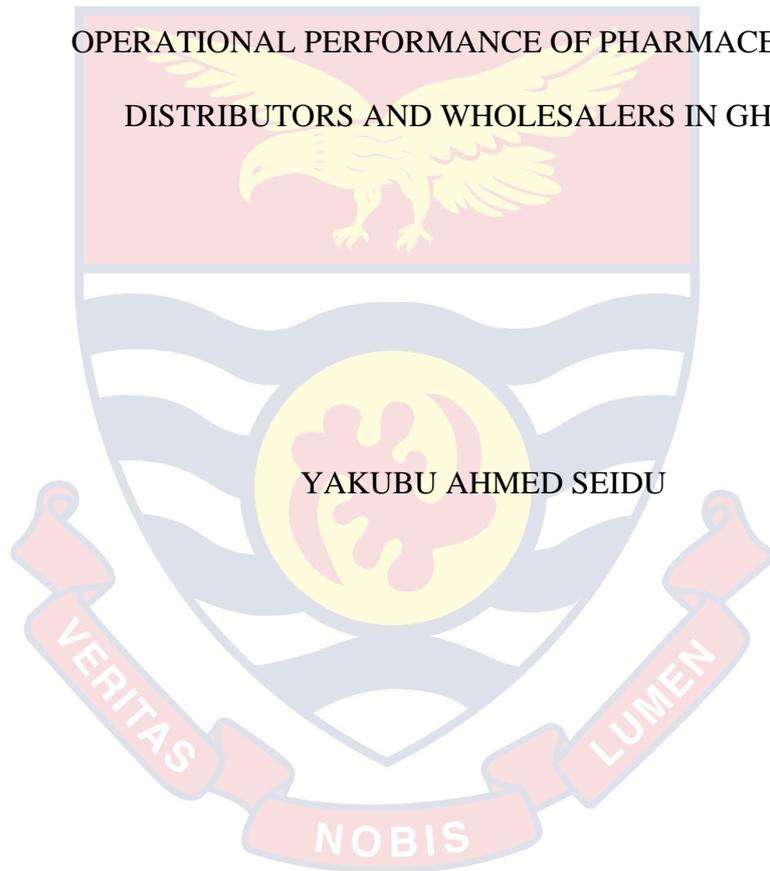


UNIVERSITY OF CAPE COAST

SUPPLY CHAIN QUALITY MANAGEMENT PRACTICES AND  
OPERATIONAL PERFORMANCE OF PHARMACEUTICAL  
DISTRIBUTORS AND WHOLESALERS IN GHANA



YAKUBU AHMED SEIDU

2020

UNIVERSITY OF CAPE COAST

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OPERATIONAL PERFORMANCE OF PHARMACEUTICAL  
DISTRIBUTORS AND WHOLESALERS IN GHANA

BY

YAKUBU AHMED SEIDU

Thesis submitted to the Department of Marketing and Supply Chain  
Management of the School of Business, College of Humanities and Legal  
Studies, University of Cape Coast in partial fulfilment of the requirements for  
award of Master of Commerce degree in Procurement and Supply Chain  
Management

OCTOBER 2020

## DECLARATION

### Candidate's Declaration

I hereby declare that this thesis is the result of my original research and that no part of it has been presented for another degree in this university or elsewhere

Candidates Signature..... Date.....

Name: Yakubu Ahmed Seidu

### Supervisors' Declaration

I hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Supervisor's Signature .....Date.....

Name: Dr Andrews Agya Yarley

## ABSTRACT

Improvement in the market share for the Pharmaceutical Distributors and Wholesalers in Ghana have been very slow due to challenges over quality of product and services provided by these supply firms. Thus, using positivism paradigm mainly through survey and questionnaire, this study examined the different practices in supply chain quality management and operational performance levels of these pharmaceutical companies. Data was sourced from 159 pharmaceutical distributors and wholesalers in Greater Accra and Ashanti region of Ghana. Using structured questionnaires, the data analysis was carried out using SmartPLS-SEM. The study revealed that supply chain quality management practices including strategic supplier partnership, information sharing and customer relationship have significant positive effect on operational performance of these firms. The study, however, also found that top management, has no significant effect on the operational performance of these pharmaceutical distributors and wholesalers. In view of this it is recommended that pharmaceutical distributors and wholesalers should pay more attention to strategic supplier partnership and customer relationship practices during supply chain quality management because it was found to greatly improve the firms' operational performance.

## KEYWORDS

Customer Relationship

Information Sharing

Operational Performance

Pharmaceutical Distributors and Wholesalers

Quality Management

Strategic Supplier Partnership

Supply Chain

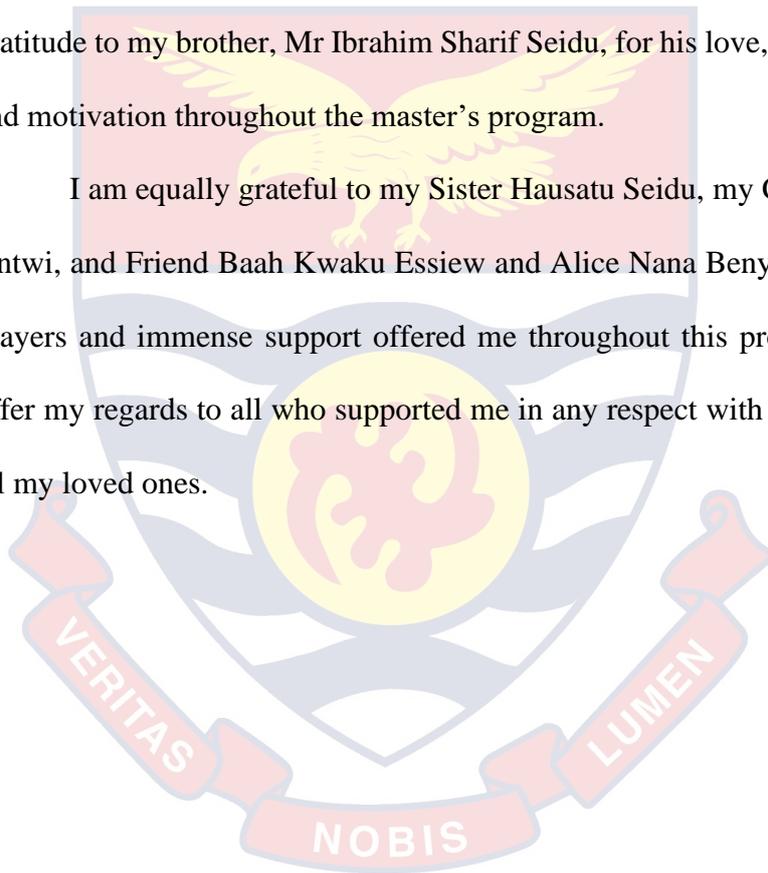
Supply Chain Quality Management Practices



## ACKNOWLEDGMENTS

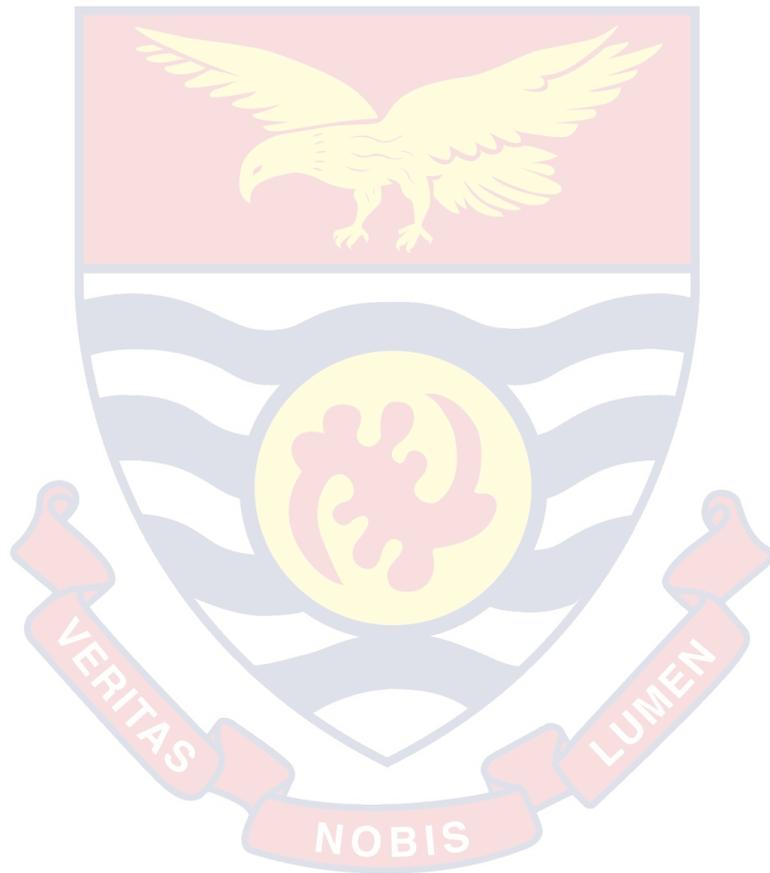
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## DEDICATION

To my mum, dad and siblings.



## TABLE OF CONTENT

Contents	Page
DECLARATION	ii
ABSTRACT	iii
KEYWORDS	iv
ACKNOWLEDGMENTS	v
DEDICATION	vi
TABLE OF CONTENT	vii
LISTS OF TABLES	xi
LIST OF FIGURES	xii
LIST OF ACRONYMS	xiii
CHAPTER ONE: INTRODUCTION	
Background to the Study	2
Statement of the Problem	5
Purpose of the Study	8
Research Hypotheses	9
Significance of the Study	9
Delimitations	10
Limitations	11
Definition of Terms	11
CHAPTER TWO: LITERATURE REVIEW	
Introduction	13
Theoretical Review	13
Network Theory	13
Relational Exchange Theory	15

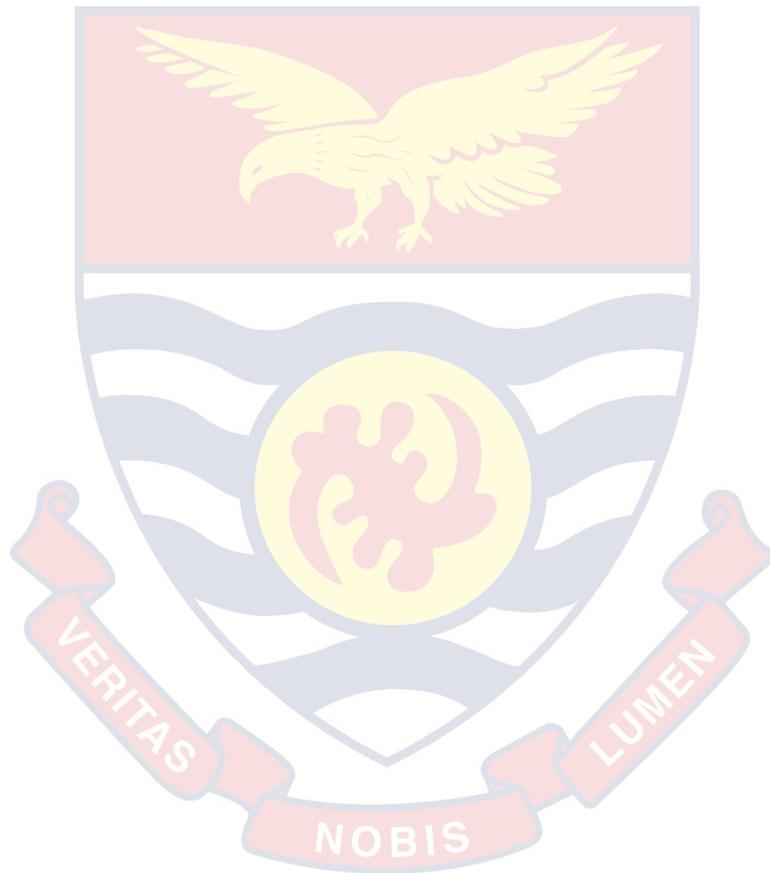
Conceptual Review	17
Supply Chain	17
Quality Management	18
Supply Chain Quality Management	19
Supply Chain Quality Management Practices	20
Operational Performance	21
Empirical Review	27
Top Management Support and Firm Performance	27
Strategic Supplier Partnership and Firm Performance	29
Information Sharing and Firm Performance	32
Customer Relationship and Firm Performance	34
Conceptual Framework	37
Chapter Summary	38
<b>CHAPTER THREE: RESEARCH METHOD</b>	
Introduction	39
Research Paradigm	39
Research Approach	40
Research Design	41
Study Area	42
Population	43
Data Collection Instrument	44
Validity and Reliability	46
Data Collection Procedure	47
Ethical Considerations	49
Data Processing and Analysis	50

## CHAPTER FOUR: RESULTS AND DISCUSSION

Introduction	52
Demographic Characteristics of Respondents	53
Descriptive Statistics of Variables	57
Description of Top Management support practices	57
Description of Strategic of Strategic Supplier Partnership	59
Description of Information Sharing	62
Description of Customer Relationship	63
Measurement Model	65
Internal Consistency Reliability	66
Convergent Validity	68
Multicollinearity Among Exogenous Variables	68
Discriminant Validity	70
Structural Model	73
Significance of Path Coefficients	73
Effect of Top management Support on Operational Performance	74
Effect of Strategic Supplier Partnership on the Operational Performance	76
Effect of Information Sharing on the Operational Performance	79
Effect of Information Sharing on the Operational Performance	81
Coefficient of Determination ( $R^2$ )	84
Effect Size ( $f^2$ )	84
Predictive Relevance ( $q^2$ )	86
Chapter Summary	86

## CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction	87
Summary	87
Practical Recommendations	93
Suggestions for Further Research	94
REFERENCES	95
APPENDICE	126

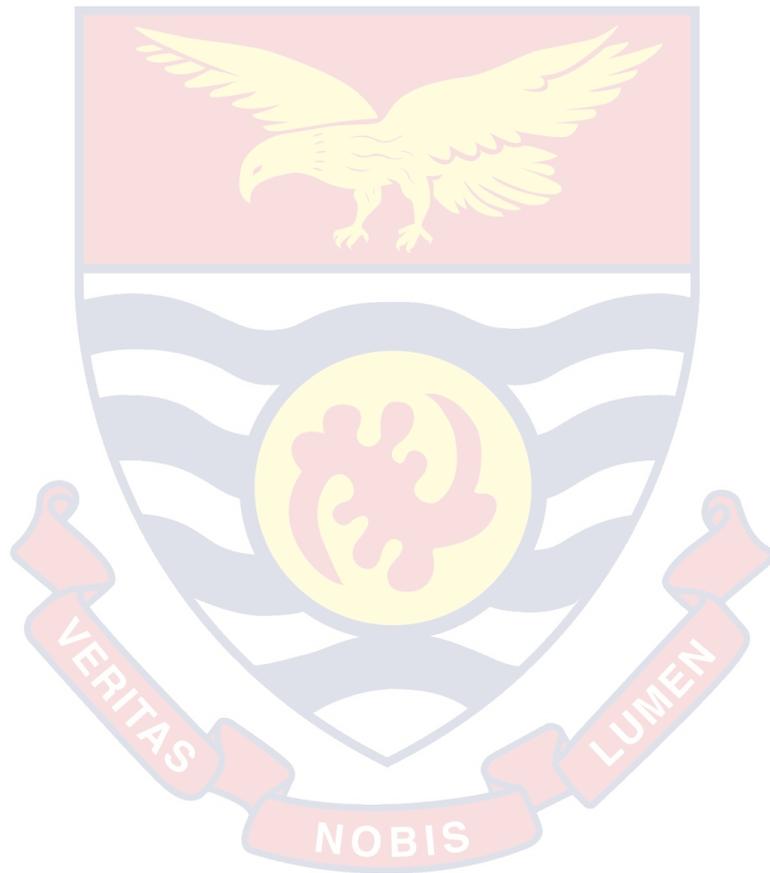


## LISTS OF TABLES

Table		Page
1	Target Population	43
2	Response Rate	48
3	Business characteristics of Pharmaceutical Distributors and Wholesalers	52
4	Socio-demographic Characteristics of respondents	54
5	Description of Top Management support practices	58
6	Description of strategic of Strategic Supplier Partnership	60
7	Description of Information Sharing	62
8	Description of Customer Relationship	64
9	Assessment of indicators and construct reliability and validity	66
10	Multicollinearity among the construct	69
11	Fornell-larker criterion for checking Discriminant validity	70
12	Heterotrait-Monotrait (HTMT) ratio	71
13	Result of structural equation model and hypothesis testing	74
14	Exogenous of target endogenous variable variance	83

## LIST OF FIGURES

Figures		Page
1	Conceptual framework	37
2	Age of the firm	53
3	Educational Qualification	55
4	Job Position	56
5	Final model extracted	72



## LIST OF ACRONYMS

AVE	Average Variance Extracted
HND	Higher National Diploma
HTMT	Heterotrait-Monotrait
NT	Network Theory
PLS-SEM	Partial Least Squares in Structural Equation Modelling
OP	Operational Performance
QM	Quality Management
QMP	Quality Management Practice
RET	Relational Exchange Theory
SEM	Structural Equation Modelling
SPSS	Statistical Package for the Social Sciences
SC	Supply Chain
SCQM	Supply Chain Quality Management
SCQMP	Supply Chain Quality Management Practices



## CHAPTER ONE

### INTRODUCTION

The pharmaceutical sector's role to Ghanaian economic development and job creation has been very slow for the past two decades. A report from Ghana Statistical Services (GSS) indicated that, in 2016 alone, the sector growth declined by 25.7%. Again, in 2018, the pharmaceutical sector growth further declined 3%. Additionally, the sector contributed a woeful 1.5% to the Ghana economy in the previous twelve years (Ghana Statistical Services, 2018). Thus, the consistent decline in the sector's performance to the economic growth would have a severe impact on the economy, if the sector's poor performance persists.

Arguably, the sector's woeful performance could be attributed to poor supply chain quality management (SCQM). Previous studies have revealed that quality management (QM) practices in the supply chain account for an additional cost ranging between 56% to 67%. The network theory (NT) suggests that availability and coordination resources in the SC are the triggers for sustainable growth and to overcome QM constraints in the supply chain. Hence, firms need to adopt relevant practices including a partnership with suppliers and support from top management. Again, relational exchange theory (RET) stressed that the sustainability of firms largely rest on the firm capability to frequently exchange quality information through the development of a long-term relationship with their customers. However, the level to which these various practices improve a firm's operational performance is limited in the literature. This research, therefore, analyses the influence of various SCQM practices on the operational performance of the pharmaceutical companies in Ghana. The section discussed the background to the study, the problem in the

study area, purpose, research objectives, hypotheses, significance, limitations, delimitations, the definition of key terms and the organization of the study.

### **Background to the Study**

The Intensity of competition in the global pharmaceutical market and the need to decrease operational costs has shifted the focus of many competitors to re-examine some of the best practices to adopt (Göllü, 2017). SCQMP has become a vital tool for firms' aiming at achieving sustainable growth (Aigbavboa & Mbohwa, 2020). These practices could help the firm improve its product and service quality (Sharma & Modgil, 2018). Firms that engaged in supply chain quality management practices can gain higher operational benefits (Li Ragu-Nathan & Rao, 2006; Sharma *et al.*, 2018). As such, failure to properly manage quality in supply chain could have severe consequences on firms' performances (Nair, 2006; Sroufe, R., & Curkovic, 2008; Blome, & Schoenherr, 2011).

Again, poor supply chain quality management could create huge losses for both the suppliers and customers resulting in a high number of product recall leading to product shortages, long lead time, delay in delivery of product and services, poor supply chain coordination and invariable low profitability (Nyamwaro, & Moronge, 2018). Hence the goal of SCQM is to improve time to market, enhance the quality of customer service and ultimately reduce operational costs (Fish, 2011). The NT posited that a firm could be exposed to supply chain quality management challenges arising from a lack of strong and weak tie among SC partners (Halldorsson, Kotzab Mikkola & Skjøtt-Larsen, 2007).

Adopting appropriate SC quality management practices can reduce quality management failures in supply chain (Tayyab Awan & Bukhari, 2020; Bisschoff, & Barnard, 2019). These practices enable firms to avoid unwanted variations, enhance system-level improvement and develop competent supply networks (Onuoha, 2018). Previous studies have found common SC to include Top Management Support (TMP), Strategic supplier (SSP), Information Sharing (IS) and Customer Relationship (CR) (Sharma & Modgil, 2018; Okoth & Ochieng, 2016; Jaafreh & Al-Abedallat, 2013).

Research studies have also revealed supply chain quality management practices to relate to firm performance (Sukati, Hamid & Baharun, 2011; kahl, Khah & khan, 2019; Awan & Bukhari, 2020). According to Siagian, Samuel and Loaharjo (2017) top management significantly influence purchasing strategies over a variety of suppliers, resolve problems hindering the smooth execution of a contract, promote supply chain integration and help address customer complaints. Supply chain quality relationships ultimately impact positively on financial performance (Tzempelikos, 2015). Strategic partnership with suppliers can significantly result in low cost of operation, long-term commitment and trust, quality improvement of product and services, increased flexibility, reduction in inventory management cost, and ultimately increase market share (Fish, 2011).

Information sharing enable firms to improve service quality, early problem detection, quick response and reduced uncertainty to demand and supply, cost reduction, better demand forecast, problem resolution, reduced cycle time, traceability, early period to market, expand various supply nodes and enhance efficiency (Lotfi, Mukhtar & Zadeh, 2013; Bilgihan, Peng, &

Kandampully, 2014). Customer relationship practices also facilitate the development of a long-term relationships, prompt respond to customer complaints, improve customer trust, loyalty and retention (Nikou, Selamat, Yusoff & Khiabani, 2016).

The theory stresses that the establishment of a strong and long-term relationship with key actors including suppliers enable focal firms to share risks and access valuable resources to enhance operational performance levels. Firms that aim at delivering high-quality product and services to meet the rapidly changing customer needs lead to improvement in operational performance (OP) (Charles & Omwenga, 2018). Operational performance focus on specific competence, proficiency and viability of the operations performance (Charles *et al.*, 2018). This competence or practices could include supply chain quality management practices aimed at meeting critical factors including product quality, delivery, flexibility and cost.

These factors are strategically significant to determining sustainable operational performance (Klassen & Vachon, 2003), thus the need for pharmaceutical firms especially distributors and wholesalers to pay more attention to performance measures. Arguably, pharmaceutical distributors and wholesalers hold the most delicate and perishable products which require a high level of consistency to maintain the quality of the product (Awan, Raouf, Ahmed & Spark, 2009; Kumar & Jha, 2019; Adebisi & Lawal, 2017). Poor quality management practices of the pharmaceutical supply chain can result in high-quality defects, high cost of the drug, expiration of medicines causing losses totalling 70% of the original expenditure (Daellenbach, McNickle, & Dye, 2012).

The Food and Drug Authority has been established to regulate and ensure good manufacturing, storage and distribution practices of these firms so that they can protect the end-users of these products (FDA, 2018). Only by incorporating effective SCQM practices through pharmaceutical supply network can this goal be accomplished. Though, the degree to which these practices can improve the performance of pharmaceutical firms such as Ghanaian remained scarce in the literature. The study, therefore, examined SCQM practices and operational of pharmaceutical distributors and wholesalers in Ghana.

### **Statement of the Problem**

The pharmaceutical industry is one of the growing industries with a market share exceeding 1.25 trillion U.S. dollars (Papalexi, Bamford, & Breen, 2020). The industry is dominated by the USA, Europe, and Japan with an average growth rate of 65.2%, 17.7%, and 6.3% respectively (IQVIA, MIDAS May 2019). Sub-Saharan Africa's pharmaceutical industry accounts for only 0.7% of the global pharmaceutical market and woefully contributes just 9.8% to the Gross Domestic Product (GDP) and job creation respectively (IQVIA Institute 2019). In Ghana, for instance, the pharmaceutical sector average contribution to GDP remains 1.5% for the past twelve years (Ghana Statistical Services, 2018).

Despite the global trend and contributions of the industry to economic growth (Acquaye, *et al.*, 2017), QM practices of the pharmaceutical SC remain a challenging task for most low and middle-income countries (Sriyakul, Umam, & Jermittiparsert, 2019). The application of inappropriate SCQM practices

(e.g., poor purchasing practices, transportation, and storage conditions) continue to undermine the growth of the industry. In Ghana, for example, the pharmaceutical distributors and wholesalers are constantly faced with considerable supply chain quality issues that either result in a high number of quality defects and expirations, frequent rejections and recalls of products, and an excessive build-up of inventories or stockout condition (Appiah, 2016).

According to Adzimah, Awuah-Gyawu, Aikins, and Duah, (2014), poor selection and evaluation of suppliers can result in the purchasing of low-quality medicine especially when the buying firms have little or no knowledge about the quality of the medicine. Again, Amoah, (2018) found a lack of effective distribution practices and improper product handling technique as one of the causes of quality management failure faced by pharmaceutical distributors and wholesalers in Ghana, leading to high-quality defects and degradation of medicine due to mishandling during packing and poorly logistics management. Additionally, Gebremariam and Unade, (2019) indicated that lack of storage facility and capacity to monitor the room temperature impact negatively on the quality and efficacy of the medicinal product resulting in a high number of degradation and quality defect.

Hamill, et al., (2019) revealed that uncertainty about the source of medicine, efficient supplier quality management practices, poor data management and exchange, inadequate information sharing, outmoded supply chain approaches, and poor record-keeping undermined the operational efficiency of pharmaceutical distributors and wholesaler in Ghana. These challenges mostly expose the pharmaceutical supply chain to severe quality constraints (Adzimah, *et al.*, 2014; Markartah, 2016), leading to significant

negative health and economic impacts on consumers, especially the poor and vulnerable. Again, Woodburn (2013) in his study revealed that 67% of stock-outs by local manufacturers, distributors and wholesalers in Ghana occur due to poor forecasting leading to a high number of drug expirations resulting in huge financial losses to these firms.

It was estimated that the projected high level of pharmaceutical waste generated due to expired drugs, non-moving goods, slow-moving products, and un-wanted products are estimated to be US\$13.3bn globally (Manoiu, & Craciun, (2018). A study by Shukla (2011) revealed that approximately 3% to 10% of pharmaceutical products are recalled and rejected every year by distributors and wholesalers, 50% to 70% goes to reverse distributor commissions and only 30% to 50% are received as the value on their returned goods. In 2018, for instance, pharmaceutical distributors and wholesalers including Kinapharma, Limited, Poku Pharma Limited, Phyto-Riker (Ghana) Pharmaceuticals Ltd, Sarkuff pharmacy and Lymens Supplier's limited lost millions of Ghana Cedi's through product recall due to supply chain quality errors.

The need for individual firms to implement SC quality management practices to address the quality failures is urgent. SCQMP have been found to increase quality of service, decrease wastage, time of delivery, cost and ultimately improve operational performance (Okoth and Ochieng, (2016). SC quality management represents an optimal strategy for pharmaceutical distributors and wholesalers in Ghana to improve the efficiency of their operations timely and at a reduced cost. Most existing studies on SCQM focused on the manufacturing firms (Teomana & Ulengin, 2018; Thai & Jie 2018;

Basheer, Shiam, Awn & Hassan, 2019; Tayyab, Awan, & Bukhari, 2020; Nadar & Rani, 2020; Alzoubi, Ahmed, Al-Gasaymeh., & Kurdi, 2020). Few firms focused on the services sector (Mehralian, & Babapour, 2016; Adebisi, & Lawal, 2017; Kumar & Jha, 2018; Bisschoff, & Barnard, 2019).

Very few studies focused on the pharmaceutical firms (Awan, Raouf, Ahmed & Spark, 2009; Okoth & Ochieng, 2016). In addition, previous studies mainly focused on the direct relationship between the buying companies and either suppliers or customers and firm performance. Integrated quality practices of the focal firm its suppliers and customers supply chains is still rare. Therefore, this study seeks to assess the relationship between firm its suppliers and customers. Again, the effect of SCQMP on pharmaceutical distributors and wholesalers have rarely been investigated in Sub-Saharan Africa in general and Ghana in particular. Therefore, the current study attempts to address the gaps in the existing literature by investigating the impact of SCQM practices on operational performance pharmaceutical distributors and wholesalers in Ghana.

### **Purpose of the Study**

The purpose of the study was to examine the effect of supply chain quality management practices on the operational performance of Pharmaceutical Distributors and wholesalers in Ghana. The following specific objectives were developed to:

1. Examine the effect of Top Management Support on operational performance of Pharmaceutical Distributors and Wholesalers in Ghana;
2. Investigate the effect of Strategic Supplier Partnership on operational performance of Pharmaceutical Distributors and Wholesalers in Ghana

3. Assess the effect of Information sharing on operational performance of Pharmaceutical Distributors and Wholesalers in Ghana;
4. Ascertain the effect of Customer Relationship on operational performance of Pharmaceutical Distributors and Wholesalers in Ghana.

### **Research Hypotheses**

The study tested the following research hypothesis:

H<sub>1</sub>: Top Management Support has no significant effect on operational performance of pharmaceutical distributors and wholesalers in Ghana

H<sub>2</sub>: Strategic Suppliers Partnership has no significant effect on operational performance of Pharmaceutical Distributors and Wholesalers in Ghana

H<sub>3</sub>: Information sharing has no significant effect on operational performance of Pharmaceutical Distributors and Wholesalers in Ghana

H<sub>4</sub>: Customer Relationship has no significant effect operational performance of Pharmaceutical Distributors and Wholesalers in Ghana

### **Significance of the Study**

The findings are to throw insight into the phenomenon of SCQM practice and operational performance of Ghanaian Pharmaceutical Distributors and Wholesales firms. This is because the study result would expose pharmaceutical distributors and wholesalers to the specific SC quality management practices which directly influence its operational performance levels. This would help the management of such firms to implement relevant quality management practices aimed at improving supply chain quality management and invariably operational performance levels.

Also, the outcome of this result would further be deepening existing literature and theory. The study's findings would also help potential researchers identify appropriate theories to adopt when conducting studies in areas of SCQM practices and operational performance. Finally, the findings of the study will inform researchers about the best approach to use when dealing with issues such as SC quality control practices and firm efficiency. Specifically, the study would provide potential researchers with the necessary information to help them choose the appropriate research philosophy approach and design that best fit their research needs. The study's outcome would also add to the existing literature in the area of SCQM practices to help address some existing gaps.

### **Delimitations**

The research was carried out within the framework of investigating SCQMP practices and operational performance of pharmaceutical distributors and wholesalers' services firms registered with the Pharmacy Council of Ghana (2018), Chamber of Pharmacy Ghana (2018) and Medpage Ghana respectively. The study was delimited to firms within Greater Accra and Ashanti region of Ghana. This was due to the high concentration of such firms in these regions in the country. The study, therefore, excluded pharmaceutical distributors and wholesalers which are located outside the two regions in Ghana. Finally, the study excluded other categories of firms such as food and beverages, hospital, pharmaceutical retailers and over-the-counter drug stores.

## Limitations

This study was confined to the target population of Pharmaceutical distributors and wholesale firms within two selected regions comprising Greater Accra, and Ashanti in Ghana. More precisely, only firms registered with the Pharmacy Council of Ghana (PCG), Ghana Chamber of Pharmacy (GCP) and Medpage Ghana within the two selected regions were included in the study. As such, the study limited its findings, conclusions and recommendations mainly to these groups of firms within the two major regions in Ghana. Additionally, the analysis was limited to the primary respondents' viewpoints and opinions. As a result, the respondent's potential false information may lead to a misleading result.

furthermore, the study relied on closed-ended and rating scale type question items which restricted the amount of information obtained from respondents, particularly in relation to the study's main constructs. This is because the respondents only answered the questionnaire's question items, leaving no space for additional feedback or thoughts. Finally, non-responses, incompletely questionnaires and inaccessibility of certain respondents may have impacted the study's results.

## Definition of Terms

**The term "supply Chain"** refer to activities that are designed to manage the movement of goods, facilities, funds, information from manufactures to final customers in order to meet customer demand in a timely and effective manner.

**Quality management** are management philosophy that emphasizes the need to eliminate waste, reducing lead time, generate high quality product and minimize cost.

**Supply chain quality management** refer to integration of all organization in a supply channel aimed at continuously improving processes, products and services quality to create value and customer satisfaction.

**Supply chain quality management practices** are the various strategies, techniques, tactics or methods used by firms to ensure that quality of product and services are enhance at minimum cost.

**Operational performance** is the assessment of a company's output against predetermined expectations

### **Organization of the Study**

The thesis was divided into five chapters the first of which covered the study's context, statement of the issue, intent, basic objective research hypotheses, significant, delimitations, limitations definition of words, and study organization. Chapter two presented the literature review and conceptual framework. The theory, method, design, population, sampling technique, data collection instrument, data collection procedure, and data processing and analysis were all covered in chapter 3. The findings and discussion section were introduced in chapter 4, and the study's overview, conclusions, and recommendations were addressed in chapter 5

## CHAPTER TWO

### LITERATURE REVIEW

#### Introduction

The study's goal was to see how supply chain quality management activities impacted operational efficiency of pharmaceutical distributors and wholesalers in Greater Accra and Ashanti region. In relation to the study's research goals, the chapter addressed detailed review of literature. The theoretical analysis, empirical review and current situation were all addressed in detail in this chapter.

#### Theoretical Review

This research was underpinned by network and relational exchange theory because to their importance to the research objectives of the study. As a result, this section addressed NT and relational exchange theory, as well as how they relate to the study's research goals.

#### Network Theory

It was formulated by Jacob Mereno in 1930 to study inter-organisational connectedness (Pfeffer, & Salancik, 2005; Borgatti, Mehra, Brass & labiana, 2009). The theory defines a set of relationship in which firm resources and activities are effectively utilised by firm in a network to improve its performance (Håkansson & Snehota, 1989). The theory assumes that relationship development by firm and strategic positioned of a firm embedded in a network are the determinant of achieving competitive advantage. The theory posited that establishing a more central position and creating stronger relationship with partners enhance the responsiveness for resources and

coordination between the buying firm and its suppliers (Bernardes & Zsidisin, 2008).

Firms' sustainability is largely dependent on its interaction with its supply partners and the resources available in the supply chain network (Silvestre, 2015). The network theory viewpoints stressed that critical resources may lie across firms' boundaries and be embedded between firms' practices and procedures, and these different supply chain links between firms may be the driving force of relationship rents and competitive advantage. Humphries and Gibbs, (2010) emphasize the role of network theory in the SCQM context essentially based on the ground that SCQM implies the management of the inter-firm relationship and resources and that sustaining quality across the entire SC needs companies to form coordinate their activities, share resources and collaborate actively in forecasting, planning and engage in joint problem solving with key suppliers.

Strategic supplier partnership, an essential component of SCQM highlights the impact of joint problem solving and sharing of strategic resources between suppliers and customers to improve the OP of these firms (Song, Jung, Ki, & Feiock, 2020). Keynak and Hartley (2008) emphasize the role of top management in establishing an enabling environment to continuously improve the inter-personal relationship and resources between the buying firm and its suppliers, which ultimately enhance operational performance. The theory emphasises the role of partnership with suppliers, where firm and their suppliers can mutually benefit from developing a strong tie and sharing of resources.

Suppliers' selection is a key component in business transaction, and emphasis on the position of strategic relation, the network theory assists top

manager to examine each supplier's financial, technical, quantification capacity before any contract is executed (Fayezi, Zutuhi & O'Loughlin, 2010). Procurement managers for instance, can select suppliers base on their capability to deliver quality product and services promptly at reduced cost to the firm. The theory emphasis on the commitment of top managers in making realistic assessment of supplier's quality resource and customers demand along the supply chains (Gold, Seuring & Beske, 2010). Thus, to properly manage and improve quality of supply, these firms can adopt practices such as top management support and strategic supplier partnership. This practice emphasises on building strong relationships highlighting the relevance of the network theory.

### **Relational Exchange Theory**

The relational exchange as propounded by Macaulay (1963), to study trust-commitment relationship (Lai, *et al.*, 2005). It has been used to study the way firms use relational mechanism to control effectively buyer-seller self-seeking interest in a transactional relationship (Lai *et al.*, 2005). Supplier-customer relationship is a precondition of relational exchange formation, while mutual trust and commitment are manifestations of relational exchange (Song, Jung, Ki, & Feiock, 2020).). Relational exchange can minimize the anticipation of resourceful behaviour, boost confidence between firms, and decrease transaction costs, which increase relationship performance (Goo, & Huang, 2008).

Firm trust in customer (goodwill and obligation) contribute to the cooperative relational behaviour of both parties such as shared duty, joint

forecasting and planning, and flexible arrangement which improve the seeming relationship performance of buyers in terms of cost, and quality (Schein, & Schein, 2018). Relational exchange theory explains how SCQM practices integrate firms with their customers, suppliers and other stakeholders coordinate its activities toward reducing total operating cost. To achieve this result, the relational exchange theory shows mutual gains that joint associates fail to produce individually (Soltani *et al.*, 2011).

In a study by Briggs and Grisaffe (2010) to examine the role of relational exchange and customer relationship, they found that customer loyalty is dependent on customer belief, which also influences customer trust. The study concluded that buying firm must provide the necessary resources to enhance the quality of services and maintain long term relationship with the customer ((Benítez-Ávila, *et al.*, 2018). In another study to examine the factors affecting relation quality in supply chain quality management context, Carri (2012) found information sharing to be one of the key ingredients of achieving relational exchange norms such as trust and mutual commitment.

The study concluded that continuously sharing information in the SC increases trust-building and knowledge sharing, thus leading to the effective management of collaboration between buying firms and customers. Customer relationship can be considered as key strategic assets, RET state that, firm can gain competitive advantage by engaging in trust-based relationship with customers. Additionally, trust-based relationship by the pharmaceutical players helps in spending resources to building and sustaining relationships, instead of managing contractual tensions in the supply chain (Joshi & stump, 1999).

Pharmaceutical distributors and wholesalers can focus on building stronger relationship through sharing of timely and quality information with key customers. Focal firms including the pharmaceutical Distributors and Wholesale firm in Ghana can establish strong mutual relationship to effectively manage most valuable customers. Thus, to properly maintain competitive advantage in the industry, these firms can adopt practices such as Customer Relationship and Information Sharing. This practice emphasises on developing close and long-term relationship highlighting the relevance of the relational exchange theory.

### **Conceptual Review**

#### **Supply Chain**

This section discussed concept of supply chain in relation to existing studies. it is a value creation network of activities of suppliers and customers (Parmata, Rao, & Rajashekhar, 2016). It is a distribution chain that link manufacturers, wholesalers, retailers, and customers in order to ensure timely delivery of product and services (Amedofu, Asamoah & Agyei-Owusu, 2019). Supply chain has received tremendous recognition over the years due to the significant contribution to manufacturing and services industries globally (Manuj, & Mentzer, 2008; Ageron, Gunasekaran, & Spalanzani, 2012; Sharma, Garg, & Agarwal, 2012; Lin, *et al.*, 2013; Fan, & Stevenson, 2018). Research have offers different explanation for SC and for instance, Sharma, Garg, & Agarwal (2012) defined supply chain as coordinated firms' activities design to deliver product promptly to the customers.

Supply chain activities requires the involvement of both partners in the chain (Whitelock, 2019). This definition clearly indicate that supply chain activities can never be achieved in isolation but rather through the collective involvement of all stakeholders across the network (Klassen, & Vachon, 2003; Christopher, 2016). The next section review quality management of pharmaceutical firms based on existing literature.

### **Quality Management**

This section discussed the concept of quality management as per existing studies. Quality management is considered as critical and supposed to be the duty of all partners in the supply chain network (Soares, Soltani, & Liao, 2017). Quality management has invariably received increasing acknowledgement in supply chain management (Huo, Ye, Zhao, & Zhu, 2019). Effective Quality management practices reduces defect rate and cycle time, improve on-time delivery and dependability, meeting schedules and customer demand (Gulati, & Smith, 2009; Lynn, & Shambju, 2012; Singh, Singh, & Singh, 2018). However, poor quality management practices could lead to large scale quality issues such product recalls, stock shortage, service deficiencies, increase cost that can negatively affect profit and damage brand reputation (Steven, & Britto, 2016).

QM has received tremendous recognition in SCM over the years due to the significant contributions of quality management in both manufacturing and service sector across the world (Kaur, Singh, & Singh, 2019; Khan, & Yu, 2019). Researchers have offer various definitions for quality management and for instance, Fernandes, Sampaio and Carvalho (2014) defined quality

management as a set of strategic management approach that align every functional department of the firm and its suppliers to satisfy the requirement of the buyers. Bastas and Liyanage (2018) defined quality management as strategic approach that coordinate, manage and align organizational product, services and processes in order to satisfy both customers and stakeholders need.

Quality control entails not just detecting and mitigating manufacturing defects, but also achieving quality across the company and its supply chain network, as well as persuading network firms (Kim, Son & Kim, 2016). These definitions obviously point out that in order to ensure continuous high-quality product delivery to customers in SC network, effective quality management practices are needed.

### **Supply Chain Quality Management**

This section discussed the concept of SCQM practices in line with existing studies. It is a risk management strategy design to ensure distribution of product that is free of defect both inside and out chain, minimize or even eliminate product defect (Song *et al.*, 2017). Supply chain quality management is a strategy design to improve operational quality and customer satisfaction (Sampaio, Quang, & Carvalho, 2016; Soares, Soltani & Liao, 2017). SCQM has received the attention in literature in recent years because of its significant contribution in managing product quality, service quality and processes quality (Robinson, & Malhotra, 2005; Talib, Rahman, & Qureshi, 2012).

Researchers have provided different definitions for SCQM, for instance, Huo *et al.* (2014) defined it as strategic management approach that align both internal and external function of organization to jointly manage quality related

relationship and communication with the aim to achieving some level of quality standard at much lower cost. Mahdiraji and Ghaffari (2012) defined SCQM as strategic network design to improve supply chain quality, meet market demand and rapidly changing customer expectation. Kushwaha (2010) defined it as strategic approach adopted to integrate all pipeline partners to improve quality delivery by the supply chain partners in order to demonstrate trust between partners and deliver safe and reliable product to customers.

These definitions clearly indicate that SCQM requires the adoption of various strategies, method and practices (Jaafreh & Al-Abedallat, 2013; Kaur, Singh, & Singh, 2019; Tayyab, Awan, & Bukhari, 2020). The next section review supply chain quality management practices from existing literature.

### **Supply Chain Quality Management Practices**

This section discussed SCQM practices in line with relevant literatures. it is a performance improvement activity that allows and increase trust for supply chain quality from production through distribution network in order to meeting the requirement of the customer timely and at lower cost (Tiendem, 2020). It is primary concern with internal and external quality orientation aim at achieving customer expectations through building a series of close and positive relationships with suppliers (Azar, Kahnali, & Taghavi 2010). Thus, the absence of relevant supply chain quality management practices could have severe impacts on pharmaceutical good manufacturing, distribution and storage best practices.

Previous literatures have revealed frequently sighted supply chain quality management practices to include, TMP, SSP, IS and CR (Salaheldin,

2009; Chong *et al*, 2011; Sukati, *et al*, 2012; Jaafreh & Al-abadallat 2013; Soares, 2017; Teoman & Ulengin, 2017; Khahl, Khahl & Khan, 2019; Kaur, Singh, & Singh, 2019; Mohammed, Brahma & Aderaw, 2019; Tayyab, Awan, & Bukhari, 2020). However, the extent to which these frequently sighted practices influence the operational performances of pharmaceutical distributors and wholesalers in less developed countries including Ghana appears scanty. This study, therefore, examine the effect of these common SCQM practices on the operational performance of pharmaceutical distributors and wholesales firms.

### **Top Management Support**

This section discussed the concept of top management support as per existing studies. Top managements are higher-level personnel in an organization responsible for strategic goal setting, planning, implementation, assessment and evaluation of key performance outcomes (Souza, & Alves, 2018). TP can be considered fundamental for the rest of the SCQM because it provides organizational direction, facilities the deployment of resources, provide guidelines and feedback for workforces as well as customers to achieve firm objectives (Singh & Sushil, 2013).

Again, top management are responsible for providing quality initiatives and resources to achieve the strategic goals and improve the firm performance through the value addition of their product and services delivered to customers (Nosratpour, Nazeri & Soofifard, 2018). The quality of managerial decisions is the driving tool of innovations and quality outcomes (Zuraik, & Kelly, 2019). Top management is the primary human representative that changes the strategic

goal of the organization into desired managerial actions, develops policies to address internal and external pressing challenges (Braunscheidel, & Suresh, 2018).

The support of top management is the main driving factor that pushes the firm toward an efficient and cost-effective execution of supply chain goals Barber, (2017). TM provides the necessary resources to carry out a market survey that identify customer demand as well as make necessary efforts to address them (Truong, *et al.*, 2017). TM defines firm vision and goals, creates the enabling environment in which all workforces are motivated to focus on addressing customer needs (Kumar, & Sharma, 2018). Top management sets up a work plan which encourages novelties and unremitting improvement in an organization (Tetui, 2017).

Thus, reduces the chances of employee mistakes and minimizes variations in the processes. Supplier management, suppliers' performance assessment and creation of long-term relationships with suppliers cannot be successful without the support from top management (Jääskeläinen, 2020). Top management ensures that supplier selection is based on a revision of key demanding criteria such as quality of products and services and consistency of delivery activities (Nair, Jayaram, & Das, 2015). Top management facilitates upstream and downstream integration of participating firms in the supply network (Hoejmose, Brammer, & Millington, 2012).

This practice has been found to substantially impact the performance of pharmaceutical firms. However, the degree to which this practice affect the operational performance of pharmaceutical Distributors and Wholesalers in

Ghana appears scanty. This study, therefore, Examine the effect of Top Management Support on the operational performance of these class of firms

### **Strategic Supplier Partnership**

This section discussed the concept of strategic supplier partnership as per existing studies. A strategic supplier partnership is defined as a firm ability to create, develop, and maintain long-term partnerships with committed and trusted suppliers (Qrunfleh, & Tarafdar, 2013). It is also defined as a knowledge-sharing strategy between a buying firm and its suppliers to generate mutual benefits (Qrunfleh, *et al.*, 2013). It is aimed at reducing costs and increase trust levels between buying firms and their key suppliers, improve and leverage design capabilities and enhance responsiveness, create learning routines, and reduce or remove wasted activities and time (Cai, Goh, De Souza, & Li, 2013). Strategic supplier partnership may include joined processes, long-term contracts, mutual quality development plans, and risk and reward sharing (Srinivasan, Mukherjee, & Gaur, 2011)

Strategic partnerships with suppliers enable the firm to work more effectively with a few important suppliers who are willing to share responsibility for the success of the products (Kim, & Chai, 2017). Engaging in partnerships with suppliers allows both partners to collaborate and collectively work towards reducing stock-outs, minimizing waste, reducing costs, and meeting delivery schedules (Mukopi, & Iravo, 2015). The practice includes the selection of a few suppliers who have both technical and financial resources to deliver quality products and develop strategic long-term relationships with these key suppliers (Li *et al.*, 2005).

The strategic partnership ensures that suppliers fully understand the importance of quality and also quality criteria of products are successfully meet (Srinivasan & Kurey, 2014). Supplier's participation in quality improvement initiatives enables the buying firm to mutually share resources and competencies, which can not only prevent mismatches among different products but also minimize operational costs and lead times (Yeung *et al.*, 2009). This practice has been found to substantially impact the performance of pharmaceutical firms. However, the degree to which this practice affect the OP of pharmaceutical Distributors and Wholesalers in Ghana appears scanty. This study, therefore, Examine the effect of Strategic Supplier Partnership on the operational performance of these class of firms

### **Information Sharing**

This section discussed the concept of information sharing as per existing studies. Information sharing is described as the exchange of strategic data such as stock levels, forecasts, policy directions, and marketing strategies available to firms forming a SC network (Cao & Zhang, 2012). It is aimed at enhancing the operational efficiency of the whole supply chain network (Qrunfleh, 2010). Information sharing is a vital tool for promoting supply chain coordination and collaboration among parties in the supply network. It also allows firms to access and share vital data along with the supply network, making the process more cost-effective and efficient (Cao, 2010).

Again, frequent sharing of information between suppliers and buyers promotes integration in the SC, leading to high OP (Khan *et al.*, 2016). Youn *et al.* (2013) stated that the extent of quality and accuracy with which information

is dispensed between supply chain partners is largely dependent on mutual trust and commitment demonstrated by both parties in the supply network. Information sharing has been found to reduced levels of complexity, enhanced service performance levels, customer responsiveness and decreased costs (Flynn *et al.*, 2010). Previous studies found information sharing to substantially impact supply chain practices including planning, delivery practices and performance (Abdallah *et al.*, 2014; Effendi, 2015).

This practice has been found to substantially impact the performance of pharmaceutical firms. However, the degree to which this practice affects the operational performance of pharmaceutical Distributors and Wholesalers in Ghana appears scanty. This study, therefore, Examine the effect of Information Sharing on the operational performance of these class of firms.

### **Customer Relationship**

This section discussed the concept of customer relationships as per existing studies. Customer relationship is an activity design to enhance customer involvement in business transactions through the creation of long-term relationships with customers, addressing customer complaints, and improving customer satisfaction (Juanamasta, *et al.*, 2019). The purpose is to improve products and service quality delivered to the customer and to maintain customer loyalty (Liu, Lee, & Hung, 2017). Maintaining trustworthy and committed customers are vital to the survival of every firm in a competitive business environment (Gilaninia, Almani, Pournaserani, & Mousavian, 2011).).

It is a strategic asset that gives a firm a competitive advantage over its competitors in the marketplace (Maury, 2018). Keeping a close relationship

with customers helps recognize market opportunity by realizing the needs of the customers (Lee, Tang, Yip, & Sharma, 2018). This can be achieved through engaging in constant problem-solving initiatives (Zurba, *et al.*, 2012). Kibbeling, *et al.* (2013) argued that a firm can achieve a competitive advantage by improving the quality of product and services supply to immediate downstream customers and their customer and ultimately to the end-user.

Participation of customers on quality improvement goals can also help improve operational performance in terms of delivery accuracy and cost reduction (Zhang, *et al.*, 2019). Again, an effective and uninterrupted information exchange with customers will also enable the organization to address the needs of its customers in a timely and cost-effective manner (Nkrumah, Apam & Boadu 2020). Response from customers on quality and delivery performance enhance the visibility and traceability of products, minimize the adverse impacts of quality constraints (Flynn & Zhao, 2015). Besides, taking part in customers' quality development schemes ensures that products can be distributed, stored, and handled in the most efficient conditions, averting potential quality challenges (Zhao *et al.*, 2013).

This practice has been found to substantially impact the performance of pharmaceutical firms. However, the degree to which this practice affect the operational performance of pharmaceutical Distributors and Wholesalers in Ghana appears scanty. This study, therefore, Examine the effect of customer relationship on the operational performance of these class of firms

## **Operational Performance**

Firms that aim at delivering high quality product, processes and services to meet the rapidly changing customer needs at the lowest possible cost give much emphasis on operational performance (Charles & Omwenga, 2018). Operational performance is basically measurement indicator associated with efficiency of business's operation (Ya'kob & Jusoh, 2016). It is a strategic performance goal that firm need to achieve by deployment of relevant resources and strategies (Slack, 2005). Operational performance largely depends on adoption of strategic measurement frameworks that can result high performance outcome (Charles & Omwenga, 2018).

Operational performance dimensions include cost, delivery speed, quality, and flexibility (Seuring & Müller, 2008; Slack, Chamber, & Johnston, 2010). Operational performance is therefore the firm capacity to effectively and efficiently reduce order and lead time, cost of operation, raw material and distribution capacity (Munir, Jajja, Chatha, & Farooq, 2020).

## **Empirical Review**

This section included a thorough analysis of relevant literature on the study's research goals. This was done in order to criticize previous research by comparing and contrasting their result.

## **Top Management Support and Firm Performance**

The strategic role and commitment of management in addressing quality management issues in supply chains is emphasis in literature (Deming, 1986; Quang, *et al.*, 2016). Top management defined organization mission and goal,

provide strategic direction and resources to carry out market survey, promote high levels of collaboration with key suppliers and customers, actively involved in product selection of suppliers, establishment of long-term relationship with (Sabella, Kashou, & Omran, 2014; Quang, *et al.*, 2016). Previous literature has found a correlation between TM support practices and OP level of manufacturing and services firms globally (Soares, Soltani, & Liao, 2017; Teoman & Ulengin, 2017).

Jaafreh and Al-abadallat (2012), investigated the correlation between top management and operational performance in Jordan service sector. Using Correlation and Multiple Regressions Analysis, the study found that top management supports have direct positive relationship on operational performance. Xiang *et al.* (2010) revealed in their study that TM support has a substantial positive effect on internal quality management operations and external quality performance of the SC. Contrastingly, a study by Mohammed, Brahma and Aderaw (2019) investigated the impact of TQM system on the TM of pharmaceutical processing companies in Ethiopia, found that TMS has no substantial positive impact on operational performance.

In Ghana, study by Agyei-Owusu, and Okpoti (2019) found that leadership commitment impact positively on environmentally sound operation and invariably firm performance. However, there is little evidence of TMS on services sector operational performance of firms especially among pharmaceutical distributors and wholesalers. It could be deduced from the study that most of the studies on TMS activities and company results were carried out in manufacturing companies. (Moktar *et al.*, 2012; Kim *et al.*, 2012; Soare, *et*

*al.*, 2017; Sharma, *et al.*, 2018; Mohammed, *et al.*, 2019). Sharma, *et al.* (2018), Mohammed, *et al.* (2019) focused on Pharmaceutical manufacturing firms.

Few studies by Mellat-Parast, *et al.* (2011) and Jaafreh *et al.* 2012 concentrated on services firms. Also, no studies in the services firms has use advance analytical tools including structural equation modelling in the analysis. Again, the consistency and generalization could be affected of the research findings. Again, none of these studies were found within pharmaceutical firms in Ghana. Using the structure equation modelling, this study hypothesizes that strategic supplier partnership significantly improve operational performance of pharmaceutical firms in Ghana.

### **Strategic Supplier Partnership and Firm Performance**

The role of supplier's in meeting customer needs has received much attention in recent literature (Soares, Soltani, & Liao, 2017). Suppliers handle the product or service design and process management (Kaynak & Hartley, 2008). Partnership with supplier to meet customer need is the key determinants of supplier chain quality management sustainability (Sun & Ni, 2012). Strategic ties with suppliers enhance information exchange, reduce uncertainty and improve firm performance (khan & Siddiqui, 2018). Research have shown that strategically collaborating with suppliers allow firm to have product in which the quality is high, delivered on time with right quality, reduce downtime incident, and rate of damage product (Nurdjannah & Hamid. 2018).

Effective supplier partnership can significantly reduce inventory level and waste, cost and enhance accuracy (Yeung, 2008). Amedofu, Asamoah and Agyei-Owusu (2019) Stressed that building and maintaining strategic

relationship with suppliers allows the partners to collectively work toward avoiding defect, decreasing stockouts, reducing prices, and able to deliver the product on the agreed time. Previous studies have found a correlation between strategic supplier's partnership practices and operational performance in manufacturing and services firms (Agus, Makhbul & Hassan, 2008; Vevek *et al.*, 2011; Khan, Liang & Shahzad, 2015; Khan & Siddiqui, 2018).

Fish (2011) concluded that strategic partnership with suppliers create trust, long-term relationship, reduce supply base, and formal measurement system, cost-related efficiency such as unit cost reduction and Time-based improvement such as speed, reliability, delivery and cycle time. In a similar study, Zu and Cui (2013) investigated the impact of supplier relationship and management on quality practices. The study found that supplier partnership has significant effect on operational outcomes. Hussain, Hussain, Akbar, Sulehir and Magbool (2014) found strategic supplier partnership practice to have a weak positive relationship with performance.

Also, Jie *et al.* (2013) assessed the correlation between trust and strategic supplier partnership and competitive advantage. The result show that trust, strategic supplier partnership is viewed as determinants of competitive advantage. The result further indicates that Partnerships, coordinated effort with trust are key components for creating networks. Again, Onyango, Onyango, Kiruri and Karanja, (2015) found significantly positive correlation between SSP and internal OP. Their assertion was supported by similar studies conducted by Agus (2011).

In another studied, Agus, Makhbul and Hassan, (2008) examined the importance of strategic supplier partnership on quality of product in Malaysian

reducing companies using SEM. It was found that SSP show significant positive effect on product quality. In contrast to these findings, Tangus, *et al.*, (2015) the effect of supplier growth on the output of Kenyan manufacturing companies was investigated. The study found no significant relationship between supplier development and firm performance. Okoth and Ochieng, (2016) in their studies to investigate the existing correlation existing between SCQM practices and organizational performance of pharmaceutical companies in Kenya. Using linear regression, found significantly positive relationship between strategic supplier partnership and organizational performance of pharmaceutical distributors and wholesalers in Mombasa, Kenya.

In Ghana, Nkrumah, Apam and Boadu (2020) examined the impact of SCMP on operational performance of downstream petroleum companies in Ghana. Using PLS–SEM technique, the studies found that SSP has a significantly positive effect on operational performance. However, the impact of SSP on operational performance of services companies particularly among pharmaceutical Wholesaler firms is rare. Also, none of the study in the Ghanaian context has examined the effect of strategic supplier partnership on OP of pharmaceutical firms. From the review, majority of the studies on SSP practices and firm performance were carried out in the manufacturing firms (Khan, *et al.*, 2015; Tangus, *et al.*, 2015; Al-Abdallah *et al.*, 2014; Vevek *et al.*, 2011; Agus, *et al.*, 2008;).

Few studies by Nkrumah, *et al.*, (2020), Okoth, *et al.*, (2016) focused on services firms. Very few studies use advances analytical tools such PLS-structure equation modelling analyse the result which could impact the accuracy and generalization of the findings. Again, Khan, *et al.*, 2018; Okoth, *et al.*, 2016

concentrated on pharmaceutical firms. However, none of these studies were found within the pharmaceutical firms in Ghana. Using the structural equation modelling, this study hypothesizes that strategic supplier partnership significantly improve operational performance of Pharmaceutical Distributors and Wholesalers in Ghana.

### **Information Sharing and Firm Performance**

Previous studies have extensively emphasis the impact of information sharing (Myrelid, 2011; Yang & Maxwell, 2011; Khurana, Mishra, & Singh, 2011; Lotfi, Mukhtar, Sahran & Zadeh, 2013). Implementing quality management practices in SC has been challenging due to lack of accurate and timely and quality information dissemination across the supply network (Chong, Ooi & Sohal, 2009; Wu, Zhai, Zhang, & Liu, 2011). Information is vital for sustaining buyer-supplier relationship in the long run (Akrou, Diallo, Akrou & chandon, 2016; Teller, Kotzab, Grant, Holweg, 2016; kumar & Rahman, 2015).

Existing research have revealed substantial correlation between information sharing and operational performance of manufacturing and services companies (Hsu, Kannan, Tan & Leong, 2008; Rashed, Azeem, & Halim, 2010; Sukati, *et al.*, 2011; Marinagi, Trivellas, & Reklitis, 2014). For instance, Sukati, *et al.* (2011) analysed the correlation between SC management strategy, SC responsiveness and competitive Advantages. 200 structured questionnaires were distributed to Malaysian consumer goods firm. Data were analyse using regressions. It was revealed that sharing of information substantially affect supply chain responsiveness and firms' competitive advantage.

Again, Rashed, *et al.*, (2010) examined the mediating role of IS between quality of information and SC performance of manufacturing companies in Greece. Employing regression analysis, the study found IS mediating between quality of information and SC performance. In a similar study, Song and Liao, (2018) study focused on operation capability and information sharing on performance. The findings show that IS has effect on operations capability of the firms. The study also revealed that there is insignificant effect between the interactive IS and responsiveness on firm performance. Furthermore, Şahin and Topal, (2018) in their study to investigate the correlation between sharing of information and operational performance of the firms.

Using structural equation modelling, found that information sharing is indirectly related to cost but directly related to financial performance. Contrary to the earlier findings, study by Okoth *et al.*, (2016) indicated that sharing of information has significantly negative impact on organisation performance. Rashed, Azeem and Halim (2010) examined the impact of IS and sharing of knowledge on supplier operational performance found that sharing of information is a requirement for sharing of knowledge and partnership is critical to supplier's operational performance. Additionally, Bilgihan, *et al.* (2014) revealed that sharing of information by both internal and external partners positively affect information quality, reducing the cost product, settling of dispute, maintaining the quality of the product and speedily delivery, and competence of the pharmaceutical supply chain.

In Ghana, studies by Asamoah, Andoh-Baidoo and Agyei-Owusu (2016) found substantial correlation of sharing of information on SC integration and performance. However, there is little evidence of the effect of IS on OP of

pharmaceutical firms especially pharmaceutical distributors and wholesalers' firms in Ghana. Previous researches have focused on the manufacturing and services firms with few of them addressing the issue within pharmaceutical firms (Rashed, Azeem, & Halim, 2010; Okoth *et al.*, (2016). Also, few of the studies deployed robust statistical tools including PLS-SEM (Baihaqi & Sohal, 2013; Huo, Zhao & Zhou, 2014; Şahin & Topal, 2018) which could affect the generalization of their respective findings.

Okoth *et al.* (2016) focused on pharmaceutical distributors and wholesalers in Kenya. Using structural equation modelling, this study hypothesizes that Information Sharing significantly improves operational performance of pharmaceutical Wholesalers firm in Ghana.

### **Customer Relationship and Firm Performance**

Customer relationship has evolved as a model for handling long term relationship with customers (Nikou, Selamat, Yusoff & Khiabani, 2016; Branner, 2020; Migdadi, 2020). Customer relationship management is a business strategy that creates relationship value by predicting understanding, forecasting and responding to the needs of current and potential customers of an organization (Krishnan *et al.*, 2013). Customer value is a determinant to firm's success since customers select goods or services that satisfy their changing needs (Omoush, 2020). It consists of activities that firm practices to identify customer preference, resolve customer complaint, establish long-term relationship with customers, provide after-sale services and ultimately to satisfy customer needs (Toma, Mihoreanu, & Ionescu, 2014).

Building a strategic relationship promote coherent long-term and cost-effective relationship with the customer and enhance customer retention and loyalty (Balaji & Kumar, 2017). Close ties with customers decrease customer complain, address customer requirement, enhancing customer support and satisfaction (Morgeson, *et al.*, 2020). Effective customer relation improves product and services quality selection by customers (Ahmad & Saifudin, 2014) and enhanced cost reduction (Buttle, & Maklan, 2019). Preview research assessed the correlations between CRM practices and OP globally (Kegoro, Akoyo, & Otieno, 2020; Nimeh, Abdullah, & Sweis 2018; Omoush, 2020; Kwabena, Bonsu, Faamaa, & Alexander, 2020).

Omoush (2020) for instance, investigated the correlation between SCM strategy and OP of Jordan pharmaceutical firms Using SEM for data analysis of 139 out of 150 questionnaires distributed, the result shown that there is a substantial positive correlation between customer relationship practices and operational performance. A similar study by Gandhi, Shaikh and Sheorey (2017) on the influence of supply chain quality management practices on firm performance of India retail industry. Analysis was conducted using regression. It was revealed that customer relationship management practices have a substantial positive impact on firm performance. It was concluded that CRM is an important performance indicator among all the SCM practices.

A study conducted by Tayyab, Awan and Bukhari (2020) to develop conceptual framework for SCQM in pharmaceuticals distribution sector of Pakistan revealed that customer has substantial positive influence on business output. Nikou, Selamat, Yusoff and Khiabani, (2016) stressed the role of customer relationship in building long term relationship, customer repurchasing

intention, customer loyalty and improvement in customer satisfaction. Prentice, However, the findings further indicate that relationship development has no effect on customer satisfaction. A study by Okoth, *et al.* (2016) found customer relationship to be negatively related to organizational performance.

Moreover, Sundram, Chandran and Bhatti (2015) concluded in their studies that supply chain integration mediate partially between CRM and SC performance. In Ghana, studies by Nkrumah, *et al.* (2020) concluded that customer relationship management has not substantial on impact on OP. However, limited research was conducted on the influence that customer relationship has on operational performance of pharmaceutical companies particularly on wholesalers' firms. Few of the studies adopted robust analytical instrument including Smart PLS-SEM in data due to smaller size of their sample.

It could impact on the accuracy and precision of the result findings of the research. From the research so far, the focused has on the other servicing companies with few of them discussing this issue within pharmaceutical firms (Akomea & Yaboah, 2011; Okoth, *et al.*, 2016; Gandhi, Shaikh & Sheorey, 2017; Omoush, 2020; Tayyab, Awan & Bukhari, 2020). Tayyab, Awan and Bukhari (2020) concentrated on pharmaceutical distribution sector while Okoth, *et al.* (2016) focus on pharmaceutical wholesalers' firms. However, none of these studies were found within the pharmaceutical firms in Ghana. Using Smart PLS-SEM, this study hypothesizes that Customer relationship Management substantially enhance operational performance of pharmaceutical firms in Ghana.

## Conceptual Framework

Conceptual framework shows the relationship among the research variables (Nithya, & Kiruthika, 2020). It is designed to explain the relationship between the independent variable and the dependent variable of the study. The model outline was represented in figure 1.

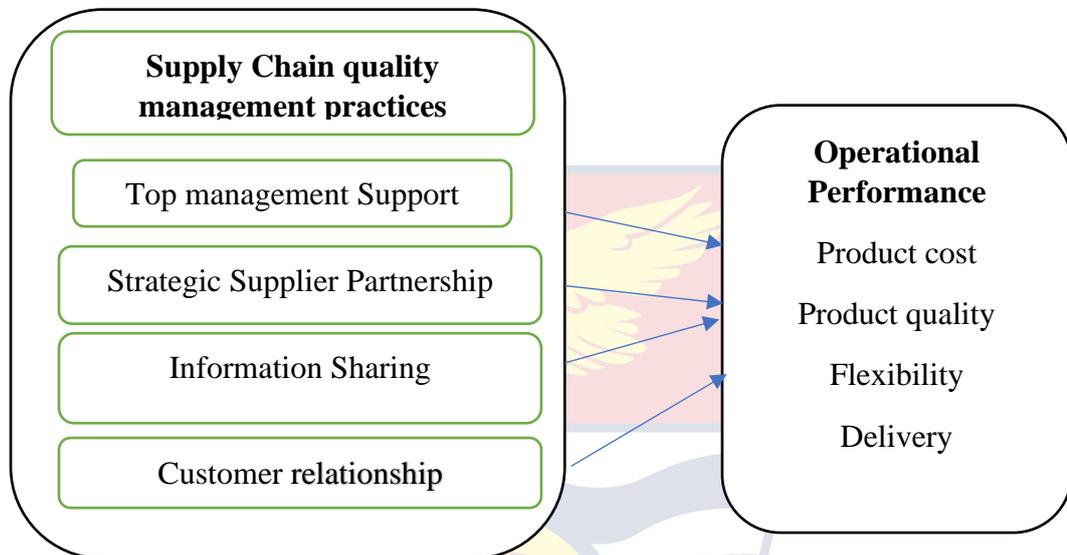


Figure 1: Conceptual framework

Source: Author's Construct, Ahmed (2020)

From Figure 1, the independent variable (supply chain quality management practices) predicts changes in the dependent variable (operational performance) (Hanmer, & Ozan Kalkan, 2013). The value of operational performance depends on any change in the SCQM practices comprises of TMS, SSP, IS, and CR (Sharma & Modgil, 2018; Okoth & Ochieng, 2016; Jaafreh & Al-Abedallat, 2013; Sukati *et al.*, 2012; Chong *et al.*, 2011; Talib & Rahman, 2010). Operational performance (dependent variable) was measured using the four operational dimensions including quality, product cost, delivery and flexibility Propounded by Slack (2005) and widely used in studies by Klassen & Vachon (2003) Seuring and Müller (2008), Ya'kob and Jusoh (2016) and Charles and Omwenga (2018).

From Figure 1, operational performance of pharmaceutical wholesalers' firms is dependent on the various supply chain quality practices they adopt. As such, unit change in any of the SCQM practices is likely to cause a unit change in OP in like manner. The framework was supported by extensive review of previous studies by Sukati, Hamid and Baharun, (2011), khahl, Khah and khan (2019), Tayyab, Mohammed, Braham and Aderaw (2019), and Awan and Bukhari (2020) the model was, therefore, developed to provide a pictorial view of the correlation among the various SCQMP and operational performance of Ghanaian pharmaceutical distribution and wholesale companies.

### **Chapter Summary**

The chapter extensively review literature related to the study to provide ground and justifications for the study's findings. This chapter specifically provided justifications for the choice of network theory. It also included a discussion of definitions, research evaluations and the study's conceptual context. The research methods used in the study are described in the following sections.

## CHAPTER THREE

### RESEARCH METHOD

#### Introduction

The chapter presented the methods adopted in carrying out the study. Research methods enable comparison with previous studies to expand the appreciation of work plan to enable possible replications of this study in future (Fellows & Liu, 2015). The chapter specifically discussed the research philosophy, research design, study area, population, sampling procedure, data collection instrument, data collection procedure and processing and analysis of the study. This chapter also addressed issues such as validity, reliability, and ethical considerations.

#### Research Paradigm

A research philosophy or paradigm was formulated by Guba and Lincoln in 1982. Kaushik and Walsh (2019) defined paradigm as basic beliefs or view about the existence of particular problems and how these problems can be studied. Guba, (1990), summarized it as a set of view that direct action. Research is undergirded by paradigm (Hughes, 2010). Research philosophy emphasises on how knowledge is developed (Naeem, 2019). A research paradigm includes constructivist paradigm and positivism paradigm (Saunders, Lewis & Thornhill, 2009; Creswell, 2014). The constructivist philosophy posit that truths are diverse (Guba & Lincoln, 1989). It concerned with the formulation of subjective meaning and appreciation of one personal orientation based on their historical and social background (Cresswell, 2014).

The social constructivist paradigm favours the qualitative approach as it stresses on the social constructed nature of reality through complex understanding of people experience (Saunders *et al.*, 2009). It is, therefore, based on subjectivism created from one's perception of the world through their interaction with the environment. The positivism paradigm, on the other hand, are of the view that reality is external, hard and real (Wahyuni, 2012) and accurately and quantifiable, observable (ontological assumption) and quantifiable. The paradigm uses hypothesis testing and quantitative tool to obtain fact about a phenomenon (Saunders *et al.*, 2009).

The purpose is to predict, control and generalize the findings through surveys, questionnaires or experimental methods (Kamal, 2019). The philosophy aims to deepening existing theory and the use of the quantitative method is the only acceptable strategy to generate valid knowledge (Saunders *et al.*, 2009; Mahdi, Nassar, & Almsafir, (2019). On the basis of these assumption, the positivism paradigm underpinned the study.

### **Research Approach**

Research approach is a plan of action to carried out research systematically (Mohajan, 2017). The study adopted quantitative approach to respond to research questions requiring numerical data and supported by positivist paradigm ((Mohajan, 2017). The quantitative method allows the use of quantitative procedures to explain relevant findings to aid generalization of outcomes (Creswell & Clark, 2017). As a result, its useful for investigating cause and effect relationships between variables (Creswell, 2014). The quantitative method, on the other hand, has been chastised for its failure to

adequately describe human behaviour and for failing to produce hypotheses (Crotty, 1998; Tsang, 2014).

Despite these weaknesses, the quantitative approach was adopted due to the research philosophy and nature of the research objective. Also, it is suitable for establishing cause and effect relationship among variables comprising supply chain quality management practices such as top management support, strategic supplier partnership, information sharing, and customer relationship management and operational performance.

### **Research Design**

The study adopted explanatory research based on the quantitative approach to the study (grove, Burns & Gray, 2012; Creswell, 2014). The design helps to broadening understanding of a given situation and provide objective conclusions to aid simplification of findings (Creswell, 2014). Research may have more influence over their study processes with explanatory design (Saunders, Lewis and Thornmill 2011). Structred questionnaires are used in the explanatory design to collect data from respondents who are dispersed across a given area. Also, this design use hypothesis and test causes and effect relationship between /among variables (Wahyuni, 2012; Beins & McCarthy, 2017).

The design was, therefore, appropriate for the current study as it sought to establish the effects relationship of top management, strategic supplier partnership, information and customer relationship on operational performance of pharmaceutical distributors and wholesalers in Accra. However, the explanatory design has some weaknesses which could affect a study's findings

(Wildemuth, 2016). According to Wildemuth (2016), design ensures a representative sample by gathering data based on respondents' views and viewpoints which may lead to biased responses. This may have an impact on the results' objectivity (Cresell & Creswell, 2017). However, because of the study's purpose as well as the research philosophy and approach, the explanatory research design was preferred.

### Study Area

The research was conducted in Ghana's Pharmaceutical industry. The three major components of the pharmaceutical value chain include: producers, distributors and end users (Murray Aitken, 2016). The Ghanaian import and distribution sector include multiple actors operating at different levels such as importers, distributors, wholesalers, retailers, sales reps, and licensed chemical stores (Hamill, *et al.*, 2019). Each of class of firm performs specific activities in order to meet the numerous demands of end-users. The structures of pharmaceutical wholesaler supply chain in Ghana comprises of manufacturers/wholesalers, importers/wholesaler, non-importer/wholesalers, wholesalers, one-stop shop wholesaler and wholesalers/retailers (Anum, *et al.*, 2010).

The pharmaceutical industry is a key contributor to economic growth through revenue generation (import and export duties. Tax revenue, GDP) and innovation (Ghana statistical service, 2019). The annual GDP stands at 32% both from pharmaceutical manufacturing and services sector of the industry. This is quite significant to the growth of the Ghana economy. The study specifically focusses on the pharmaceutical distributor and wholesalers within

Greater Accra and Ashanti in Ghana. The study focused on this region because more than 90% class of pharmaceutical distributors and wholesalers are clustered in these two regions (Ghana pharmacy Council, 2019).

The report by the chamber of Ghana chamber of pharmacy and Medpage Ghana revealed that 92.4% of the registered pharmaceutical distributors and wholesalers are located in Greater Accra and Ashanti. These distributors and wholesales firms generally rely heavily on quality product and prompt services to perform their collective activities. Focusing on region with highly concentrated firms had a high tendency of obtaining adequate sample for better generalization of the study's findings.

### **Population**

The study's target population was made up of key personnel such as Chief Executive, General managers, Supply chain manager, Chief executive, Operations manager, Marketing/sells managers and other managers of the pharmaceutical distributors and wholesalers' firms in Greater Accra and Ashanti region of Ghana. These key personnel were selected based on their competencies and direct involvement in the supply chain activities of their respective firms. Thus, respondent's contribution is most appropriate for this research. Also, the respondent data was obtained from both pharmaceutical Council of Ghana (2018) and Medpage Ghana (2020).

**Table 1 Target Population**

Region	Frequency	%
Greater Accra	136	85.5
Ashanti	23	14.5
Total	159	100

Source: Ghana Pharmaceutical Council (2018) and Medpage Ghana (2020).

According to the Ghana Pharmaceutical Council and Medpage Ghana (2020) report, 136 out of 172 registered members of pharmaceutical Distributors and Wholesale firms are within Greater Accra and 23 of these registered members are in Ashanti region of Ghana. In sum, the estimated size of the population obtained from one representative each of the 159 Pharmaceutical venders' firms in the 2 selected regions in Ghana.

### **Sampling Procedure**

The study used the census technique to obtain data from one each member from respective firm. Census was chosen due to its accuracy and reliability of a study's findings (Creswell, 2014). According to Kothari (2005) The census survey provides the fullest and most reliable picture of the entire population at a specified time and its characteristics at a particular point in time to which the census relates. Also, every firm within the study's target population was of prime interest to the study. The adoption of census technique was in line with the current study, as data was collected from one key personnel of Pharmaceutics Distributors and Wholesalers firms located in Greater Accra (136) and Ashanti region (23) in Ghana.

The rationale for selecting key personnel as respondents was due to the fact that their philosophies, values and job positions directly influence their firms' strategic directions in relation to supply chain quality management.

### **Data Collection Instrument**

The data was collected using a structured questionnaire and each person was asked to respond to the same set of questions in a predetermined order (Saunders et al., 2009). Structured questionnaire was appropriate for a

quantitative study because it gives impartial, consistent responses and uniformity for statistical analysis (Saunders *et al.*, 2009). For the purpose of this study, only close ended and direct questions were used. This instrument was purely paper based which was administered to a representative of each of the firms' studied. It also guarantees greater anonymity, privacy and convenience for respondents during completion.

The questionnaire was structured in five (5) sections, A to F. Section A was divided into two parts with part A containing question items on the profile of the pharmaceutical distributors and wholesaler's understudy and the second part on socio-demographic information of respondents. Part B: top management support was operationalised using eight (8) question items adopted from (Al-Ali & Abu-Rumman, 2019; Luo, Gunasekaran, Dubey, Childe & Papadopoulos, 2018; Truong, Sameiro, Fernandes, Sampaio, Duong, Duong & Vilhenac, 2017). Part C: strategic supplier partnership was operationalised using (8) eight items adopted from (Parast, 2020; Mehdikhani & Valmohammadi, 2019; Baihaqi & Sohal, 2013; Sundram, Ibrahim & Govindaraju, 2011; Ryu, So & Koo, 2009; Agus, Makhbul & Hassan, 2008).

Section D: information sharing was operationalised using eight (8) question items adopted from (Parast, 2020; Baihaqi & Sohal, 2013; Sundram, Ibrahim & Govindaraju, 2011; Croom, Fawcett, Osterhaus, Magnan, Brau & McCarter, 2007). Part E: customer relationship was operationalised using eight (8) question items adopted from (Gandhi, Shaikh, & Sheorey, 2017; Valmohammadi, 2017). Section F: operational performance was operationalised using seven (7) question items (Parast, 2020; Truong, Sameiro, Fernandes, Sampaio, Duong, Duong & Vilhenac, 2017; Ryu, So & Koo, 2009)

Finally, Section E contained question items on the demographic characteristics of the respondents' who represented their respective firms. This was aimed at describing the respondents on the basis of gender, age and highest educational qualification in relation to Operations and Supply Chain Management among others. Section B, C, D and E question items were classified on a 5-point Likert-like scale with 1 representing least agreement and 5 representing most agreement. The query items under F were given a five-point Likert-like scale with one being the least agreeable and five being the most agreeable.

### **Validity and Reliability**

Reliability and validity show how best a research instrument measures the parameters it was in to measure (Saunders & Lewis, 2012). According to Berkowitz, Caner and Fang (2012), validity is the degree to which the questionnaire items measure its research objectives. In relation to the study, it was carried out to authenticate and reconstruct the content of the questionnaire. This was done by expert review. An initial survey questionnaire was developed from extensive reviews of related literature. Appropriate corrections were made based on the comments from the peer review. The drafted questionnaire was continuously assessed until the questionnaire was fully developed. Careful attention was given to key areas including research objectives, communication method, potential respondents, cost and time constraint.

The final version of the questionnaire consisted of six sections. The instrument was tested for reliability using the Cronbach alpha test. The internal consistency of this tested using Cronbach's alpha a threshold of 0.7 or greater,

however, is usually appropriate. More specifically, pre-testing was carried out on 20 pharmaceutical companies in Ghana's Central and Western Region. A sample size between 12 and 30 is acceptable (Hunt, *et al.*, 1982). On the other hand, Again, Blumberg, Cooper and Schindler (2008) proposed a sample size ranging between 25 and 100. As such, for the pre-testing exercise, the option of a sample size of 20 participants is suitable.

The pretesting was done to check and address possible errors in question item in the data collection instrument. More specifically, based on the results of the Cronbach alpha test, reliability was checked. Hair, *et al.* (2010) suggested that, having a Cronbach alpha of 0.6 or above is good measure of reliability. The pre-testing of the result shown that, the independent variable consisting of TPS, SSP, IS, and CR was 0.834, 0.883, 0.871 and 0.891 respectively. The dependent (operational performance) variable also had an alpha of 0.911. These suggested that the acceptability requirements ( $> 0.7$ ) were met by all the question items measuring each construct in the questionnaire, thereby measuring what they were supposed to measure.

#### **Data Collection Procedure**

Authority notes were taken from the Head of the Department of Procurement and Supply Chain Management, UCC, prior to the data collection exercise, and sent to all the firms studied. This was done to gain approval for the data collection exercise to be carried out. The questionnaires were then distributed to the respondents after permission was given. A duration of 25 working days (7 September 2020-20 September 2020) was allocated for the data collection exercise to ensure maximum and timely response rates. Some

respondents refused to engage in the exercise because of strict organizational policies and the ethnical code of conduct.

Informant privacy and convenience were adhered to allow the full participation of all the informants. Due to the difficulties associated with locating some respondents (6) within the firms studied, 148 questionnaires were practically administered to them. Out of this, 142 of them were retrieved from the respondents of which 7 were eventually excluded. This is because, they had severe incomplete and non-responses. The study finally had 135 effective and reliable data to proceed with the analysis. Eventually, the study relied on 135 data set with a response rate of 84.5. Table 2 presented the response rate of the relevant data obtained for analysis.

**Table 2: Response Rate**

Categories	Number of Firms	% (%)
Target Population	159	100.0
Accessible population	148	93.1
Total responses	142	89.3
Incomplete responses	7	4.4
Total usable responses	135	84.9

Source: Field survey (2020)

From Table 2, result clearly shown that the study's response rate fell within 50%, 60% and 70% as proposed by Babbie (2005). Babbie (2005) suggested that, 50%, 60% and 70% response rates imply adequate, good and very good responses respectively. It could be deduced that the study obtained total responses of 142 (89.3%) of which 7(4.4%) of them were unusable. This is because, these responses had severe incomplete and non-responses thus

including them in the study's analysis could negatively affect its results. According to Babbie (2005), highly incomplete responses could lead to missing data which could affect a study's outcome if not properly handled.

The decision rule was that incomplete responses could be excluded if study obtains total usable response rate above 50%. More precisely, the study had a response rate of 84.9% thus justifying the need to exclude the incomplete responses.

### **Ethical Considerations**

Ethics are rules of conduct that govern honest decisions about, actions and dealings with others, according to Saunders, Lewis and Thornhill (2007). Greener and Martelli (2018) strongly support the need for researchers to uphold certain ethical standards, and fairness. In order to provide informed consent, voluntary involvement, privacy rights, plagiarism, anonymity and confidentiality problems, Neuman (2014) introduced several main laws, each informant was informed of his involvement in the exercised and permission was sought from management of these firms. Each questionnaire was also accompanied by copies of an Authority Note. Right to privacy was achieved by allowing the respondents to fill the questionnaire through their own convenient time.

All relevant information collected from different sources in the plagiarism was paraphrased and correctly cited (in-text and end-text). To search for potential plagiarism in the report, a plagiarism test was performed. Anonymity was maintained by removing all personal data that the respondent might disclose, such as names and other confidential personal information.

These steps were to make ensure that the participant' identities were not revealed to the general public. Confidentiality was assured by ensuring that all the data was kept confidential by all respondents and that none would be used for purposes other than this study. In summary, all ethical protocol was duly adhered

### **Data Processing and Analysis**

Blumberg *et al.* (2008) stated that data editing, sorting and coding are required to check and verify errors in raw data prior to conducting statistical analysis. Data obtained through survey-based researches require editing, sorting, coding, error checking and mathematical calculations (Sekaran 1984; Zikmund, 2012). Data editing and sorting processes for instance, are relevant for checking and adjusting data for reliability, omissions and consistency before coding was done and subsequently transferring to data storage processes (Blumberg *et al.*, 2008). Data editing were done to check the completeness of each questionnaire coupled with the eligibility of each respondent. The coding process on the other hand, was used to verify and group each response with its associated numeric symbols and scores (Zikmund *et al.*, 2012).

According to Tabachnick and Fidell (2001) and Hair, Ringle and Sarstedt (2011), these processes enhance the accuracy of the data analysed whilst ensuring that the assumptions of data analysis techniques are not violated. Before the analysis, the data obtained from the participants were entered and coded in SPSS software by assigning numbers to each questionnaire item. A descriptive statistic was carried out on each construct indicator item and the

frequencies of the business profile and socio-demographic characteristics of participants were analysed using the SPSS software.

Partial Least Squares in the Structural Equation Modelling techniques (PLS-SEM) were used to test the research hypothesis after ensuring all the validities and reliabilities assumptions including multicollinearity, reliability: indicators and constructs, validity: discriminant and convergent and outer model significance. These underlying assumptions was met and discussed in the next chapter.



## CHAPTER FOUR

### RESULTS AND DISCUSSION

#### Introduction

This section discussed the findings of the study in line with research objectives. It specifically discussed the firm's demographic characteristics of the firm, supply chain quality management practices and examined their effects on the operational performance of the firms' understudy. The partial least squares (PLS) approach to structural equation modelling was used to examine the study's research objectives.

#### Business Characteristics of Pharmaceutical Distributors and Wholesalers

This section presents the characteristics of Pharmaceutical Distributors and Wholesalers within two (2) selected regions (Greater Accra, Ashanti) in Ghana. This section focusses on the profile of the pharmaceutical firms, ownership type and firm age. The result was presented in table From Tables 3

**Table 3: Business Characteristics of Pharmaceutical Distributors and Wholesalers**

Category	Frequency	%
<b>Ownership title</b>	132	97.8
Private ownership		
Wholly state owned	3	2.2
Total	135	100.0
<b>Age of the firm</b>		
less than 10 years	16	11.9
10-20 years	76	56.3
21-29 years	40	29.6
30 years or more	3	2.2
Total	135	100.0

Source: Field survey (2020)

Result from Table 3 revealed that 132 (97.8) of the firms studied are owned by private individuals while 3 (2.2) of them are wholly state-owned. Also, from Table 3, majority 76(56.3%) of the firm existed for the past 10 to 20 years, 40(29.6) of this companies have been in existence for 21 to 20 years, 16(11.9%) of this companies have been in business for less than 10years. While 3(2.2%) of this companies have been in business for 30years or more thereby highlighting their increasing growth in the country.

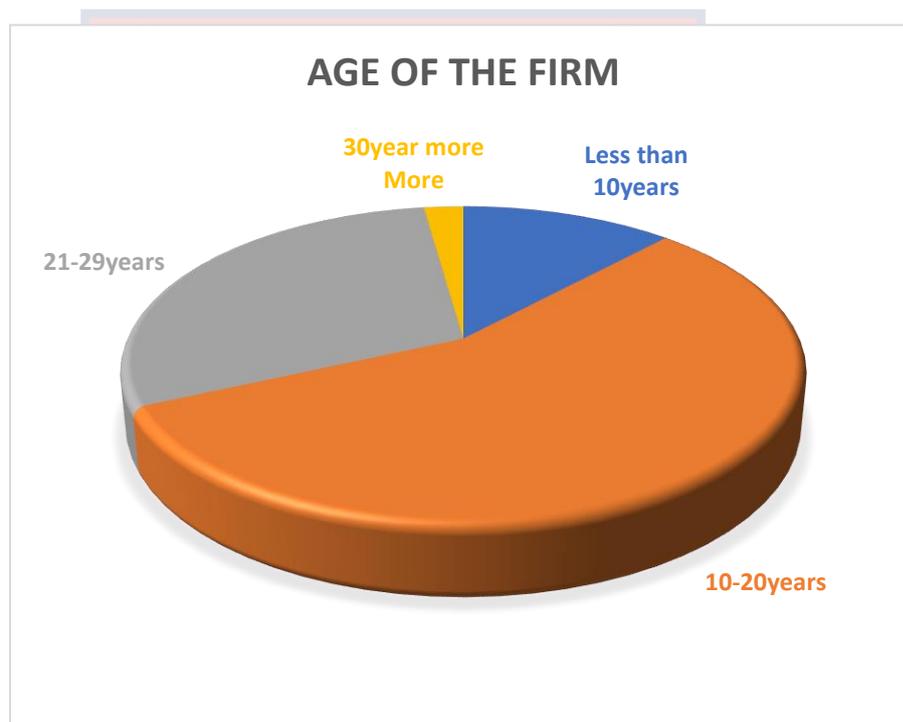


Figure 2: Age of the firm

### Demographic Characteristics of Respondents

The demographic characteristics of the participating companies were discussed in this section. Major issues discussed were in relation to gender, age, educational qualification, job position and years worked in this capacity. The result was shown in Table 4.

**Table 4: Socio-demographic Characteristics of Respondents**

Category	Frequency	Percent
<b>Sex</b>		
Male	104	77.0
Female	31	23.0
Total	135	100
<b>Age Group</b>		
18-35	17	12.6
36-45	63	46.7
46-55	36	26.7
56yers or more	19	14.1
Total	135	100
<b>Educational Qualification</b>		
Below HND	3	2.2
HND/Equivalent	32	23.7
First Degree	68	50.4
Post Graduate Degree	32	23.7
Total	135	100
<b>Job Position</b>		
Chief Executive	20	14.8
General Manager	58	43.0
Supply Chain manager	26	19.3
Operation Manager	7	5.2
Marketing /Sales Manager	19	14.1
Other Manager	5	3.7
Total	135	100
<b>Number of Years Work</b>		
Less Than 5years	37	27.4
5-10	66	48.9
11-14years	25	18.5
15years or more	7	5.2
Total	135	100

Source: Field Survey

From Table 4, majority, 104(77.0%), of the respondents were males, while 31(23.0%) of them were female. In relation to age of respondents, the result shows that majority 63(46.7%), of them were between the age of 36 – 45 years, 36(26.7%) were between the age of 46 – 55 years, 19(14.1%) were 56years or more, while 17(12.6%) were between the age 18-35 years. This implies that, most of the participating personnel are over 35 years and are actively working age. This implies that, the firms' studied currently have highly energetic and active personnel in key managerial positions.

Table 4 also revealed that, majority, 68 (50.5%) have first degree, 23(23.7%) have post graduate degree while 32(23.7%) have HND/Equivalent and 3(2.2%), their qualification is below HND respectively. This implies that, although these managers have undergone through some formal education, they may require more on job training in a bid to keep them abreast with issues related to SCQM.

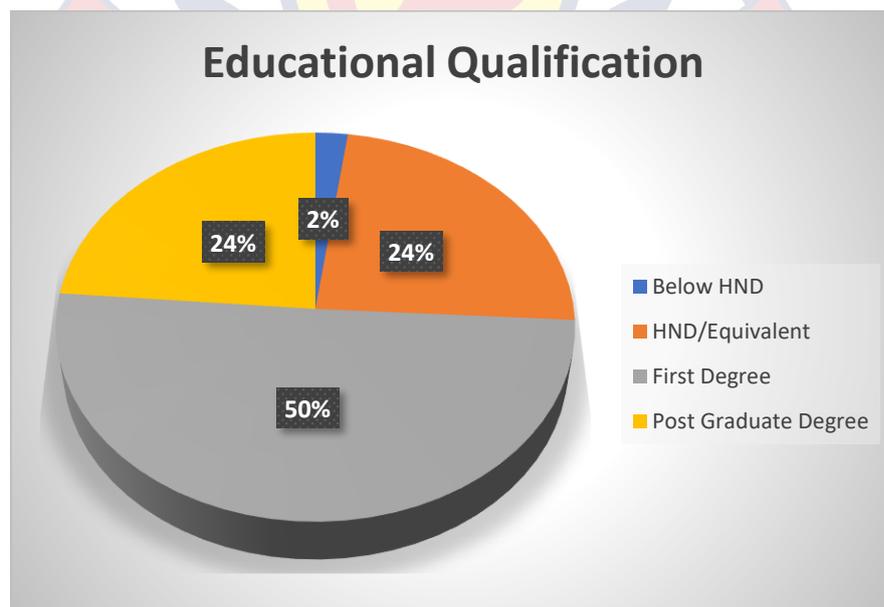


Figure 3: Educational Qualification

Source: Author's Chart, Seidu (2020)

Table 4 presented the respondents’ current job positions. It was shown that, 58(48.0%) of them were general managers, 26(19.3%) of them were supply chain managers, 20(14.8%) of them were chief executive, 19(14.1%) of them were marketing/sales managers, while 5(3.7%) were other managers respectively. This means that, majority of them held vital position thus sourcing their views in relation to QM practices in SC was appropriate. This means that, the manager/officer who participated in the research were directly engage in supply chain quality management and thus arguably provided relevant information which could be relied on for policy making and generalization purposes.

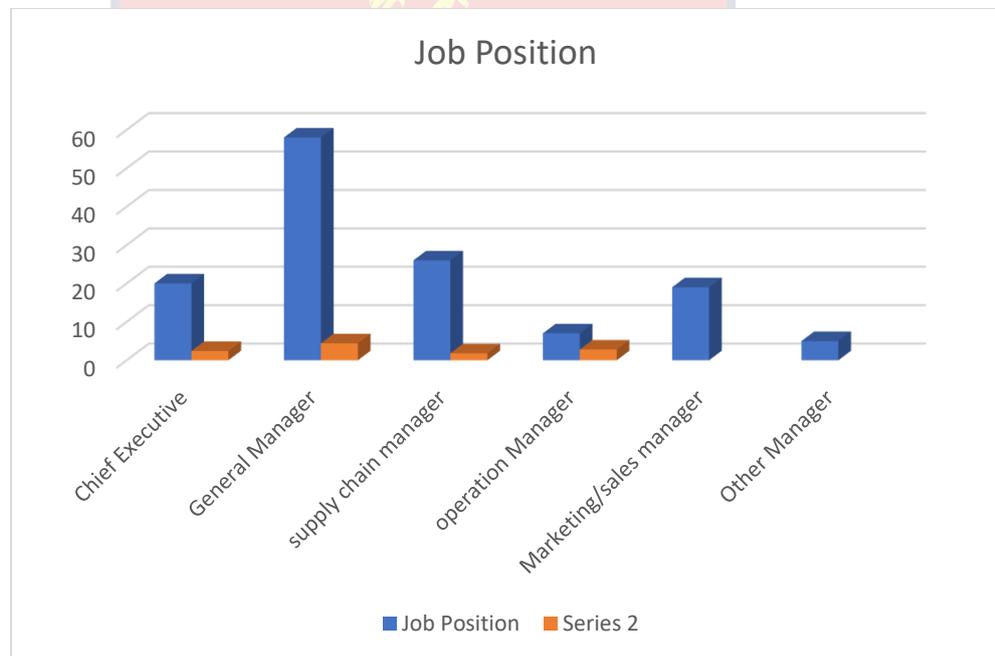


Figure 4: Job Position

Source: Author’s Chart, Seidu

From Table4, the participants were asked to specify the length of years they have served in their present job role. Table 4 shows that, for the most part, 75(26.7 %) of managers / officers worked for 5 to 10 years, 36(26.7 %) of the participant have served in the current position for less than 5 years, 20(14.8 %)

of them worked for 11 to 14 years, and 4(3 %) of them worked in their respective roles for 15 years or more. This suggests that they have an extensive degree of expertise in dealing with quality-related problems in supply chain management. Therefore, the managers / officers of the studied organizations arguably provided sufficient knowledge to perfect their degree of expertise that could be applicable to policy making.

### **Descriptive Statistics of Variables**

The section described the various practices adopted by the firms studied when managing their products and services. These practices specifically included Top Management support (TPS), Strategic Supplier Partnership (SSP), Information Sharing (IS) and Customer Relationship (CR) respectively. The study described the variables by assessing the quality of the indicators measuring each of the practices (constructs) under study. It was conducted to make sure the variables are appropriate of their specific supply chain quality management within the context of the Firms' studied. The section, therefore reported the mean score and standard deviation of each construct's indicators.

### **Description of Top Management support practices**

Top Management Support as a supply chain quality management practices focus on management ability to demonstrate quality improvement strategy resulting in their business operations. The strategy has been widely been described based on long-term focused on quality improvement, quality is number one priority, communicate importance of quality to workforce, assesses the impact of quality performance, review supply chain quality issues,

communicate with suppliers and customers, innovative and continuous improvement policies, supports quality teams with the necessary resources. This section presents the means by which each variable truly measures the top management support strategy in the area understudy. The result of the statistical means and standard deviation was discussed in Table 5

**Table: 5: Description of Top Management support practices**

Items/indicator	Mean	Std. Deviation
Long-term designs are focused on quality improvement	3.0000	1.25781
quality is number one priority	3.7111	1.18364
Communicate importance of quality to workforce	3.7704	.98451
Assesses the impact of quality performance	3.5556	.63088
Review supply chain quality issues	3.5852	1.13549
Communicate with suppliers and customers	3.4148	1.05367
Innovative and continuous improvement policies	3.0963	1.07116
Supports quality teams with the necessary resources	3.6370	1.11708
Overall average score	3.4712	1.05428

Note M =Mean, SD=Standard Deviation

Source: Field survey (2020)

From Table 5, all the firm 135(100) agreed that they strictly communicate importance of quality to employees. This is because the result had a high mean and the standard deviation (M=3.7704 SD= 0.98451) which is

between 3 and 5 indicating the information point is congregated closely round the mean value showing the value is large because its distribution is spread about it. Quality is number one priority had mean value of ( $M = 3.711$ ,  $SD = 1.18364$ ). Review supply chain quality issues had mean value of ( $M=3.5852$ ,  $SD =1.18364$ ), supports quality teams with the necessary resources ( $Mean=3.6370$ ,  $SD=1.11708$ ) access the impact of quality performance had mean of ( $M =3.5556$   $SD = 0.63088$ ), communicate with suppliers and customers ( $M=3.4148$   $SD=1.05367$  ), innovative and continuous improvement policies ( $M=3.0963$ ,  $SD=1.07116$ ) and long-term designs are focused on quality improvement ( $M=3.0000$ ,  $SD=1.25781$ ).

Finally, the total mean score of 3.4712 with standard deviation score of 1.05428 showing that all the enablers truly measure and thus describe the Top Management Support practices within the firms studied. This mean that all the firm's 135(100%), describe the top management support by ensuring that quality of product and services comes first in any strategic decision making.

### **Description of Strategic of Strategic Supplier Partnership**

Th dynamics in supply chain is increasingly making it difficult for a firm to sufficiently accomplish set objectives. This require firms to integrate key supplier in its management operations by creating strong bonds through strategic supplier partnership strategy. This has been found to positively affect the performance level of both actors. Pharmaceutical firms have been found to describe this strategy based on, quality is the first criterion in vender selection, help venders to add value to their product, Key venders are involved in day to day enhancement agendas, key venders take part in designing and strategic goal,

Key vendors are participate in problems solving, Key suppliers are actively involved in forecasting and designing, Strategic designs are developed with supply chain partners, Partners inform us of new developments in a timely manner.

Using the statistical mean scores and standard deviations, the research revealed means by which enabler truly measures the SSP strategic in the company. the result was presented in Table 6

**Table: 6: Description of Strategic of Strategic Supplier Partnership**

Item/indicator	Mean	Std. Deviation
Quality is the number one criterion in selecting suppliers	3.1852	1.24100
Help suppliers to improve their product quality	3.6148	1.34932
Suppliers are involved in continuous improvement	3.1407	.94760
Suppliers are involved designing and goal-setting	3.2519	1.32552
Suppliers are involved in problems solving	3.2889	1.32635
Suppliers are actively involved in forecasting and designing	2.7926	1.27605
Strategic designs are developed with supply chain partners	3.2667	1.29983
Partners inform us of new developments in a timely manner	3.1481	1.33561
Overall average score	3.2111	1.26266

Note M =Mean, SD=Standard Deviation

Source: Field survey (2020)

From Table 6, all the firm 135(100%), agreed that they help suppliers to improve their product quality. This is because the result had a high mean and the standard deviation (M=3.6148, SD=1.34932), which is between 3 and 5

indicating the information point is congregated closely round the mean value showing the value is large because its distribution is spread about it. Key suppliers are involved in problems solving (M=3.2889 SD= 1.32635), Strategic designs are developed with supply chain partners (M=3.2667 SD=1.29983), key suppliers are involved designing and goal-setting activities (M=3.2519 SD=1.32552), quality is the first criterion in vender selection (M=3.1852 SD=1.24100), Key suppliers are involved in continuous improvement programs (M=3.1407 SD=.94760)and Partners inform us of new developments in a timely manner (M=3.1481 SD=1.33561).

However, Key suppliers are actively involved in forecasting and designing had a low mean score value (M=2.7926). then again, the standard deviation score of (SD= 1.27605) means that the standard mean value is larger since its distribution is dispersed evenly. Finally, the total standard mean score of 3.2111 with standard deviation score of 1.26266 showing that all the enablers truly measure and thus describe the SSP practices within the firms studied. This mean that all the firm's 135(100%), describe the practices using the following criteria: quality is the first criterion in vender selection, help venders to add value to their product, Key venders are involved in day to day enhancement agendas, key venders take part in designing and strategic goal, key suppliers are involved in problems solving, key suppliers are actively involved in forecasting and designing, strategic designs are developed with supply chain partners and partners inform us of new developments in a timely manner.

Therefore, reliance on these criteria/indicators in describing the strategic supplier partnership practices within the firms studied was appropriate

### Description of Information Sharing

Information sharing is a practice that focus on ensuring that delivery schedules and requirement are met by supply partners. It is found to reduce uncertainty in demand and supply and invariably minimise unnecessary cost to both suppliers and customers. The strategy emphasises on Constant information exchange with supplier partners, suppliers notify us the event of changes in schedules, Information exchange is reliable, timely, accurate, complete, adequate information exchange on delivery schedules. This section presents the means by which each variable truly enumerates the IS strategy in the area understudy. The result of the statistical means and standard deviation was discussed in

**Table 7: Description of Information Sharing**

Item/indicator	Mean	Std. Deviation
Constant information exchange with partners	3.3704	1.29719
suppliers notify us the event of changes in schedules	3.3481	1.14812
Reliable	3.6370	1.05525
Adequate	3.3556	1.18741
Timely	3.3481	1.14812
Accurate	3.7185	.64243
Complete	3.3778	1.20859
Adequate Information exchange to venders on delivery schedules	3.4741	1.09155
Overall average score	3.4537	1.09733

Note M =Mean, SD=Standard Deviation

Source: Field survey (2020)

From Table 7, all the firm, 135(100), agreed that the Information exchange is accurate. This is because the result had a high mean and the standard deviation ( $M=3.7185$   $SD=.64243$ ) which is between 3 and 5 indicating that the information point is congregated closely round the mean value showing the value is large because its distribution is spread about it, Information exchange is reliable ( $M=3.6370$   $SD=1.05525$ ), Information to suppliers on delivery schedules ( $M=3.4741$   $SD=1.09155$ ), Information exchange is complete ( $M=3.3778$   $SD=1.20859$ ), Constant information exchange with partners ( $M=3.3704$ ,  $SD=1.29719$ ), Information exchange is adequate ( $M=3.3556$ ,  $SD=1.18741$ ), Information exchange is timely ( $M=3.3481$   $SD=1.14812$ ), suppliers notify us in the event of changes in schedules ( $M=3.3481$   $SD=1.14812$ ).

Finally, the average mean score of 3.4537 with standard deviation score of 1.09733 showing that all the enablers truly measure and thus describe the information sharing practices within the firms studied. This mean that all the firm's 135(100%), describe the practices using the following criteria: constant information exchange with partners, suppliers notify us the event of changes in schedules, Information exchange is reliable, timely, accurate, complete, adequate information exchange on delivery schedules. Thus, relying on these indicators to describe the IS practices within the firms studied was appropriate.

### **Description of Customer Relationship**

Customer relationship practices is a widely used to identify customer preference, resolve customer complain and to enhance customer retention and loyalty. It is generally been described based on frequent evaluation of customer

complaints, Customer requirement is based on feedback, Responsiveness to customer needs, Customer focus is integrated in business designing, Customer satisfaction is priority, Customers are involved in periodic review, Customer requirements is use to measuring quality, frequently engagement with customers. This section presents the means by which each variable truly enumerates the IS strategy in the area understudy. The result of the statistical means and standard deviation was discussed in Table 8:

**Description of Customer Relationship**

Item/indicator	Mean	Std. Deviation
Frequent evaluation of customer complaints	3.3704	1.16376
Customer requirement is based on feedback	3.7111	.92128
Responsive for customer needs	3.5556	1.15038
Customer focus is integrated in business designing	3.3852	1.16533
Customer satisfaction is priority	3.5185	1.21466
Customers are involved in periodic review	3.0370	1.03957
Customer requirements is use to measuring quality	3.3926	1.34440
frequently engagement with customers	2.9778	1.04715
Overall average score	3.3685	1.13082

Note M =Mean, SD=Standard Deviation

Source: Field survey (2020)

From Table 8, all the firm 135(100%) stress that the customer requirement is based on feedback. This is because the result had a high mean and the standard deviation (M=3.7111, SD=.92128) which is between 3 and 5

indicating that the information point is congregated closely round the mean value showing the value is large because its distribution is spread about it, responsive for customer needs (M=3.5556 SD=1.15038), customer satisfaction is priority (M=3.5185 SD=1.21466), Customer requirements is use to measuring quality (M=3.3926, SD=1.34440), customer focus is integrated in business designing (M=3.3852 SD=1.16533), frequent evaluation of customer complaints (M=3.3704, SD=1.16376), customers are involved in periodic review (M=3.0370, SD=1.03957), frequently engagement with customers (M=2.9778 SD=1.04715).

Finally, the total statistical mean score of 3.3685 with standard deviation score of 1.13080 showing that all the enablers truly measure and thus describe the customer relationship practices within the firms studied. This mean that all the firm's 135(100%), describe the practices using the following criteria: frequent evaluation of customer complaints, customer requirement is based on feedback, responsive for customer needs, customer focus is integrated in business designing. customer satisfaction is priority, customers are involved in periodic review, customer requirements is use to measuring quality, frequently engagement with customers. Thus, relying on these indicators to describe the customer relationship practices within the firms studied was appropriate.

### **Measurement Model Assessment**

The measurement model quality includes assessment of the reliability and validity of the scale and data. The assessment of reflective outer model involve investigative reliabilities of the each items [indicator reliability], consistency of each hidden variables, internal reliability [Cronbach alpha,

composite reliability, rho\_A], construct and convergent validity [average variance extracted] and discriminant validity [HTMT ratio] (Ringle, Wende & Becker, 2015; Garson, 2016). Table 9 and Figure 2 illustrate the evaluation criteria for the model.

**Table 9: Assessment of Indicators and Construct Reliability and Validity**

Items	CA	rho_A	CR	CV	Inner VIF values
CR	0.822	0.826	0.882	0.652	1.740
IS	0.822	0.833	0.882	0.653	1.640
OP	0.844	0.854	0.895	0.682	
SSP	0.809	0.826	0.874	0.636	1.652
TPS	0.671	0.709	0.856	0.749	1.204

*IR (CA and rho\_A)- Indicator reliability; AVE – Convergent validity*

*Source: field survey*

### Internal Consistency Reliability

Table 9: provided the study’s indicator and build consistency. The part of an Indicator’s adjustment that can be defined by its underlying latent variable is called indicator reliability (Hair *et al.*, 2012). There are three criteria for the assessment of reliability for a measurement model (Ahmad, Zulkurnain & Khairushalimi 2016). These are internal reliability, build reliability and the extraction of average variance. For IR, the rule of thumb is that the threshold should be > 0.7 for any given predictor (Chin, 2010; Hair *et al.*, 2011; Latan & Ghozali, 2013; Wong, 2013). While Ahmed *et al.* (2016) shows that internal reliability is achieved, the Alpha value of the Cronbach is 0.6 or more. According to Vinzi, Trinchera and Amato (2010) the reliability of the indicator

(IR) is an important method for the uni-dimensionality assessment of a collection of measurement variables.

It is achieved by the outcomes of Cronbach alpha ( $\alpha$ ) and rho\_A ( $\rho$ ) results. From Table 9, The effect of the indicator reliability of each alpha ( $\alpha$ ) showed the following: CR (0.822), IS (0.822), OP (0.844), SSP (0.809) and TPS (0.671), respectively. The results indicate that all construct except TPS (0.671) have met the thresholds of the latent variables ( $> 0.70$ ), suggesting that almost all of them were accurate for the model. Henseler, Hubona and Ray (2016) posit that, the use of rho A for testing indicator reliability has also been suggested by other studies. The reason being that rho-A is a much more reliable test of the reliability of the predictor. Chin (2010) proposed that the rho A ( $\alpha$ ) rating should be  $> 0.70$ .

The outcome is between 0.709 and 0.854, suggesting satisfactory and acceptable outcomes. Specifically, TPS (range=0.709). SSP (system=0.826), IS (system=0.833), CR (system=0.826) and OP (= 0.844), respectively. Table 9: the outcome of the study's build reliability was also discussed. Ringle *et al.* (2012) demonstrated that construct consistency (CR) measures the degree to which, when placed together, a particular variable is properly assessed by its indicators. This implies that, to have a good reciprocal correlation, CR requires all the indicators assigned to a given construct. Construct. Bagozzi and Yi (1988) stress that, using the composite reliability, the construct reliability result was obtained, since it is ideal for evaluating the extent to which a given indicators the thumb rule is that 0.70 or higher should be the CR value (Bagozzi & Yi, 1988; Ringle *et al.*, 2012).

It was revealed that the minimum equal to 0.900, all CR values were > 0.70. This implies that with their respective constructs, all the assigned metrics had close reciprocal relationships.

### **Convergent Validity**

Table 9 the consequence of the study's convergent validity (CV) was further presented. Convergent validity (CV) is frequently measured using Average Variance Extracted (AVE) in PLS-SEM models (Hair *et al.*, 2011, 2012). Hair *et al.* (2011) further suggests that, due to measurement error, the AVE is used describes how the indicator is captured by the construct. By analysing the Average Variance Extracted of all variables in the model, the analysis observes the CV. For a construct to show convergent validity, an AVE with a minimum threshold of 0.5 was suggested by Fornell and Larcker (1981) and Hair *et al.* (2011). The findings showed that the AVEs ranged from 0.652 to 0.749 for all the latent variables. 0.5; the result show that the measurement scale's validity was convergent.

### **Multicollinearity Among Exogenous Variables**

Using both the inner VIF (Table 9) and outer VIF (Table 10), the analysis further tested multicollinearity. Hair *et al.* (2014) noted that to ensure that the route's coefficients are free of bias while minimizing substantial levels of collinearity among the predictor constructs, multicollinearity diagnostics are checked. Multicollinearity among the independent variables was indicated by VIF values > 10, thus affecting the creation of a good PLS-SEM model (Pallant & Manuel, 2007). The inner VIF values for the exogenous variables from the

table were TPS (1.204), SSP (1.652), IS (1.640), and CR (1.740), respectively, as follows. This demonstrated the lack of multicollinearity between the variables that were exogenous.

**Table 10: Multicollinearity Among the Construct**

Indicators	VIF
CR3	2.080
CR5	1.882
CR6	2.218
CR8	2.431
IS2	2.574
IS4	1.483
IS6	1.878
IS7	2.026
OP1	1.819
OP3	2.294
OP4	2.318
OP5	1.795
SSP3	1.455
SSP5	1.674
SSP6	2.103
SSP8	1.739
TPS2	1.343
TPS4	1.343

Table 10 suggested that the outer VIF values varied between 1.343 and 2.574 for the respective indicators. There are strong signs that all the VIF values are less than the Hair *et al.* (2014) suggested cut point of 5. Furthermore, this result indicates the lack of multicollinearity among the measures measuring the different exogenous variables. Consequently, the outcome of the analysis was confirmed by Ringle, Weade and Becker (2015).

### Discriminant Validity

To evaluate the consistency of the model, the discriminant validity (DV) is tested. (Hair *et al.* 2011). Using the Fornell *et al.* (1981) criterion and the Heterotrait-Monotrait (HTMT) ratio, the discriminant validity was examined. For example, Fornell *et al.* (1981) explained that DV ensures that the latent variables of the sample are truly different from each other. It can be used to check the structural model for problem with collinearity (Hair *et al.*, 2014). According to Hair, Sarstedt, Ringle and Gudergan (2017), there are usually no substantial levels of collinearity for discriminatingly true constructs. The factorial loadings should be greater in their individual constructs than between the latent variables according to the Fornell *et al.* (1981) criterion (Fornell & Larcker, 1981; Chin, 2010). Table 11 shows the final result.

**Table 11: Fornell-larker Criterion for Checking Discriminant Validity**

	CR	IS	OP	SSP	TPS
CR	<b>0.807</b>				
IS	0.500	<b>0.808</b>			
OP	0.717	0.627	<b>0.826</b>		
SSP	0.528	0.556	0.712	<b>0.798</b>	
TPS	0.397	0.115	0.351	0.217	<b>0.866</b>

Note Diagonal element in bold = square root of AVE; Off – diagonal elements = correlation between constructs

Source: Fornell and Lacker 1981

The consequence of the discriminant validity in Table 8 revealed that all the other correlation values among the latent variables the factorial loadings are lower than in their respective constructs. The consequence is that each latent variable is very distinct from the other. This means that the dimensions of the

constructs have individuality. The rule of thumb proposed by Fornell *et al.* (1981) was, therefore, fulfilled. Finally, using the Heterotrait-Monotrait (HTMT) ratio, discriminant validity was assessed. This is a relatively new measure in variance-based structural equation modelling to test discriminant validity (Sarstedt, *et al.*, 2017). Ridgon (2014) indicated that the HTMT ratio is gaining more recognition, and now a generally recognised measure for assessing latent variables' relationships.

HTMT ratio has been proposed for determining discriminant validity instead the previously used Fornell-Larcker criterion and also cross-loadings. For reason that, the HTMT ratio demonstrates greater results because of its ability to detect a lack of discriminant validity in typical research work. Table, therefore, provided the product of the HTMT ratio.

**Table 12: Heterotrait-Monotrait (HTMT) Ratio**

	CR	IS	OP	SSP	TPS
CR					
IS	0.604				
OP	0.852	0.739			
SSP	0.647	0.651	0.844		
TPS	0.561	0.187	0.453	0.272	

**Source:** field survey (2019)

According to Wetzels, Odekerken-Schroder and Van Opeen (2009), in order to achieve discriminant validity, the values of the HTMT ratio should be < 0.90 (Hair *et al.*, 2016). From the table 12, all the HMTM value are below the acceptable range of < 0.9. This shows that the construct was different from each other.

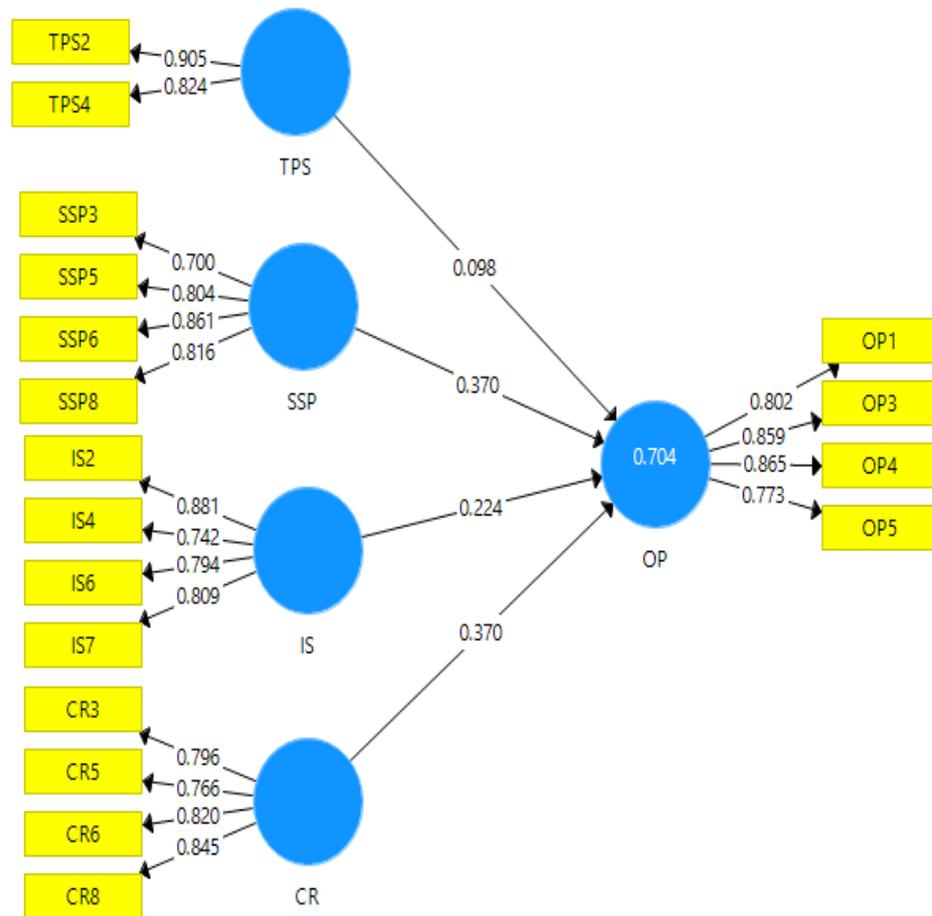


Figure 5: Final model extracted

Source: Authors own construct (2020)

From Figure, exogenous variables had four indicators each as shown in figure 5, and they were: Top Management Support (TPS1, TPS2, TPS4, TPS5, TPS6, TPS7 and TPS8), Strategic Supplier Chain Partnership (SSP1, SSP2, SSP3, SSP4, SSP5, SSP6, SSP7 and SSP8), Information Sharing (IS1, IS2, IS3, IS4, IS5, IS6, IS7 and IS8) and Customer Relationship (CR1, CR2, CR3, CR4, CR5, CR6, CR7 and CR8). Finally, the endogenous variable was represented by operational performance (OP) with OP1, OP2, OP3, OP4, OP5, OP6 and OP7 are seven measures. A close examination of the item loadings in figure

revealed indicator reliability as measured by Henseler et al (2009) per the minimum cut-off of 0.7.

Some of and construct's respectively item loading 0.7 is therefore omitted from the model because it does not accurately quantify the construct. More precisely, the TPS, for instance, had TPS1, TPS3, TPS5, TPS5 and TPS8 removed; SSP practice had SSP1, SSP2, SPP4 and SSP7 removed; IS had IS1, IS3, IS5 and IS8 removed while CR had CR1, CR2, CR4 and CR7 removed. Finally, OP had OP1, OP2 OP6 OP7 and OP8 removed from the model. It is note that, the study's research hypotheses were tested based on the final model in Figure.

### **Structural Model**

#### **Significance of Path Coefficients**

After the measurement model has been reviewed to make sure that it meets the PLS-SEM standard. The thesis proceeded by testing the hypotheses. The hypothesis is primarily about investigating the impact of Top Management Support (TPS), SSP (SSP) Knowledge Sharing (IS) and Customer Relationship (CR) on the operating performance (OP) of pharmaceutical distributors and wholesalers in a primarily selected area of Greater Accra and Ashanti in Ghana. As recommended by Hair et al. (2014), the path coefficient measure the direction, intensity and degree of significance with t-statistics obtained from 500 bootstraps. Table 13 describes the results of the hypotheses studied using PLS-SEM.

**Table 13: Result of Structural Equation Model and Hypothesis Testing**

Structural path	( $\beta$ )	t-stats	P Values	Decision rule
<b>CR -&gt; OP</b>	0.370	4.278	0.000	p<0.05 H <sub>1</sub> (supported)
<b>IS -&gt; OP</b>	0.224	2.873	0.004	p<0.05 H <sub>2</sub> (supported)
<b>SSP -&gt; OP</b>	0.370	4.466	0.000	p<0.05 H <sub>3</sub> (supported)
<b>TPS -&gt; OP</b>	0.098	2.320	0.021	p<0.05 H <sub>4</sub> (supported)

**Note: = P <0.05**

Source: Field survey (2020)

The research hypotheses of the analysis were evaluated on the basis of the t-stats values as recommended by Hair et al. (2014). They proposed that p-values < 0.05 and vice versa correspond to t-stat values above 1.96. Thus, the decision rule is that, when the t-stat is < 1.96, the null hypothesis (H<sub>0</sub>) is rejected (supported). The result showed that all t-statistics were above 1.96, so the H<sub>0</sub> null hypothesis was rejected and all of them were important.

**Effect of Top management Support on Operational Performance**

Study aim one based on the effects on organizational efficiency of top management support. The study hypothesized (H<sub>0</sub>) that: The operational efficiency of pharmaceutical distributors and wholesalers within the selected region in Ghana is not significantly affected by top management support. The outcome of Table 13 showed that the TP support approach had a reasonably positive impact on organizational efficiency ( $\beta= 0.098$ ;  $t = 2.320$ ;  $p < 0.05$ ). The reason being that the t-stat was 2.320 for the model, greater than 1.96. Hence, the outcome was consistent with hypothesis, thus dismissing the null

hypothesis. Therefore, the hypothesis that "TPS has positive effect on operational performance.

From  $\beta$ , between the exogenous and endogenous variables, the analysis found a positive. This means that a 9.8 % rise in unit analysis would result in a unit (i.e., 9.8 %) improvement in organizational performance by the same amount. This means that the TPS approach plays a substantial role in ensuring successful quality control of the SC; it often leads to an improvement in the operating efficiency of pharmaceutical distributors and wholesalers. The study's result has been supported by the network theory. The theory posits that Pharmaceutical Distributors and Wholesalers could be exposed to various challenges including supply chain quality constrains which could only be addressed when appropriate strategies are implemented (Kanji & Wong 1999; Kuei, Madu & Lin 2011).

Firms could resolve their supply chain quality challenges by using relevant practices including the top management support strategies. This study found top management support to manage supply chain quality and then improves operational performance in terms of product quality, operational speed, flexibility and product costs. In line with the network theory, top management support could be employed by the firms studied to constantly address their SC quality issues until they are totally addressed. Also, the finding is in line with earlier studies by (Moktar & Yusoff, 2012; Kim, Kumar and Kumar, 2012; Soares, Soltani, & Liao, 2017; Teoman & Ulengin, 2017) who found that TP support initiatives such as product flexibility, reduction in cost, lead time etc. can significantly improve operational performance of firms in developed and developing economies.

Studies by (Azar, Kahnali, & Taghavi, 2010; Zehira, Ertosun, Zehir, & Müceldilli 2012; Teoman, *et al.*, 2017; Psomas, Kafetzopoulos, & Gotzamani, 2018) confirmed that quality initiatives by top managers result in significant improvement in overall operational performance and market performance. Sharif and Irani (2012), revealed that top management support focuses on improving organizational performance through the use of appropriate leadership strategies, such as product and services improvement effort, quality designing, and employee training can improve operational and business performance. Again, studies by Samuel and Loaharjo (2017) found that strategic leadership impact positively on purchasing strategies, supply chain collaboration and supplier's relationship.

Also, studies by Bouranta and Psomas (2016), to investigate the critical enablers of total quality management and their effect on the operation performance of firms in Greece, found out that top management support has a significant positive relationship on service quality performance and financial performance. Jaafreh and Al-abedallat (2012) posit that quality assessment, strategic quality designing, provision of resources to support quality initiatives by top management result in improvement in business performance. Again, it could be argued that the top management support enhances the operational of services sector across the globe including Pharmaceutical Distributors and Wholesalers in Ghana.

### **Effect of Strategic Supplier Partnership on the Operational Performance**

Strategic supplier partnership is found to have a substantial effect on the operational performance of Pharmaceutical distributors and Wholesalers, the

study hypothesized that, 'strategic supplier partnership has a significant positive correlation with operational performance. From Table 13, the path coefficient between strategic supplier partnership and operational ( $\beta= 0.370$ ;  $t = 4.466$ ;  $p < 0.05$ ). The  $H_0$  was, therefore, reject indicating that an item rises in SSP by 37% would cause an item rise in operational performance by 37% This implies that, managing supply chain quality by building strategic partnerships with suppliers through strategic sourcing, supplier selection, supplier quality practices, joint problem solving, collaborate actively in forecasting help the firm to enhance their operational performances.

It could be established that, strategically partnering with supplier offers the company with a manifold of opportunity, including improvement in response, product value, high level of adaptability, reduce inventory control, reduction in cost, and enhance firm's performance of Pharmaceutical Distributors and Wholesalers services firm. The study' result has been supported by network theory. The theory posits that firm performance is independent of the resources possess, but how sufficient they cooperate in the supply chain (Chang *et al.*, 2012). Studied by Agus, Makhbul and Hassan (2008), Kiruri and Karanja (2015), Khan, Liang and Shahzad, (2015), Tangus, Oyugi and Rambo (2015) found significant positive correlation between strategies supplier partnership and firm performance.

Establishing strong mutual relationships with the supply partners, for example can help focal firms to access valuable resources, build mutual trust and commitment, share responsibilities and risk in order to improve upon the existing performance level. Focal firms including pharmaceutical Distributors and Wholesalers in Ghana can establish strong mutual relationships to

effectively manage and improve their competitiveness in terms of quality of medicinal product, processes and services. The study was in support of existing studies by Agus, Makhbul and Hassan (2008), Vevek *et al.*'s (2011), Khan, Liang and Shahzad (2015) and Khan and Siddiqui (2018) revealing a positive correlation between SSP and operational output.

Sangode and Pohokar (2018) and Khan & Siddiqui, (2018) confirm the study by stressing that Strategic ties with suppliers enhance information exchange, reduce uncertainty and cost, improve firm performance and ultimately increase market share and customer satisfaction. Khan, Liang & Shahzad (2015) further revealed that Strategically partnering with supplier offers the company with a manifold of opportunity, including improvement in response, product value, high level of adaptability, control of inventory, reduction in cost, and enhance firm's profit. Nurdjannah and Hamid (2018), Yeung, (2008) and Luthra, *et al.*'s (2010) asserted that strategically collaborating with suppliers allow firm to have less defective product, provided on time with right quality, reduce downtime incident, and decrease in the rate of damage product.

This is in line with the result of Amedofu, *et al.* (2019), who revealing that, building and maintaining strategic relationship with suppliers allows the partners to collectively work toward providing waste free product, reduction in stockouts, reducing costs, and improve responsiveness. In another study Zu and Cui (2013) found strong correlation between strategic supplier partnership and cost or time related efficiency. Ou, *et al.*, (2010) further argue that supplier partnerships can positively diminished length of lead time, result in superior product quality and agile customer service. It is emphasised by Al-Abdallah,

Abdallah and Hamdan (2014) that partnering with supplier are the key determinant for developing strategic network that led to achieving competitive advantage.

It can, therefore be argued that strategic supplier partnership is recognized as key strategy in managing supply chain quality in industries (Nkrumah *et al.*, 2020). As such, the implementation of the strategic supplier partnership strategy by the Pharmaceutical Distributor and Wholesalers would significant positive change in their operational performance in Ghana.

### **Effect of Information Sharing on the Operational Performance**

The third objective three of the research concentrated on the impact that could drive from sharing of important information. The null hypothesis ( $H_0$ ) was that the operational performance of pharmaceutical distributors and wholesale firms within the selected regions of Ghana was not significantly affected by knowledge sharing. The outcome of Table 16 showed that the exchange of information had a major positive impact on organizational efficiency (OP) ( $\beta = 0.224$ ,  $t = 4.466$   $p < 0.05$ ). This is because 2.873 was  $> 1.96$  in the t-stats. As such, the findings of the study were in line with the alternative hypothesis, thereby dismissing the null hypothesis. Therefore, the theory that the exchange of information has a substantial positive effect on organizational success has been supported.

The outcome of the analysis is an indicator that a 22.4 % unit increase in the IS would improve operational output of the entity surveyed by the same margin (i.e., 22.4 %). This means that the SSP key to efficient quality control of the SC; arguably contributing to enhancing the operating efficiency of

pharmaceutical distributors and wholesale companies. The study was supported by network theory, which indicates that partners may create strong relationships through the efficient sharing of quality data across the supply chain (Scott, 2011). This implies that, by following acceptable practices like the IS strategy, the studies of the companies will overcome their supply chain quality constraints. This is because the study found that information sharing practices manage the efficiency of the supply chain effectively and consequently enhance operational performance in terms of quality of product, speed of delivery, variability and cost.

Also, Pharmaceutical Distributors and Wholesalers would struggle to operate effectively on the basis of meeting customer requirement if they fail to share quality and timely information. From the network theory, IS practices could be applied by the firms to help them continuously improve their SC quality challenges until they are totally addressed. The study's finding was in line with a study by Hsu, Kannan, Tan and Leong, (2008), Rashed, Azeem, and Halim, (2010), Sukati, Tat, and Said (2011), Baihaqi and Sohal (2013) and Marinagi, Trivellas, and Reklitis (2014) revealing that significant positive relationship between IS and operational performance. Similarly, Şahin and Topal (2018) and Peng (2014) revealed that sharing information by both internal and external partners can lead to cost reduction, product and services quality control, improve the efficiency of pharmaceutical supply chain performance.

Also, Asamoah *et al.*, (2016) found significant positive effect of information sharing on SC integration and operational performance. Sharing of quality information by supply chain partners can sustain buyer-supplier relationship in the long run (Akrouit, Diallo, Akrouit & chandon, 2016; Teller,

Kotzab, Grant, Holweg, 2016; kumar & Rahman, 2015), also, help meet delivery requirement and schedule needs (Ye & Wang, 2013), and again improve product quality and supply chain coordination (Cheng, 2013). On the other hand, limiting information sharing and may lead to bullwhip effect (Huang *et al.*, 2017) leading to high rate of product expiration or product shortage. As such, the implementation of sharing of vital information across the SC by the Pharmaceutical Distributors and Wholesale firms would bring significant positive change in their operational performance in Ghana.

### **Effect of Information Sharing on the Operational Performance**

With regard to fourth research objective on operational performance. The research hypothesized ( $H_0$ ) that the operational efficiency of pharmaceutical distributors and wholesaler services companies within the selected metropolises in Ghana is not significantly affected by customer relation practice. The result shows that customer relation has substantial positive impact on operational performance ( $\beta = 0.370$ ,  $t = 4.278$   $p < 0.05$ ) from Table 16. This is because 4.278, which is greater than 1.96, was the model's t-stat. hence, the outcome was in agreement with the hypothesis that, Customer relation could substantially improve operational performance. Therefore, the statement that customer relation practice greatly affects organizational efficiency" was endorsed.

From the ( $\beta$ ), between the exogenous and endogenous variables, the analysis found a positive correlation between customer relationship and firm performance. This means that item rise of 37 % in customer relation practice would lead to an item rise increase of the same margin (i.e., 37 %) in operational

efficiency. This means that customer relationship is a vital successful quality control measure in supply chain; it inevitably leads to an improvement in the Pharmaceutical Distributor and Wholesale companies' operation performance. The study's result has been supported by the relational exchange theory. The theory posits that trust-based relationships assist in allocating resources to developing and maintaining relationship and are less prone to suppliers-customer opportunism.

The theory provides a framework for managing relationship flow and are important to promote resource exchange between and within SC organizations (Granovetter, 1985). This means that, the firm studied can overcome their SC quality constrain by using more appropriate practice including customer relationship practice. This is because, the study found customer relationship practice to sufficiently enhance SC quality and again improves operational performance in terms enhancement in product quality, speed of delivery, adaptability and costs. In line with the relational exchange theory, customer relationship practice could be implemented by the firms studied to constantly address their supply chain quality until they are totally addressed.

Also, the finding is in line with earlier studies by Salojärvi, Ritala, Sainio and Saarenketo (2015), Nimeh, Abdullah, and Sweis (2018), Omoush, (2020) and Al-Deehani, Ali, Hashim, Basha, (2020) who revealed that customer relationship practices can positively improve operational performance of firms. Shahbaz, *et al.* (2018) posit that building close ties with customers decrease customer complain, address customer requirement, enhancing customer support and satisfaction. The result is also in line with study by Omoush, (2020) who

investigate the correlation between SC management practices and operational performance of Jordan pharmaceutical firms.

It was revealed in the result that, having strong bond with the customer can have substantially positive impact on operational efficiency. A study by Mahafzah *et al.*, (2020), also, found positive correlation between customer relationship management and services quality of Jordanian hotels. The study again further confirmed the findings of Gandhi, Shaikh and Sheorey (2017), Tayyab, Awan and Bukhari (2020), who concluded that customer focus has substantial positive impact on business efficiency. Also, Nikou, Selamat, Yusoff and Khiabani (2016) stressed the role of customer relationship in building long term relationship, customer repurchasing intention, customer loyalty and improvement in customer satisfaction. Agreeably, customer practice is one of the critical factors of achieving high operational efficiency in the industry across the globe including Pharmaceutical firms in Ghana.

**Explanation of target endogenous and exogenous variable variance**

The predictive exactness of the model employing the determination coefficient ( $R^2$ ) was stated. Other related estimates were also published, including the effect size ( $f^2$ ), the predictive significance ( $Q^2$ ) and the model's relative impact ( $q^2$ ).

**Table 14: Exogenous of Target Endogenous Variable Variance**

LV	$R^2$	$f^2$	$Q^2$	$q^2$
TPS		0.027	0.255	0.009
SSP		0.281	0.395	0.090
IS		0.106	0.418	0.040
CR		0.266	0.417	0.091
OP	0.704			

Note:L.V = latent variable,  $R^2$ = R squared,  $f^2$  = effect size,  $Q^2$  = predictive relevance,  $q^2$ = relative impact of the model

Source: Field survey (2020)

### **Coefficient of Determination ( $R^2$ )**

From Table 14, The coefficient of determination,  $R^2$ , is 0.704 for the endogenous latent variable. This means that the four latent variables (TPS, SSP, IS and CR) moderately explain 70.4% of the variance in operational performance. Hair et al. (2011) clarified that  $R^2$  indicates the combined impact on the endogenous variable (OP) of the exogenous variables (TPS, SSP, IS, CR). Simply put, the supply chain quality management practices cause 70.4% of change in the operational performance of the Pharmaceutical distributors and Wholesale companies in the two regions in Ghana. Hence, these classes of firms should pay much attention to these supply chain quality management practices as improvement as 70.4% change in these practices would improve their operation by 70.4

### **Effect Size ( $f^2$ )**

Cohen's (1988) effect predictor standard was used to determine the impact size ( $f^2$ ) of each independent (exogenous) variable, with values of 0.35 (high), 0.15 (moderate), and 0.02 (low) respectively. Table 11 shown that, strategic supplier partnership (SSP) and with  $f^2$  of 0.281 means that it has the highest effect on operational performance followed by customer relationship with  $f^2$  of 0.266, information sharing with  $f^2$  value of 0.106 and top management support with  $f^2$  value 0.027. On the other hand, SSP, IS and CR were found to have medium effects on operational performance. The reason being that, the effect sizes ( $f^2$ ) of SSP, IS and CR were 0.281, 0.106, and 0.266 respectively. Based Cohen's (1998) criterion, all the  $f^2$  values were  $< 0.35$ . Among these strategies, TPS had a relatively small effect on operational performance, followed by IS and CR respectively.

However, TPS had the smallest effect size and this could be because it had no substantial impact on the operational performances of the Pharmaceutical Distributor and Wholesales firms within the selected regions in Ghana. The result implies that when these strategies are implemented by Pharmaceutical services firms during supply chain quality practices, it will have relatively higher effect on enhancing the quality of the product, speed of delivery, adaptability and costs as compared to the other strategies. The strategy is followed by SSP, CR and TPS respectively, implying that, among the different, TPS has the lowest impact on OP of the companies studied.

### **Predictive Relevance ( $Q^2$ )**

The predictive value of the predictor independent (exogenous) latent variables was also evaluated (Roldan, et al., 2012). Predictive significance ( $Q^2$ ) is measured by deleting part of the data matrix, calculating the model and predicting the deleted part using the result (Hair et al. 2014). The threshold is that, for a specific independent variable, the  $Q^2$  value is  $> 0$  (Henseler *et al.*, 2009; Chin, 2010).  $0.02 \leq Q^2 < 0.15$  (weak effect),  $0.15 \leq Q^2 < 0.35$  (medium effect) and  $Q^2 > 0.35$  (large effect) were suggested by Henseler *et al.* (2009). Ridgdon (2014) posits that while equating the value of  $Q^2$  to (0) shows that it is possible to predict the endogenous variable,

From Table 11, it could be inferred that all the independent variables were able to moderately predict. Reason being that, the  $Q^2$  of the exogenous variables were as follows: TPS (0.255), SSP (0.395), IS (0.418), and CR (0.417) respectively. All these  $Q^2$  values were  $0.15 \leq Q^2 < 0.35$  thus showing moderate predictive significance.

### **Predictive Relevance ( $q^2$ )**

The consistency of each exogenous construct's predictive relevance to a particular endogenous construct was also assessed. Henseler *et al.*, (2009) suggest that the decision that  $q^2$  values are 0.35 high, 0.15 moderate and 0.02 low effect sizes, respective. The result of the study had  $q^2$  values (TPS = 0.009; SSP = 0.090; IS = 0.04; CR = 0.033;) were < 0.15. from the law of decision, it reflect small effect sizes. In the model, the effect sizes of the different structural paths were simply small. The predictive relevance result ( $q$ ) implies that the model is typically fine, since the dependent variable (operational performance) can be explained by all the independent variables (TPS, SSP, IS, and CR).

### **Chapter Summary**

This section present study findings and discussion the demographic characteristics of the participating firms, the descriptive of the research objectives and also test the hypothesis of the research objectives using the PLS-SEM. The study found Top Management Support practices, Strategic Supplier, Information Sharing and Customer Relationship to significantly affect the operational performances of the firms' studies. The findings mean that (TMS, SSP, IS and CR) are vital enablers toward improving supply chain quality management and subsequently OP. The review, findings, and recommendations were discussed in the following sections.

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### Introduction

The research objectives, conclusion and recommendations were summarized in this chapter. The chapter made recommendations for further study.

#### Summary

The purpose of this study was to ascertain the effects of various supply chain quality management practices specifically top management support, strategic supplier partnership, information sharing and customer relationship on operational performance of pharmaceutical distributors and wholesalers in Ghana. The study adopted positivism paradigm, quantitative technique, explanatory research design and structured questionnaire was used to collect data from the 159 pharmaceutical distributors and wholesalers in greater Accra and Ashanti region. The data was analysed using Smart-PLS and findings indicated that improvement in some of these practices, specifically top management Support, Strategic supplier partnership information Sharing and customer relationship will enhance the operational performance of these class of firms as shown by table 14 ( $R^2 = 0.704$ ).

Specifically, the examined the following research objectives in order to:

1. Examine the effect of Top Management Support practices on operational performance of Pharmaceutical Distributors and Wholesale services firms

2. investigate the effect of Strategic Supplier Partnership practices on operational performance of Pharmaceutical Distributors and Wholesale services firm
3. Assess the effect of Information sharing practices on operational performance of Pharmaceutical Distributors and Wholesale services firms
4. Ascertain the effect of Customer Relationship practices on operational performance of Pharmaceutical Distributors and Wholesale services firms.

The study developed and tested four hypotheses to help achieve the objective of the research. The thesis was focused on positivism quantitative methodology and explanatory research design. From detailed reviews of previous studies, a structured questionnaire was developed to collect data from 159 pharmaceutical distributors and wholesale companies within Greater Accra and Ashanti regions in Ghana. For data review, 135 valid responses with a high participating rate of 84.9 per cent were used using the census technique. IBM SPSS Statistics (version 21) and SmartPLS (version 3) software were then used to process the data. To resolve the study's problem, descriptive and inferential statistics were used.

The data on the respondents' company and person characteristic were analysed using frequencies and percentages. Also, the inventory profile of the companies was analysed. The partial least squares structural equation method was used to evaluate the study's hypotheses. The significance test was performed under the assumption that the statistics should be greater than 1.96 resulting in a p-value of less than 0.05. The main result findings of the study in

relation to the research objectives were finally discussed in this section. It was revealed by the study's that, top management support activities have no significant positive effect on the operational performance of pharmaceutical distributors and wholesale companies within the selected regions in Ghana.

This implies that a unit increase in the practice does not lead to any significant increase in the operational performance levels of the firm's studies. Thus, the practice does not play any significant role when the firm intend to improve their operational performance level. The study also examined the effect of strategic Supplier Partnership on the operational performance of Pharmaceutical distributor and Wholesales' firms within the selected regions in Ghana. The finding indicated that strategic Supplier Partnership as a practice for managing supply chain quality has a significant positive effect on the operational performance levels.

This implies that, a unit increase in the Strategic Supplier Partnership leads to a unit increase in the operational performances of the firms' studied. This means that establishing long term relationship with supplier, for instance, are key to helping the firm improve upon their overall operational performance levels and invariably firm performance. In relation to the third research objective on the effect of Information Sharing on operational performance of pharmaceutical Distributors and Wholesalers within the study area was examined. The study found that Information sharing as practice had a significant positive effect on operational performance of Pharmaceutical Distributors and Wholesale firms within the regions of Ghana.

This implies that the practice is effective in improving the operational performance levels of the firms studied. This means that, sharing quality and

timely information with key suppliers are vital to helping the company's overall operating efficiency levels and, in turn, firm performance are improving. Finally, the fourth research objective on the Customer relationship on operational performance of Pharmaceutical Distributor and Wholesale firms within the study area was examined. The study found that Customer relationship as a quality management practice had a positive significant effect on the operational performance of Pharmaceutical Distributors and Wholesale firms within the selected regions in Ghana.

This means that the practice plays significant roles in improving the operational performance levels of the firms studied. The result implies that the more the firms studied adopts this practice in managing their supply chain quality, the higher their operational performances and invariably overall firm performances.

### **Conclusions**

The study aimed at examining the effect of supply chain quality management practices on operational performance of Pharmaceutical Distributors and Wholesalers within Greater Accra and Ashanti respectively. As a result, the following conclusions were drawn based on the study's main findings. The study's findings literally imply that, for the first research goal, management of the Pharmaceutical distributors and Wholesale firms should consider Top management support as one of the practices for managing supply chain quality. This is because, this practice is likely to improve product flexibility, reduce cost of operation, delivery time while improving product quality.

The result has been largely supported by previous empirical studies by indicating that firms that focus on strategic planning and goal setting by top management are mostly able to properly manage and improves their operational performance levels. The study concluded that management support practice is key in achieving high operational performance. In terms of the second research objective, the study revealed that the Strategic Supplier Partnership strategy has a significant positive effect on the operational performance of Pharmaceutical Distributors and Wholesale firms within the two regions studied.

The practical implication of this finding is that, management of Pharmaceutical Distribution and Wholesaling firms should emphasise on developing and strengthening relationships with key actors including key suppliers. This is because, such relationships could help these firms to obtain relevant resources on time and at reduce cost from their suppliers to aid supply chain quality management activities and invariably increase operational performances. This finding has been supported by existing related literature by indicating that firms that focus on buyer-supplier integration are able to improve their product quality without compromising the deliver speed, flexibility, cost of their operation.

In terms of the third objective, the result had practical implications for management of the Pharmaceutical Distributors and Wholesaler firms. The result implies that management of the firms' studied should view the Information Sharing as a strategy that could help them reduce operational costs while improving product quality, operational speed, and flexibility. The strategy could invariably enable management to strategically plan, forecast, improve customer satisfaction and competitiveness as they would be able to minimize

delivery delays without compromising on customer value. The study provided empirical evidence that the implementation of information sharing practice is likely to improve operational performance.

The study, therefore, concluded that Information Sharing is a key strategy for managing supply chain quality to enhance the operational performance levels of the Pharmaceutical Distributors and wholesale firms. Finally, the study's finding on research objective four revealed a positive significant effect of Customer Relationship on the operational performance of Pharmaceutical Distributors and Wholesale firms within the regions studied. The practical implication is that, customer relationship practice should be viewed by management of the firms' studied as an effective strategy for managing supply chain. This is because, the practice has been empirically considered as effective for managing product and services quality to customer. The study, therefore, concluded that customer retention is critical in improving operational performance.

In conclusion, the study found that supply chain quality management activities have a positive impact on organizational efficiency of Pharmaceutical Distributors and Wholesale firms within the two (2) selected regions of Ghana. More precisely, practices such as Strategic Supplier Partnership, Information Sharing and Customer Relationship all had significant positive effect on operational performance. However, Top management Support has no significant effect on operational performance of Pharmaceutical Distributors and Wholesalers in Ghana

## Practical Recommendations

The study recommended that pharmaceutical companies, especially the distributors and wholesalers should put a greater emphasis on to long-term planning on asking suppliers to continuous improvement their quality of specification along with lead time, this will invariably impact the overall quality of the (medicinal) product. Again, to ensures the distribution of reliable, quality and safe medicinal product, pharmaceutical wholesalers can collaborate to ensure visibility and traceability of their supply product. More precisely, top management should constantly assess and evaluate suppliers financial, technical and supply base on quality product critically before awarding contract.

The partnership should be built on establishment of long-term agreements (contracts) between the parties. By doing, so, personal trusts, commitments and loyalty would be strongly built between these parties which would help them to jointly manage supply chain quality with professionalism, efficiency and effectiveness. These would in turn better operational performance and invariably improve overall business performance levels. The study also recommended that management of the firms studied should develop and strengthen their competitive supply chain quality management based on constant sharing of quality and timely information with their strategic partners. Because it is crucial in achieving sustainable operational performances. This can be successfully achieved by emphasizing on quality of information sharing both from the upstream and downstream supply chain.

This would enable the Pharmaceutical Distributors and Wholesale firms forecast properly to avoid shortages and unnecessary expiration of medicinal product. The study finally recommended that; management of the firms studied

should frequently keep close contact with customers and evaluate the formal and informal customer complain. Management should again actively seek ways to improve product and services quality in order to achieve greater customer satisfaction. This would enable firms retain customers and achieve competitive operational performance.

### **Suggestions for Further Research**

The study focused on how quality control activities in the supply chain impact the operational performance of pharmaceutical distributors and wholesalers' firms in Ghana in some selected regions. As such, further research could expand the study to include the other regions in the country, in particular those in developing economies. This will help to extend current awareness and help to generalize results. Therefore, more research could be carried out to explore other dimensions of success, including financial, market-based and sustainable performance. This will help to expand current awareness of how quality control activities in the supply chain influence the other dimensions of company success within pharmaceutical distributors and wholesale companies.

Future research can include dimensions like multiple respondents from each organisation to address the common method bias. Future research can also consider manufacturer-wholesaler co-ordination and wholesaler-retailer co-ordination. Again, factors like size, firm position in supply chain as well as market share of the organisation can be considered in future study.

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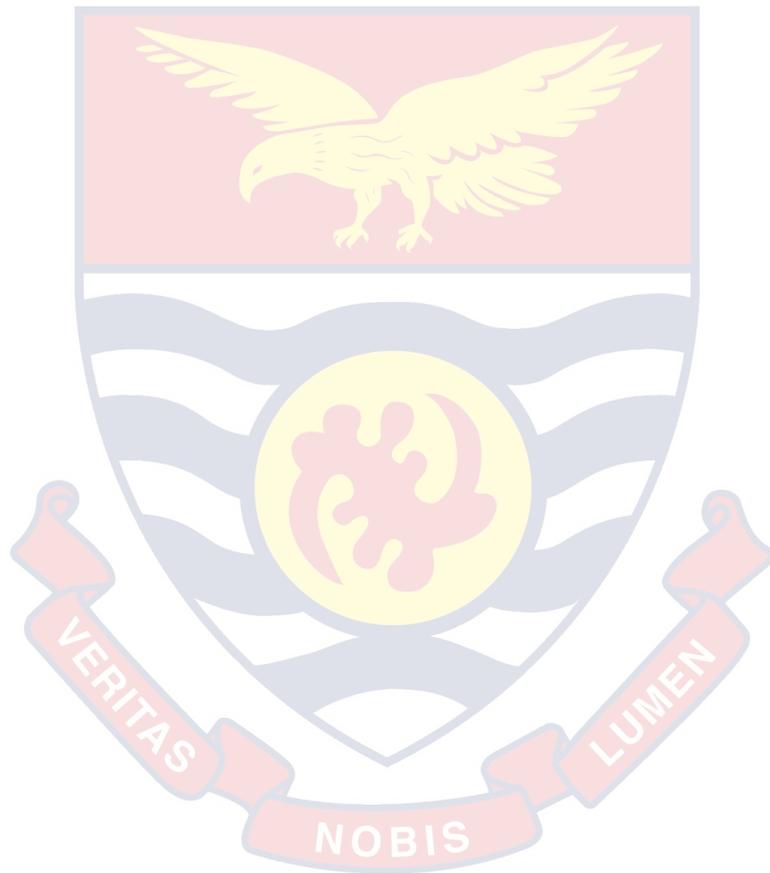
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**APPENDIX**  
**UNIVERSITY OF CAPE COAST**  
**COLLEGE OF HUMANITIES AND LEGAL STUDIES**  
**SCHOOL OF BUSINESS**  
**DEPARTMENT OF MARKETING AND SUPPLY CHAIN**  
**MANAGEMENT**

Dear Sir/Madam

I am a master student from the **Department of Marketing and Supply Chain Management**. I am carrying out my thesis work on the topic “**Supply Chain Quality Management Practices and Performance of Pharmaceutical Distributors and Wholesalers in Ghana**”. Your views are very much important to the study. Every information you provide would remain highly confidential. Thanks for accepting to participate in the study.

*Please tick where appropriate*

**SECTION B: TOP MANAGEMENT SUPPORT**

On a scale of 1-5, please indicate your level of agreement to each of the following statements. **With 1 – Least Agreement and 5 – Highest agreement**

<b>TOP MANAGEMENT SUPPORT</b>	1	2	3	4	5
In our firm, long-term plans are focused on quality improvement of product and services					
Top management team demonstrates a behavior that indicates they value quality					
In our firm, top-level managers often discuss the importance of quality					
Top management constantly assesses the impact of our supply chain function on quality performance					
In our firm, top-level managers review supply chain quality issues					
Top management effectively communicate with the entire workforce, key suppliers and customers					
Top management offer innovative and continuous improvement policies					
Top management supports quality teams with the necessary resources to apply quality in our supply chain					

**SECTION C: STRATEGIC SUPPLIER PARTNERSHIP**

On a scale of 1-5, please indicate your level of agreement to each of the following statements. **With 1 – Least Agreement and 5 – Highest agreement**

<b>STRATEGIC SUPPLIER PARTNERSHIP</b>	1	2	3	4	5
We consider quality as our number one criterion in selecting suppliers					
We have helped our suppliers to improve their product quality					
We include our key suppliers in our planning and goal-setting activities					
We have continuous improvement programs that includes our key suppliers					
We actively involve our key suppliers in new product development processes					
We collaborate actively in forecasting and planning with supply chain partners					
We develop strategic plans in collaboration with supply chain partners					
Supply chain partners inform us of new developments in a timely manner					

**SECTION D: INFORMATION SHARING**

On a scale of 1-5, please indicate your level of agreement to each of the following statements. **With 1 – Least Agreement and 5 – Highest agreement**

<b>INFORMATION SHARING</b>	1	2	3	4	5
Adequate information systems exist between our firm and partners					
Our suppliers keep us fully informed about issues that might affect our business					
Information exchange between us and our supply chain partners is reliable					
Information exchange between us and our supply chain partners is adequate					
Information exchange between us and our supply chain partners is timely					
Information exchange between us and our supply chain partners is accurate					
Information exchange between us and our supply chain partners is complete					
We provide information to suppliers on delivery schedules					

**SECTION E: CUSTOMER RELATIONSHIP**

On a scale of 1- 5, please indicate your level of agreement to each of the following statements. **With 1 – Least Agreement and 5 – Highest agreement**

<b>CUSTOMER RELATIONSHIP</b>	1	2	3	4	5
We frequently evaluate the formal and informal complaints of our customers					
Customer feedback is used to determine their requirement in the firm					
We anticipate and responds to customers’ evolving needs and wants					
Customer focus is reflected in our business planning					
Our firm actively seek ways to improve the primary product/service in order to achieve greater satisfaction					
We involve our customers in periodic review of our operations					
Customer requirements are used as the basis for measuring quality in the firm					
We are frequently in close contact with our customers					

**SECTION F: OPERATIONAL PERFORMANCE**

On a scale of 1 – 5, please indicate your level of agreement to each of the following statements. **With 1 – Least Agreement and 5 – Highest agreement**

<b>OPERATIONAL PERFORMANCE</b>	1	2	3	4	5
There is enhancement in product quality					
The firm’s supply chain quality management practice ensures reduction in product delivery cycle					
The firm’s supply chain quality management practice ensures minimization of product/services wastages					
The firm’s supply chain quality management practice ensures reduction of management costs					
The firm’s supply chain quality management practice ensures reduction in lead time					
The firm’s supply chain quality management practice ensures delivery flexibility					
The firm’s supply chain quality management practice ensures reduction of labor costs					

## SECTION A: PROFILE OF PHARMACEUTICAL FIRM

What is your business ownership type?

Private ownership [ ] Wholly state owned [ ] Joint state-private  
ownership [ ]

Kindly indicate the age of the firm

Less than 10 years [ ] 10-20 years [ ] 21-29 years [ ] 30 years or  
more [ ]

## SOCIO-DEMOGRAPHIC INFORMATION OF RESPONDENTS

Sex: Male [ ] female [ ]

Age: 18-35 [ ] 36-45 [ ] 46-55 [ ] 56 or over [ ]

Please indicate your educational qualification

Below HND [ ] HND/Equivalent [ ] First Degree [ ] Post  
Graduate Degree [ ]

What is your current position in the firm?

Chief Executive [ ] General Manager [ ] Supply Chain Manager [ ]  
Operations

Manager [ ] Marketing/Sales Manager [ ] Other Manager [ ]

How many years have you been working in your position?

Less than 5 year [ ] 5-10 [ ] 11-14 year [ ] 15 years or more [ ]

**THANK YOU FOR YOUR PARTICIPATION**