of elements referred to as a population. A survey has three characteristics: to produce quantitative descriptions of some aspects of the study population in which case it is concerned either with relationships between variables, or with projecting findings descriptively to a predefined population; data collection is done by asking people structured and predefined questions and data is collected from a target population in this case the employees of PFSA Ethiopia, Head quarter the department of Tender Management and Contract Management Directorate. Based on the respondents by using the questioners, quantitative analysis was done. This quantitative study helped the researcher to describe the relation between variables and helped to explain how the strategical supplier relationships (independent variables) relate to the supply chain performances (dependent variables).

3.3. Population and Sampling Techniques

The subjects for the research study were all members of the tender management and contact management directorate. The researcher used all as study population. The researcher used Census.

3.4. Data Sources and Types

This study used both primary and secondary data source. The researcher used Annual performance Reports for the 2017, 2016 and 2015 of the agency as well as websites of the company and journals.

3.5. Data Collection

Primary data was collected using a questionnaire. The respondents were Professionals in the two departments of the agency. The professionals were considered since they understand the Supplier Relationship Management (SRM) in the organization as well as the importance and the challenges involved in SRM of the agency.

The data was collected by use of a structured questionnaire that was administered by drop and pick later method. The questionnaire was in the form of Likert scale where respondents were required to indicate their views on a scale of 1 to 5. The likert scale reported how negatively or positively the supply chain professionals were disposed to Supplier Relationship Management. Having numerous items on how Supplier Relationship Management affects supply chain performance, the values were averaged to portray the impact of the relationship. This questioner has three parts. Part A – personal data, Part B - questions related to supplier relationship management in your agency Part C: questions related to Supply chain performance of the agency

3.6. Data Analysis

The data collected was sorted and coded then entered into the Statistical Packages for Social Sciences (SPSS 21). Descriptive statistics was used to show the relation between Supplier Relationship Management and supply chain performance. The findings were presented in tables. Reliability Test, Cronbach's alpha value was done and obtained. The research instrument was therefore considered reliable to achieve the desired results of the study. The Cronbach's Alpha yielded a reliability coefficient greater than 0.7 and was therefore adopted for the final study. Regression analysis was also done.

3.7. Ethical Consideration

The respondents participated voluntarily. The participants were well informed as to the purpose of the study and were consented verbally. Measures were taken to ensure the respect, dignity and freedom of each individual participating and to assure confidentiality in the study. In addition, respondents were clearly informed that the information they provided will be confidential and would not be disclose to anyone else including anyone in the company.

The researcher neither hides what the study has found in the study nor highlighted something disproportionately to its true existence. The research only used the method or procedure known to be appropriate and only reported the findings in a way that does not change or slant them to serve the researcher's own or someone else's interest. The researcher did not use information in a way that directly or indirectly adversely affects the respondent.

CHAPTER FOUR - RESULTS AND DISCUSSION

4.1. Introduction

The data was collected through questionnaires by company visits in the period between April 2018 and May 2018, with data from the Ethiopian PFSA head quarter. The employees in the Contract management and Tender management directorate are taken as the target population for the research. As dictated by the research topic, the PFSA Ethiopia provided the study context. From the identified population of 70 employees, fortunately, the final obtained employees correspond to a 100 per cent response rate.

4.2. General Information Analysis

Respondents were also asked to indicate their gender whether male or female. 71.4 % were male while only 28.6 % were female. This is shown in table 4.1.

Gender

| | Frequency | Percent (%) |
|--------|-----------|-------------|
| Female | 20 | 28.6 |
| Male | 50 | 71.4 |
| Total | 70 | 100.0 |

Table 4.1: Number of Female and Male Participants

Further the research sought to establish the positions of the respondents in their respective firms. The findings were as indicated in Table 4.2

| Job Positions | Frequency | Percent (%) |
|---------------------|-----------|-------------|
| Contract Management | 31 | 44.3 |
| Tender management | 39 | 55.7 |
| Total | 70 | 100.0 |

Table 4.2: Job Positions

Respondents were also asked to indicate how long they had been in those positions given the scale of less than 1-2 years, between 3 and 5 years, and more than 5 years. The findings indicated that 40% of the respondents had worked between 1 and 2 years, while 48% had worked between 3 and 5 years while only 11.4 % had worked for more than 5 years Further findings indicate that not all occupied one position for the whole duration rather changed but still in the field of supply chain management specially in the procurement office. This is shown in table 3.

Working Year

| | Frequenc y | Percent |
|--------------|---------------|---------|
| Valid 1-2yrs | 28 | 40.0 |
| 2-5yrs | 34 | 48.6 |
| >5yrs | 8 | 11.4 |
| Total | 70 | 100.0 |

Table 4.3: Working year

The following table shows the Extent of the Relationship between Suppliers and the agency based on the opinion of the participants. (5= To a very large extent 4= Large extent 3= moderate extent 2= small extent 1=very small extent.)

| Statement | 5 | 4 | 3 | 2 | 1 | m | Std.dev |
|--|--------------|----|----|----|---|------|---------|
| Sharing of information | | 30 | 38 | 2 | | 3.4 | 0.549 |
| Collective problem solving | | 21 | 39 | 10 | | 3.16 | 0.651 |
| Involvement in planning and objectives setting with key suppliers. | | 17 | 25 | 27 | 1 | 2.83 | 0.816 |
| Training and development of staff | | 8 | 21 | 37 | 4 | 2.47 | 0.775 |
| Contract management | 7 | 43 | 20 | 3 | | 3.81 | 0.597 |
| The focus on short discrete purchasing | | 18 | 30 | 18 | 4 | 2.89 | 0.860 |
| Emphasis on price, quality and delivery. | | 40 | 19 | 11 | | 3.41 | 0.751 |
| Average Mean | 3.139 | | | | | | |

Table 4.4: The extent of relationship with the suppliers

From the data above it is evident that the agency share critical information with their suppliers and vice versa. This is shown by a mean of 3.4 and standard deviation 0.549 of that respondents agreed to suppliers sharing information with them. Collective Problem solving was to a moderate extent from a mean of 3.16 and std. deviation of 0.651. It is evident that the agency involve their key suppliers in planning and objective setting to a small extent which was indicated by a mean of 2.83 and std. deviation of 0.816. With a mean of 2.47 and a std. deviation of 0.775 the respondents agreed that they do not have training and development collectively with their suppliers. Most trainings are carried out and given by supporting organizations (NGOs) such as USAID.

Contract Management was seen as one of the key issues most respondents agreed with citing dispute resolution as one of the reasons why both participate diligently, this was indicated by a mean of 3.81 and std. deviation of 0.597. With a mean of 2.89 and std. deviation of 0.860 respondents focused on discrete purchasing but to small extent. As indicated by a mean of 3.41

and std. deviation of 0.751, the respondents agreed to put emphasis on price, quality and delivery. The study indicates that respondents have elements of both collaborative and adversarial relationship; however most of their relationship with suppliers is geared towards collaborative relationships. Based on the average mean of 3.139, the extent of the relationship between Suppliers and the agency is moderate.

In order to ascertain the reliability of the research instrument majorly the questionnaire, a pilot test was conducted and data analyzed using Cronbach's Alpha. The findings were as follows;

4.3. Reliability Test Results

| Items | Cronbach's Alpha | N of Items |
|--------------------------|------------------|------------|
| Collaboration | 0.829 | 8 |
| Technology | 0.714 | 4 |
| Supply Chain Performance | 0.622 | 7 |
| Alpha (α) | 0.816 | 19 |

Table 4.5: Reliability Test Result

The mean of Cronbach's alpha value obtained was 0.816. This result was > 0.7 which was considered the accepted α value. The research instrument was therefore considered reliable to achieve the desired results of the study. The Cronbach's Alpha yielded a reliability coefficient greater than 0.7 and was therefore adopted for the final study.

4.4. Supplier Collaboration

The following table shows the effect of Collaboration on the supply chain performance of the agency based on the opinion of the participants (5= To a very large extent 4= Large extent 3= moderate extent 2= small extent 1=very small extent.)

| Statements | 5 | 4 | 3 | 2 | 1 | M | Std.dev |
|--|--------------|----|----|----|---|------|---------|
| The Extent of strategic partnership with suppliers | 3 | 19 | 42 | 5 | 1 | 3.26 | 0.716 |
| The establishment of quick ordering system | 3 | 22 | 30 | 14 | 1 | 3.17 | 0.851 |
| Stable procurement through network. | 4 | 20 | 35 | 10 | 1 | 3.23 | 0.820 |
| Flexible system to market change | 4 | 6 | 39 | 21 | | 2.90 | 0.783 |
| Sales forecast information sharing with the suppliers | | 20 | 22 | 28 | | 2.89 | 0.826 |
| Product related information sharing | 4 | 27 | 30 | 9 | | 3.37 | 0.783 |
| Adequacy and quality of information sharing throughout the supply chain. | | 16 | 39 | 15 | | 3.01 | 0.670 |
| Average Mean | 3.071 | | | | | | |

Table 4.6: Collaboration

According to the participants, the Agency's strategic partnership with the suppliers is moderate; this is shown by a mean of 3.26 and std. deviation of 0.76. The extent for the establishment of quick ordering system is again moderate with a mean of 3.17 and std. deviation of 0.851. With a mean of 3.23 and a std. deviation of 0.82 is stable procurement through network. The extent for the flexibility to market change especially in market demand is to a small extent with a mean of 2.9 and a std. deviation of 0.783.

According to the participants, sharing of information related to sales forecast with the suppliers is to a small extent. Usually this is done with the supporter organizations such as USAID. This is shown by a mean of 2.89 and std. Deviation of 0.826. Product related information sharing with the suppliers to a moderate extent with a mean of 3.37 and std. deviation of 0.783.

Generally adequacy and quality of information sharing across the supply chain has been shown to a moderate extent with a mean of 3.01 and std. deviation of 0.670.

According to the average mean of 3.071, collaboration in the agency affects supply chain performance moderately.

4.5. Technology

The following table shows the Effect of Technology on the supply chain performance of the agency (SA=Strongly Agree, A=Agree, N=Neutral, SD=Strongly Disagree).

| Statement | SA | A | N | D | SD | M | Std.dev |
|---|-------------|----|----|----|----|------|---------|
| IT based automated ordering system from major suppliers | 5 | 36 | 13 | 16 | | 3.43 | 0.926 |
| System integration within departments has been achieved with technology | 8 | 36 | 15 | 11 | | 3.59 | 0.893 |
| Flexibility and efficiency of operations | | 10 | 30 | 26 | 4 | 2.66 | 0.796 |
| The current technology can be upgraded to support SRM | 11 | 34 | 16 | 9 | | 3.67 | 0.896 |
| Average Mean | 3.43 | | | | | | |

Table 4.7: Effect of Technology on the performance of the agency

As indicated on the table above, the respondents have agreed that the ordering system is an IT based automated system which enables the agency efficiently, and this has been showed by a mean of 3.43 and a std. deviation of 0.926. With a mean of 3.56 and a std. deviation of 0.893 the respondents have agreed on the subject of system integration has been achieved with in departments with technology but the participants have been neutral to Flexibility and efficiency of internal operations with a mean of 2.66 and std. deviation of 0.796. Many of the respondents have agreed on the idea that the current technology can be upgraded to support strategical supplier relationship management, as the table shows with a mean of 3.67 and std. deviation of

0.896. Based on the average mean of 3.43, the respondents have agreed that technology affects supply chain performance in the agency.

4.6. Supply chain Performance of the Company

The following table shows performance of the agency with respect to the major customers according to the respondents. (5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree, 1=Strongly Disagree)

| Statement | 5 | 4 | 3 | 2 | 1 | M | Std. dev |
|---|-------|----|----|----|----|------|----------|
| Our company can quickly respond to changes in market demand | | 29 | 33 | 8 | | 3.30 | 0.667 |
| Our company has an outstanding on-time delivery record to our major customer. | | 16 | 27 | 21 | 6 | 2.76 | 0.908 |
| The lead time for fulfilling customers' orders (the time which elapses between the receipt of customer's order and the delivery of the goods) is short. | | | 8 | 44 | 18 | 2.86 | 0.597 |
| The organization has managed suppliers soundly to reduce costs in the organization | | 20 | 37 | 8 | 5 | 3.03 | 0.834 |
| The Company has shown Growth in sales. | 9 | 37 | 24 | | | 3.79 | 0.657 |
| The Company has shown Growth in market share. | 2 | 44 | 15 | 5 | 4 | 3.6 | 0.897 |
| Average mean | 3.227 | | | | | | |

Table 4.8: supply chain performance

As indicated on the table above, the respondents have agreed that the agency respond to changes to the market. This is shown by a mean of 3.30 and a std. deviation of 0.667. With a mean of 2.76 and std. deviation of 0.908 the respondents have been neutral for the delivery of goods on time. The respondents showed that on time delivery is not always consistent. The respondents are neutral to the lead time for fulfilling customers' orders by the agency, which is showed by a mean of 2.86 and std. deviation of 0.597. With a mean of 3.03 and std. deviation of 0.834 the respondents are neutral that the agency managed suppliers soundly to reduce costs in the organization. Through the years the respondents have agreed that the Agency has shown growth

in sales and this is described with a mean of 3.79 and std. deviation of 0.657. With a mean of 3.6 and std. deviation of 0.897 the respondents have agreed that the Agency has shown growth in the market share. So Based on the average mean of 3.227, the respondents showed to be neutral for the performance of the agency.

4.7. Regression Analysis

4.7.1. Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|--------------------|----------|-------------------|----------------------------|
| 1 | 0.557 ^a | 0.310 | 0.290 | 0.366 |

a. Predictors: (Constant), Technology, Collaboration

Table 4.9: Model Summary

The R square value of 0.310 reveals that the Independent variables Technology and Collaboration affect supply chain performance up to 31.0 percent. The changes in supply chain performance can be explained up to 31.0 percent by changes in technology and collaboration. The rest 69 percent can be due to chance or variables which are not discussed in this study or unidentified variables.

This 31.0 percent regression result may showed a weak relationship based on this study, the reason can be explained based on literatures that had been done on supplier integration and the effect on supply chain performance of organizations.

Barbara B. Flynn, (2010) studied the effect of supply chain integration (customer, supplier and internal integration) on the supply chain performance of organizations, he found that customer and internal integration showed a strong positive relationship with performance but supplier integration alone showed a weak positive relationship with performance, but interaction of customer and supplier integration has showed a stronger relationship with the supply chain performance of the organizations under the study. Other researches indicate the examination of the effect of the individual dimensions of supply chain integration (in case of this study, supplier integration only) on performance was not sufficient. Relationship of supply chain integration to

performance can only be fully examined when all three dimensions of supply chain integration are considered together. So the rest 69.0 percent variance may be explained through other variables that this study did not include.

4.7.2. ANOVA Test

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|----|-------------|--------|-------------------|
| 1 | Regression | 4.035 | 2 | 2.018 | 15.080 | .000 ^b |
| | Residual | 8.964 | 67 | 0.134 | | |
| | Total | 13.000 | 69 | | | |

a. Dependent Variable: Performance

Table 4.10: ANOVA Test

b. Predictors: (Constant), Technology, Collaboration

ANOVA test was conducted to test the significance level of the entire model. The significance value is less than 0.01, it was concluded that technology and collaboration jointly have statistically significant positive effect on operational performance. This implies that agency that implement collaboration and technology enjoy better supply chain performance.

4.7.3. Table of Co-Efficient Correlation

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|-------|---------------|-----------------------------|------------|---------------------------|-------|------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.480 | 0.329 | | 4.502 | .000 |
| | Collaboration | 0.251 | 0.092 | 0.287 | 2.738 | .008 |
| | Technology | 0.293 | 0.074 | 0.413 | 3.945 | .000 |

a. Dependent Variable: Performance

Table 4.11: Table of Co-Efficient

The table reveals a significance value of 0.008 and 0.000 for collaboration and technology. Since the p value for collaboration and Technology is less than 0.05, this implies that collaboration and technology are predictors of supply chain performance individually; the effect of collaboration and technology is statistically significant at a 1 percent significance level. The beta values of collaboration and Technology values of 0.251 and 0.93 implies that the model of the study will be,

$$Y=1.480+ 0.251X_1 + 0.147X_2$$

Where X_1 and X_2 are collaboration and technology respectively

Furthermore, as collaboration increases with one percent level, the supply chain performance level will increase with 25.1 percent and as technology increases with one percent level, the supply chain performance increases with a level of 29.3 percent.

CHAPTER FIVE - CONCLUSIONS AND RECOMMENDATION

5.1. Conclusions

The results of the study revealed that collaboration and technology have a positive effect on the supply chain performance of the PFSA. The study further revealed that the effect was statistically significant. This implies that organizations that have a well-managed startegical supplier relationship management are likely to have an improved supply chain performance.

From the study again, it can be concluded that organizations working on supplier, customer and internal integration, not just only supplier can have achieve higher performance in the market place.

Based on the responses from the participants, it can be said that the Ethiopia Pharmaceuticals Fund and Supply Agency is moving towards collaborative relationships with their suppliers to improve on their supply chain performance, but is still lacking. Though the agency has shown growth in sales and market share, still other supply chain performance such as on time delivery of goods and cost reduction through supplier relationship management are deficient, this was concluded from the responses of the respondents.

5.2. Recommendation

The study recommends that the agency adopts supplier optimization strategies where the agency will be able to choose suppliers based on their capabilities and not just based on the price and the quality of service or products. Developing this procurement policy will surely avoid unnecessary costs resulting from procurement delays and inability to abide by the contract and the agency will positively influence its performance through the procurement department.

The study also recommends that the agency and similar procurement companies to adopt regular business plan meetings and operational business reviews. This helps to foster business relationships and enhance collaborations and joint activities. Supplier relationship management best results when both parties support each other to ensure that each party gets their value

The study consequently encourages the agency and similar company to invest more of supplier relationships so that they could positively influence the organizational performance to the level that will meet the organization's expectations.

Finally the study recommends that the agency adopts more robust procurement systems and technologies which enable the agency be efficient. The system should be able to serve both the supplier and the agency.

5.3. Limitation of the Study

The limitation of the research is that the data was collected from limited supply chain members of the agency, only focused on the procurement departments. These informants were only and fully responsible for all the SCM activities and functions. More studies are needed with larger multiple informants which results validity of the findings. The sample size and variables are limited and this is another limitation of the research as it could not investigate the indirect effects of the variables and other possible moderate variables which may affect the whole supply chain performance of the agency.

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APPENDIX A: SURVEY QUESTIONNAIRE TO BE FILLED BY THE EMPLOYEES

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

SCHOOL OF COMMERCE

Dear Participants;

My name is KidistFikadu. I am a student of school of commerce, Addis Ababa University and I am now conducting a research on the process of Strategic Supplier relationship management, which is being presented to the University for Partial Fulfillment of the requirements for the MA degree in Logistics and supply chain management. It is designed to collect the necessary data which will support the research work entitled “Assessing the effect of strategic supplier relationship management on the supply chain performance of the PFSA Ethiopia”. The purpose of this survey is to obtain your opinion on the relationship between supplier relationship management and the supply chain performance.

You are cordially invited to give your views and required to complete the questionnaire that will provide a valuable input to my research work. Information pertaining to your answers in this questionnaire will be completely confidential. So you are not required to write your name on the questionnaire. For any inquiry do not hesitate to contact me. (Mobile No: +251913230790, E-mail: fikadukidist2@gmail.com)

This questioner has three parts. Part A – personal data, Part B - questions related to supplier relationship management in your agency Part C: questions related to Supply chain performance of the agency

PART A: Background of the Respondent

1. Gender Male () Female ()

3. Job position (Designation) _____

4. How long have you worked in the current organization? _____

PART B: About Strategic Supplier Relationship

Question 1: The Extent of the Relationship Between Suppliers and the Organization

Please indicate the extent to which you agree with the following statements on the nature of suppliers relationship with the organization. The scale below will be applicable:

5= To a very large extent 4= Large extent 3= moderate extent 2= small extent 1=very small extent.

| No | Statement | 5 | 4 | 3 | 2 | 1 |
|----|--|---|---|---|---|---|
| 1 | Sharing of information | | | | | |
| 2 | Collective problem solving | | | | | |
| 3 | Involvement in planning and objectives setting with key suppliers. | | | | | |
| 4 | Training and development of staff | | | | | |
| 5 | Contract management | | | | | |
| 6 | The focus on short discrete purchasing | | | | | |
| 7 | Emphasis on price, quality and delivery. | | | | | |

Any other? Please state

.....

Question 2: Supplier Collaboration

Please indicate the extent to which you agree with the following statements on the nature of collaboration with the organization’s suppliers. The scale below will be applicable:

5= To a very large extent 4= Large extent 3= moderate extent 2= small extent 1=very small extent.

| No | Statement | 5 | 4 | 3 | 2 | 5 |
|----|--|---|---|---|---|---|
| 1 | The Extent of strategic partnership with suppliers | | | | | |
| 2 | The establishment of quick ordering system | | | | | |
| 3 | Stable procurement through network. | | | | | |
| 4 | Flexible system to market change | | | | | |
| 5 | Extent of automated quality control | | | | | |
| 7 | Sales forecast information sharing with the suppliers | | | | | |
| 8 | Product related information sharing | | | | | |
| 9 | Adequacy and quality of information sharing throughout the supply chain. | | | | | |

Any other? Please state

.....

Question 3: Technology

Please indicate the extent to which you agree with the following statements on the nature of Technology that the organization use affecting the relationship between the suppliers.

5= Strongly Agree 4= Agree 3= Neutral 2= Disagree 1=Strongly Disagree.

| No | Statement | 5 | 4 | 3 | 2 | 1 |
|----|---|---|---|---|---|---|
| 1 | The level of IT based automated ordering from major customers | | | | | |

| | | | | | | |
|---|---|--|--|--|--|--|
| 2 | System integration within departments has been achieved with technology | | | | | |
| 3 | Flexibility and efficiency of operations | | | | | |
| 4 | The current technology can be upgraded to support SRM | | | | | |
| 5 | Technology has helped the company towards the realization of its strategic vision | | | | | |

Any other? Please state

.....

.....

PART C: Supply chain Performance

Question 4: Please indicate the degree to which you agree to the following statements concerning your company's performance with respect to your major customers. 5= Strongly Agree 4= Agree 3= Neutral 2= Disagree 1=Strongly Disagree.

| No | . Statement | 5 | 4 | 3 | 2 | 1 |
|----|---|---|---|---|---|---|
| 1 | Our company can quickly respond to changes in market demand | | | | | |
| 2 | Our company has an outstanding on-time delivery record to our major customer. | | | | | |
| 3 | The lead time for fulfilling customers' orders (the time which elapses between the receipt of customer's order and the delivery of the goods) is short. | | | | | |
| 4 | The organization has managed suppliers soundly to reduce costs in the organization | | | | | |
| 5 | Our company provides a high level of customer service to our major customer | | | | | |

| | | | | | | |
|---|---|--|--|--|--|--|
| 6 | The Company has shown Growth in sales. | | | | | |
| 7 | The Company has shown Growth in market share. | | | | | |

Any other? Please state

.....

.....

.....

APPENDIX B: SPSS RESULTS

Frequencies

Statistics

| | Gender | The Extent of strategic partnershi p with suppliers | The establishment of quick ordering system | Stable procurement through network. | Flexible production system to market change | Extent of automate d quality control | Sales forecast information sharing with the suppliers | Product related information sharing | Adequacy and quality of information sharing throughout the supply chain. |
|----------------|---------|--|--|--|---|---|--|---|---|
| N | Valid | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| | Missing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mean | | 3.26 | 3.19 | 3.23 | 2.90 | 2.73 | 2.89 | 3.37 | 3.01 |
| Std. Deviation | | .716 | .804 | .820 | .783 | .721 | .826 | .783 | .670 |
| Percentiles | 25 | 3.00 | 3.00 | 3.00 | 2.00 | 2.00 | 2.00 | 3.00 | 3.00 |
| | 50 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| | 75 | 4.00 | 4.00 | 4.00 | 3.00 | 3.00 | 4.00 | 4.00 | 3.00 |

Statistics

| | The level of IT based automated ordering from major customers | System integration within departments has been achieved with technology | Flexibility and efficiency of operations | The current technology can be upgraded to support SRM |
|----------------|--|--|--|--|
| N | Valid | 70 | 70 | 70 |
| | Missing | 0 | 0 | 0 |
| Mean | 3.43 | 3.59 | 2.66 | 3.67 |
| Std. Deviation | .926 | .893 | .796 | .896 |
| Percentiles | 25 | 3.00 | 3.00 | 3.00 |
| | 50 | 4.00 | 4.00 | 4.00 |
| | 75 | 4.00 | 4.00 | 3.00 |

Statistics

| | | Gender | Our company can quickly respond to changes in market demand | Our company has an outstanding on-time delivery record to our major customer. | The lead time for fulfilling customers' orders (the time which elapses between the receipt of customer's order and the delivery of the goods) is short. | The organization has managed suppliers soundly to reduce costs in the organization | Our company provides a high level of customer service to our major customer | The Company has shown Growth in sales. | The Company has shown Growth in market share. |
|---|----------------|--------|---|---|---|--|---|--|---|
| N | Valid | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| | Missing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Mean | | 3.30 | 2.76 | 2.86 | 3.03 | 3.36 | 3.79 | 3.50 |
| | Std. Deviation | | .667 | .908 | .597 | .834 | .869 | .657 | .897 |
| | Percentiles | | | | | | | | |
| | 25 | | 3.00 | 2.00 | 2.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| | 50 | | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 4.00 | 4.00 |
| | 75 | | 4.00 | 3.00 | 3.00 | 4.00 | 4.00 | 4.00 | 4.00 |

Correlations

| | | Collaboration | Performance | Technology |
|---------------|---------------------|---------------|-------------|------------|
| Collaboration | Pearson Correlation | 1 | .388** | .245* |
| | Sig. (2-tailed) | | .001 | .041 |
| | N | 70 | 70 | 70 |
| Performance | Pearson Correlation | .388** | 1 | .483** |
| | Sig. (2-tailed) | .001 | | .000 |
| | N | 70 | 70 | 70 |
| Technology | Pearson Correlation | .245* | .483** | 1 |
| | Sig. (2-tailed) | .041 | .000 | |
| | N | 70 | 70 | 70 |

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

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

Regression Analysis

Variables Entered/Removed^a

| Model | Variables Entered | Variables Removed | Method |
|-------|--|-------------------|--------|
| 1 | Technology, Collaboration ^b | . | Enter |

a. Dependent Variable: Performance

b. All requested variables entered.

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .557 ^a | .310 | .290 | .366 |

a. Predictors: (Constant), Technology, Collaboration

ANOVA^a

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|-------|------------|----------------|----|-------------|--------|-------------------|
| 1 | Regression | 4.035 | 2 | 2.018 | 15.080 | .000 ^b |
| | Residual | 8.964 | 67 | .134 | | |
| | Total | 13.000 | 69 | | | |

a. Dependent Variable: Performance

b. Predictors: (Constant), Technology, Collaboration

Coefficients^a

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------|---------------|-----------------------------|------------|---------------------------|-------|------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.480 | .329 | | 4.502 | .000 |
| | Collaboration | .251 | .092 | .287 | 2.738 | .008 |
| | Technology | .293 | .074 | .413 | 3.945 | .000 |

a. Dependent Variable: Performance