NOBEL INTERNATIONAL BUSINESS SCHOOL

DOCTOR OF PHILOSOPHY IN BUSINESS ADMINISTRATION

SCT UTILIZATION AND FOREIGN TRADE FIRM PERFORMANCE IN GHANA: THE MODERATING EFFECT OF ENTREPRENEURIAL ORIENTATION AND CUSTOMS RESPONSE

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Abstract

With the advent of globalization, Ghanaian SCs have experienced an upsurge in the number of importers, exporters, suppliers, wholesalers, distributors, and customers. According to literature reviewed, SCs become vulnerable to various disruptions as they go global and becomes complex. These disruptions, in effect, present significant challenges to the various stakeholders in the foreign trade industry, therefore the adoption and use of SCT`s to help mitigate the effects of these disruptions and complex SCs. This study therefore examines the use of SCT and its impact on organisational performance, with entrepreneurial orientation and customs response as moderators. To achieve this objective, a systematic sampling technique was used to collect data from 312 managers of customs brokers operating within the Tema and KIA aviance port. Quantitative research method was adopted for the study. The conceptual framework was tested using partial least squares method, which is a variance-based structural equation modeling approach. The study was able to reveal that, all other things being equal, when there is a unit increase in SC utilisation, operational performance of firms in the Ghanaian foreign trade will increase by 14.7%. Also, one of many reasons for foreign trade firms to utilize SCT is that customers are becoming more competitive. Additionally, the study found significant and positive direct relationship between SC management practices including technological innovation and the performance of an organization. SCT has the tendency to improve performance of firms; however, the relationship is strengthened with innovation culture as a moderator. Based on the findings above, organisations in the foreign trade industry are encouraged to use Electronic Data Exchange in their work. This is because of its ability to help in cost reduction and transactions volume objective among SC partners. Likewise, as a result of the positive moderating relationship between entrepreneurial proactiveness and SC itilization and their impact on operational performance, this study recommends that customs brokers and other stakeholders in the foreign trade industry should constantly introduce new products/services, administrative techniques and operational technologies. The introduction of new products & services system makes them very competitive in relation to their peers and leads to huge market share.

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Declaration

I, **Ernest William Annan-Prah,** hereby declare that this dissertation is the product of original research conducted by me under the supervision of Dr. Johnson Okeniyi. I also declare that this dissertation has not been submitted to any other Institution for assessment, publication, or for any other purpose. Where the works of other people have been used, references have been duly cited. It is in this regard that I declare this work as originally mine. It is hereby presented in partial fulfilment of the requirements for the award of the Doctor of Philosophy Degree in Business Administration at the Nobel International Business School.

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List of Abbreviations

SC – Supply chain

SCT - Supply Chain Technology

ASYCUDA - Automated System for Customs Data

EO - Entrepreneurial Orientation

SCM – Supply chain management

GDP - Gross Domestic Product

USA- United States of America

USD- United States dollars

TTF - Task-Technology Fit model

WTO – World Trade Organisation

UN/CEFACT - United Nations Centre for Trade Facilitation and Electronic Business

IT - information technology

ICT - Information and Communication Technology

SCI - Supply chain integration

IS - information sharing

SCP – Supply chain performance

EDI - Electronic Data Interchange

ERP - enterprise resource planning

CAD - computer aided design

CAPP - computer aided process planning

CAM - computer aided manufacturing

TAM - Technology Acceptance Model

NGO - Non-Governmental Organisations

UNEP – United Nations Environmental Programme

SSCM - Sustainable Supply Chain Management

CUSREG - Customs Response Group

UN/EDIFACT - United Nations/Electronic Data Interchange for Administration, Commerce and Transport

UN – United Nations

CUSDEC - Customs Declaration Message

CUSCAR - Customs Cargo Report Message

CUSREP - Customs Conveyance Report Message

CUSEXP - Customs Express Consignment Declaration Message

CUSRES - Customs Response Message

WCO - World Customs Organization

EU - European Union

BPC - British Potato Council

DEA - Data Envelopment Analysis

ANOVA – Analysis of Variance

EPE - Environmental Performance Evaluation

ANP - Analytic Network Process

FP - Firm Performance

Return on Assets (ROA)

Return on Equity (ROE)

Tobin-Q, Profit Margin (PM)

Earnings Per Share (EPS)

Divided Yield (DY)

Price-Earnings Ratio (PE)

Return on Sales (ROS)

Expense to Assets (ETA)

Cash to Assets (CTA)

Sales to Assets (STA)

Expenses to Sale (ETS)

AR - Abnormal returns

ASR - Annual stock return

OCF - Operating Cash Flow

ROCE - Return on Capital Employed

LP - Labour productivity

CROA - Critical Business Return on Asset

COC - Cost of Capital

MVA - Market Value Added

OP - Operation Profit

ROI - Return on Investment

MTBV - Market-to-book value

LOMC - Log of market capitalization

GRS-Growth in Sales

SR- Stock Repurchases

SPE - Sales Per Employee

ROR - Return on revenue

OPS - Output per staff

CPSP -Cost Per Service Provided

CPCS - Cost per Client Served

CARs - Superior to cumulative abnormal returns

PPE -Profit Per Employee

ROFA - Return on Fixed Assets

ASEAN - Association of Southeast Asian Nations

UNECE - United Nations Economic Committee for Europe

GATT - General Agreement on Tariffs and Trade

IRTU - International Road and Transport Union

IRT - International Road Transport

IMO - The International Maritime Organisation

ICC - the International Chamber of Commerce

ICAO - the International Civil Aviation Organisation

UNCTAD - United Nations Conference on Trade and Development

UNESCAP - United Nations Economic and Social Commission for Asia and the Pacific

UK – United Kingdom

UNCTAD - United Nations Conference on Trade and Development

RFID - Radio-frequency identification

< - less than

> - greater than

= equal to

% - Percent

Chapter 1

1.0 Introduction

1.1 Background of the Study

The traditional ways of carrying out operational activities in organisations have changed due to digitisation and changing needs and preferences of customers. Firms are keeping up with these changing trends of competitive business advantage by making use of Supply Chain (henceforth SC) networking and technologies. Technology adoption and utilisation has become imperative for the sustenance of firms and this is because suppliers and customers are not located in the same geographical area (Chopra & Sodhi, 2014). As firms are confronted with high degree of uncertainty regarding customers' preferences and SC management issues, the adoption and utilisation of Supply Chain Technology (from henceforth SCT) can improve coordination and communication, screening, monitoring and enforcing acceptable standards and practices of all stakeholders in the foreign trade market (Tang & Zimmerman, 2013). The adoption of technology can also improve the competitive advantage of a firm through the improvement of its internal capacity and efficiency (Saeidi et al., 2019). The use of technology can simplify and facilitate the process of sharing information between actors in the SC (Chang et al., 2019). The utilisation of SCT increases the level of competitiveness, organisational flexibility, organisational productivity and the ability of stimulating improvements in the SC network (Gawankar et al., 2020). It is evident in extant literature (Bekana, 2016; Teece, 2018; Mammadov, 2020; Crumpton et al., 2020) that no true trade facilitation and revenue mobilization drives could be successful without the full introduction, integration and usage of SC technologies.

This further supports the need to understand the impact of adoption and use of such technologies on organisational performance as there is an underlying impact of adoption

and utilization on financial and non-financial performance by critically finding out the moderating role of entrepreneurial orientation and customs response in this relationship (Giovanis et al., 2019). In the foreign trade market, there is the need to communicate effectively with many stakeholders such as customers, retailers, distributors, manufacturers and suppliers (Sheth et al., 2020). Also, considering the weakness of institutions in developing countries, a study on a technology that will enhance communication and strengthen institutions in the foreign trade market is not out of place (Myovella et al., 2020). Also observably, there is a growing interest in this area of study and so, much importance has been attached to SCT in academic literature (Büyüközkan & Göçer, 2018; Dallasega et al., 2018; Wang et al., 2019; Shao et al., 2021). Consequently, the need to holistically evaluate the utilization of SCT and its attendant effect on firm performance, especially firms in the foreign trade sector of Ghana's economy.

Customs in different countries around the world play different roles in foreign trade (Asunka et al., 2021). However, the core functions of customs are common among all nations (Malkowska & Malkowski, 2021). Also, Truel (2010) & Moosavy (2021) indicated four main functions of customs which are revenue collection, regulatory compliance, trade facilitation and security. The operations of Customs facilitate revenue collection, compliance to foreign trade regulations and serves as a facilitating avenue for all stakeholders involved in foreign trade (Pasara et al., 2020). Customs also provides security in the foreign trade market (Vorotyntseva et al., 2020). Consequently, the response of Customs juxtaposes SC utilization in foreign trade (Johnson, 2021). Operations of customs in the 1990's were thoroughly looked into with sponsorship from the World Bank as part of the "Gateway Project" (Wulf & Sokol, 2004; Addo & Avgerou, 2020). Moreso, the outcome of the global custom review acknowledged the commitment being made by officers of the various custom services to meet revenue targets (Rasoolimanesh et al., 2020). However, the review added that the system used by Customs Excise and Preventive Service (CEPS) for capturing data was extremely laborious and slow: several manual records were kept and the available software,

Automated System for Customs Data (ASYCUDA), was underutilized and poorly maintained (Wulf & Sokol, 2004; Ahmed, 2018; Heydon, 2019).

According to Hamel (2000) and Schoemaker et al. (2018), before organizations can thrive in a dynamic economy, strategic leaders are to place their organizations in a position to be able to capture current markets while they look at a means to create new ones, seize market share from their competitors who are less innovative or more conservative and acquire customers, resources and employees of slow growing firms. Furthermore, Fon et al. (2021) argued that top management officials with higher risk of tolerance, innovation and proactiveness will positively impact firm performance. Organizations that demonstrate high level of Entrepreneurial Orientation (EO) are likely to be forerunners in their respective industries and will be willing to test new forms of knowledge to discover new avenues for development (Wales, 2016; Mthanti & Ojah, 2017; Adomako, 2021). Thus, firms that are known to be highly entrepreneurial are more likely to encourage change and proactively respond to changes in the external market (Fenwick et al., 2017).

The current state of SC strategies in business and the impact of these strategies in achieving competitive advantage have become an issue worth investigating (Kwak et al., 2018). The traditional bureaucratic way of formulating strategies is changing into an innovative way with less bureaucracy and greater implementation (Kanter, 2019). In support of this argument, Shan et al. (2019) noted that the organizational structure of distributing channels can be seen as a network of flows integrated with information, products and services. This integration process helps organizations to perform better along the SC process and compete well in the marketplace. This results in an increase in communication and cooperation at successive stages of production which decreases cost through reduced inventory and shorter order time. It also improves quality through better product design and enhance innovation through more different design process inputs (Kou et al., 2018). Hence, SC management provides organizations with the opportunity to use their assets effectively and efficiently, especially their inventory. However, other

firms do not exploit the concept of the SC to achieve competitive advantage even though SCM is seen as a vital part of daily activities at the tactical level in these organizations (Antoni & Akbar, 2019).

Similarly, Isernia et al. (2019), defined SC as a group of organizations that collectively process raw material into finished goods. In management research, the concept of SC has gained increased attention over the last several years (Rebs et al., 2019). Moreover, Lechner et al. (2020) argued that the merits of this increased attention can be attributed to at least two reasons: First, 75 percent of the firm's operating budget is linked closely to purchasing inputs. Secondly, organizations reduce their inputs costs to boost their input quality and gain an advantage over competitors (Wood et al., 2021). Also, SC management requires the investment of infrastructure to augment its activities (Asamoah et al., 2021). These investments include system supports, training, and development of personnel. One of the additional primary investments to help run SC systems lies in the area of technology (Castka et al., 2020).

The last ten years of economic reforms from 2010 to 2020 and specifically the last two years from 2018 to 2020 has led to an increase in Ghana's economic growth and Gross Domestic Product (GDP) (Ackah et al., 2014). As Ghana continues to grow from a service-driven economy to manufacturing-driven economy, the importance of firms in the Ghanaian foreign trade industry is gaining popularity. With many firms concentrated in import and export trading, the demand for SCT has been growing significantly in Ghana (Ardeshiri, 2014; Ardeshiri & Rose, 2018). The performance of the foreign trade industry is very instrumental to the growth of the economy. According to available records, from the third quarter of 2017 to the fourth quarter of 2017, Ghana's total exports increased from 2,889.30 million USD to 3,747.50 million USD (Ministry of Finance, 2018).

Due to the importance of foreign trade to the growth of Ghana, the government is doing everything possible to enhance foreign trade. This is being done with the expansion of the Tema and Takoradi ports and the building of numerous seaports to facilitate trade

(Oteng-Ababio, 2018). There has also been an increase in food storage warehouses and improvement in the activities of the ports with the recent introduction of the paperless system of clearing. This is one of the innovations under the Ghana Single Window system/portal of clearing introduced recently to increase efficiency at the ports (Bassa et al., 2021). There is limited information on the adoption and utilization of SCT in Ghana (Opoku, 2020). Based on this background, the current study seeks to find out the adoption and utilisation of SC technologies and further find out the impact of these on the performance of the firms. Technology adoption among organisations depends on when the level of organisational technology competence is weakened or strengthened, then technology adoption could vary among organisations. The moderating role of entrepreneurial orientation and customs response would therefore help us understand the relationship between adoption and use of SC technologies, and its effect on firm performance. It is important now to proceed to understand the concept of SCT adoption and utilisation and discuss its impact on organisational performance. There has been extensive research on SC technologies, but there has not been a common definition of the concept (Kamaruddin & Udin, 2009; Taschner & Charifzadeh, 2020).

Likewise, a generally accepted definition of SCT is the one provided by Autry et al. (2010) noting that SCTs are tools and/or techniques that may be implemented in order to effectuate integrated SC management within or across organizational boundaries. The adoption and utilisation of SCT could be seen as the extent of applying or degree of making use of a system or a technology by an organisation in integrating and coordinating the flow of information electronically throughout and within the SC network of various actors including partners, clients, suppliers and competitors (Sharma & Khanna, 2020). This concept has also been defined by Kamariah et al (2009) as the application of technology or the usage of a technology system in an organization by the integration and coordination of the flow of information electronically throughout the SC networks of customers, suppliers and partners. In defining SCT, Al Ahbabi et al. (2019) defined it as the application to change original data into knowledge and information that will promote efficiency and effectiveness in business operations. Also, Chaldoupis (2018) defined SCT

as technology or a system that is used in coordinating and integrating information flow electronically throughout the SC to generate effectiveness and efficiency of business processes. With the changing needs and preferences of customers, firms are constantly revising their mode of operation in order to meet this changing needs and global demands (Min et al., 2019).

The drive to adopt SC technologies is dependent on the level of innovation by firms (Hahn, 2020). The concept of innovation leads firms to adopt new processes, strategies and technologies (Ranta et al., 2021). Firms become innovative in their use of new technology to enhance their performance (Filiou, 2021). Companies can obtain competitive advantage and enhanced performance by the act of innovation including both new ways of doing things and new SCT (Woo et al., 2021). Because the adoption and utilisation of SCT is low in the Ghanaian context, it could be inferred that this is due to the low level of SCT adoption in the Ghanaian context (Acquah et al., 2021). Some researchers (Azmi et al., 2018; Siah et al., 2018; Rajah et al., 2018) assert that a number of factors could influence the decision of a firm to adopt and use SCT to improve their business performances. These researchers have categorised such factors into environmental, communicational, and organisational factors. The organizational factors such as top management support can strongly affect how well a company meets its objectives (Mehralian et al., 2017). For instance, top management support is conducive to overcoming the reluctance of information sharing and providing the resources required for the implementation of SCT. In addition, the process of communication of an idea from top management to the employees and between employees in an organization whether using formal or informal communication is key in achieving the objectives of an organization (MOR Barak et al., 2021). An understanding of the inner workings of communication channels is essential to make the adoption successful. Meanwhile the third internal factors, environmental factors defined as the environmental risks from outside the SC, usually relate to economics, social, governmental and climate control. Thus, firms facing above average environmental uncertainty will have a greater incentive

to adopt SCT to improve information exchange and manage uncertainty between organizations and their task environment (Nimpano, 2021).

Many researchers have identified organizational factors (e.g., management support, structure of the organization and size of the organization), technology-related factors (e.g. compatibility, complexity, perceived usefulness and relative advantages) and environmental factors (e.g. pressure from buyers or suppliers, uncertainty and competition in the market) as antecedents of adoption of SCT (see for instance Tsu Wei et al., 2009; Sodero et al., 2013; Liu et al., 2016; Zeng et al., 2021). Liu et al. (2016) identified two organizational reasons for adopting SCTs: to include the economic objective of SCT; to enhance efficiency and a normative objective of adopting SCT to attain legitimacy.

In some developed economies, there have equally been some past research on the antecedents of technology adoption (e.g., Kimberly & Evanisko, 1981; Amabile, 1988; Jewer et al., 2017; Obal, 2017). Furthermore, Flaherty et al. (2021) found that as of 1981 a study conducted by Kimberly & Evanisko identified contextual factors, organisational factors and individual factors as the factors affecting the adoption of certain technologies. Russell & Hoag (2004) as cited by Penn (2021), assert that organisational factors such as the culture, climates and structures influence technology adoption and use. Similarly, Ullah et al. (2021), in their research found out that the management skills and knowledge, organisational support and encouragement for innovation resources were imperative for the adoption and use of SC technologies. Organisational factors in the form of links and communication among employees; top management support and leadership behaviour; and quality of human resources could also significantly affect the adoption and use of SCT (Chen et al., 2021).

Scholars have found that SC adoption leads to improved flexibility, reliability and reduction in cost (Eltayeb et al., 2011; De Vass et al., 2018; Gawankar et al., 2020; Karmaker et al., 2021), enhanced agility (Hwang & Min, 2015; Loon et al., 2016), acquisition of competitive advantage, reduction in operational cost, improvement in

customer service, and provision of management support (Chan et al., 2012; Dolci & Macada, 2014). Other research identified lowering cycle times, better transaction efficiency, minimizing bullwhip effect, maximization efficiency of activities, reduction in inventories and higher quality of service (Cao et al., 2013; Brkovic & Sorooshian, 2021) as the impact of SCT adoption on the organization. It should be understood that a single SCT is not possible to yield the benefits discussed above. Different technologies can lead to different benefits and therefore firms must be capable of adopting and using the right technology at the right time to yield the appropriate benefit.

1.2 Problem Statement

SCs have become important for firms as there is the need for information sharing between providers of services, suppliers and customers. Over the years, firms have tried using a hodgepodge of SC approaches. Examples include minimizing pipeline times, predicting launch and early stage demand**,** and prioritizing allocations to enhance firm performance. In recent times, however, firms are adopting various SC technologies towards promoting interactions among actors (Tseng & Liao, 2015; Linton & Kask, 2017; Grabs & Carodenuto, 2021). Therefore, the emergence of adoption and use of technology is viewed as a strategic tool to manage complex SC interactions. Despite the relevance of the adoption and use of current SC technologies, not much has been studied on relating SCT utilization to the performance of firms (Neri et al., 2021). There are a few studies relating SC adoption to performance of firms (Chen et al., 2021). However, there is a knowledge gap generally and in the Ghanaian context, on the relationship between SC utilization and firm performance.

In the Ghanaian context, SCT is considered as an important factor in promoting the performance of Ghanaian institutions specifically in the import and export business. Ultimately is also considered as an important factor in promoting economic growth (Bassa et al., 2021). With the growing need to improve revenue from imports and exports and to comply with international trade standards, there is the demand for SCT, particularly

electronic customs and customs response systems (Raus et al., 2009; Urciuoli et al., 2013; Sen et al., 2016; Huang, 2021). For instance, the budget program for the Ministry of Trade and Industry sought to improve international trade competitive advantage in logistics management, cost, price and quality, leading to timely sales and after-sales services (Budget Estimate of Ministry of Trade & Industry 2017; Cherunilam, 2021). Hence, the need to explore the factors that affect SCT adoption and utilization and how they influence firm performance among imports and exports firms in Ghana.

There have been numerous studies on Supply Chain Technology (SCT) adoption and utilization (Liu et al., 2010; Loon et al., 2016; Saurabh & Dey, 2021). However, evidence of prior studies addressing the current topic—Supply Chain Technology utilization and foreign trade firm performance being moderated by entrepreneurial orientation and customs response—is limited. This study analyses the effect of SCT adoption and utilization on firm performance. This research seeks to fill the gap in theory by finding out how utilization of Supply Chain Technologies seeks to impact various organizational outcomes; specifically looking at the moderating role of entrepreneurial orientation and customs response. The need for organisational technology is explained by the fact that knowledge is a strategic organisational resource that enhances the competitive advantage of the firm (Mikalef & Gupta, 2021).

According to Tippins & Sohi (2003), as cited by Khuntia et al. (2021), the review of literature suggests that the IT competence of the firm does not only create knowledge from stakeholders or members but also helps firms to make use of external information and knowledge to meet the needs of the business. Although prior studies have contributed to the SCT adoption and its relationship with firm performance (Tseng & Liao, 2015; Asamoah et al., 2021) as well as non-linear relationship considering various environmental and industrial contexts (Linton &Kask, 2017; Ripollés & Blesa, 2005; Wang et al., 2016; Mojumder & Singh, 2021), little is known about the drivers of SCT utilization and how entrepreneurial orientation influences the way SC utilization impacts

firm performance in the context of customs brokers in Ghana (Alhassan & Akudugu, 2020).

Presenting the narrative of Ghana, this current study presents the case of customs brokers' usage of SC technologies and its attendant impact on their outcomes in the foreign trade sector of the Ghanaian economy. This research fills an important gap in research by finding out the impact of the utilization of SCT by organizations on their foreign trade firm performance while also considering the moderating effects of customs response and the dimensions of entrepreneurial orientation. The study generally seeks to find out the relationship between SCT utilization and firm performance taking into consideration the moderating role of entrepreneurial orientation and customs response. The study also brought out the moderating role of entrepreneurial orientation on the relationship between SC utilisation and performance. It then assessed the moderating role of customs response on the relationship between SC utilisation and performance. Thus, it is very crucial to have a deeper understanding of how the utilisation of SCT among actors particularly in Ghana's foreign trade sector can be improved (Agbozo, 2017). This is due to two key reasons. First, the recent drive to improve efficiency at the ports and increase revenue collection singularly hinges on the use of SC technologies. Second, since there is an introduction of SC technologies in a highly capital-intensive exercise, non-usage will lead to serious financial and non-financial losses.

1.3 Objectives of the study

This research generally seeks to find out the relationship between SCT utilization and firm performance taking into consideration the moderating role of entrepreneurial orientation and customs response. The specific objectives are as follows:

i. To examine the relationship between SCT utilization and the performance of customs brokers in the Ghanaian foreign trade sector.
ii. To examine the moderating role of entrepreneurial orientation on the relationship between SC utilisation and performance.

iii. To assess the moderating role of customs response on the relationship between SC utilisation and performance of customs brokers in the Ghanaian foreign trade sector.

1.4 Research Questions

i. What is the significant relationship between SCT utilization and the performance of customs brokers in the Ghanaian foreign trade sector?
ii. What moderating role does entrepreneurial orientation play on the relationship between SC utilization and performance?
iii. What moderating role does customs response play on the relationship between SC utilization and performance?

1.5 Contribution of the research to knowledge

Several scholars such as Patterson, Grimm & Corsi (2003); Wu, Yeniyurt, Kim, & Cavusgil (2006); Devaraj, Krajewski & Wei, (2007); Bottani & Rizzi (2008) have conducted studies on the impact of adoption of SCT. Researchers like Agarwal & Prasad (1998); Karahanna, Straub & Chervany (1999); Liang, Huang, Yeh & Linsa (2004); Curran & Meuter (2005) have conducted studies on the antecedents of SCT adoption and its use. According to these scholars, globally, there is the advancement of technology in almost every aspect of organisations, and for these organisations to thrive—sustain market share, improve their penetration, advance their share, and ultimately remain competitive—they are to adopt and assimilate new SCT technologies. From the above viewpoint espoused by these different scholars, considering the limited research that have attempted to explain the effect of SCT utilization on firm performance, this study seeks to provide a more encompassing understanding of how SCT utilization leads to the performance of firms in the Ghanaian foreign trade sector by considering customs response and entrepreneurial orientation as possible moderators. This current study will fill an important gap in research by finding out the impact of the utilization of SCT by

organizations on their foreign trade firm performance. The study will do this while also considering the moderating effects of customs response and the dimensions of entrepreneurial orientation. It will also contribute to knowledge by bringing out the relationship between SCT utilization and firm performance taking into consideration the moderating role of entrepreneurial orientation and customs response. The research will bring out the moderating role of entrepreneurial orientation on the relationship between SC utilisation and performance. It will indicate the moderating role of customs response on the relationship between SC utilisation and performance.

The research results will contribute to the existing body of knowledge helping shareholders and heads of companies formulate the appropriate SC strategies that will enhance the adoption and use of SC in the Ghanaian foreign trade sector based on the various outcomes of customs brokers.

1.6 Significance of the Study

From a theoretical perspective, the current study applies the Technology Acceptance Model, the Task-Technology Fit model (TTF) and the Stakeholder Theory to understudy the use of SCT among foreign trade parties within an emerging market context. Previous research on SC is often limited to adoption and those done in Ghana on utilisation (Omari Tenkorang, 2017) do not include the foreign trade sector which is key to Ghana's economic development. The current study seeks to assess the impact of SC technologies on the performance of customs brokers in the foreign trade industry of Ghana`s economy with entreprenuerial orientation and customs response as moderators and this, will invariably help firms to understand their need for a particular SCT. Firstly, since government regulation is one of the major external forces which affects the decision of firms to adopt SCTs, it will help firms to adjust to current regulations by government and how this could affect their adoption and utilization levels. We could infer that; this thesis will significantly provide the framework for firms to better understand the adoption and utilization of SCTs. Secondly, the study further explores how SCT could contribute to

various organisational outcomes to enable firms understand and strategize the particular technology to utilise. The findings of this study will provide extensive empirical research for the Ghanaian foreign trade looking at the recent improvements in the imports and exports value.

1.7 Definition of terms

The following are some of the key terms that will be used in the study:

- **Technology:**

Technology is the sum of techniques, skills, methods, and processes used in the production of goods or services or in the accomplishment of objectives, such as scientific investigation (Juhji & Nuangchalerm, 2020).

- **Technology Adoption:**

Technology Adoption is a term that refers to the acceptance, integration, and use of new *technology* in society (Yuen et al., 2020).

- **Technology Adoption Lifecycle:**

The technology adoption lifecycle is a sociological model that describes the adoption or acceptance of a new product or innovation, according to the demographic and psychological characteristics of defined adopter groups (Magsamen-Conrad & Dillon, 2020).

- **Technology Utilisation**

Technology Utilization refers to the proficiency in applying technological resources to achieve instructional goals in a given teaching learning situation (König et al., 2020).

i. *Technology Acceptance*

Technology acceptance can be defined as a user's willingness to employ *technology* for the tasks it is designed to support (Kamal et al., 2020).

ii. *SC:*

SC is the activities required by the organisation to deliver goods or services to the consumer (Esper, 2021).

iii. SC Management

SC Management (SCM) is the handling of the flow of goods and services from the raw manufacturing of the product through to the consumption by the consumer (Hazen et al., 2020).

iv. Performance

Performance means continually achieving the preferred results in a manner that is as effective and efficient as possible (Arokodare, 2020).

v. Trade facilitation

The WTO, which describes the term trade facilitation, has already been referred to in this paper as: 'simplification and harmonization of international trade procedures' where trade procedures are 'activities, practices and formalities involved in the selection, presentation, communication and processing of information essential for the transport of goods in international trade' (WTO, 1998). The simplification, harmonization, standardization, and automation of trade procedures are clearly described by many practitioners as trade facilitation. Other meanings go a bit deeper, however.

The United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT), for example, describes trade facilitation as 'simplification, standardization and harmonization of processes and related flows of knowledge needed to transfer products from seller to buyer and to make payments' (OECD, 2001). UN/CEFACT understands, by stressing payment practices, the role that business systems, banks and other financial institutions play in foreign trading operations. In fact, inside the regular commercial invoices between the vendor and the customer, much of the details required for customs purposes can be found. Occasionally, the term 'trade facilitation' is also used more literally and is extended to mean the improvement of transport infrastructure (that is, transport facilitation), removal of government corruption, reduction of customs tariffs, removal of inverted tariffs, resolution of non-tariff trade barriers, export marketing and export promotion.

1.8 Delimitations of the Study

The concept of delimitation seeks to find out the parameters set by a research in the course of conducting it. Delimitation of the study sets out the boundaries of the research and explains the methodological procedures which were used; the population which was focused on, the main literature reviewed and the outside perimeters of the research.

For this study, the research followed the approach of the post positivist, adopting a quantitative approach, where quantitative modes of data collection and analysis were used. The focus of the research included customs brokers in the foreign trade sector of Ghana. The theoretical reviews addressed issues of SCT utilization and its attendant impact on organisational outcomes with entrepreneurial orientation and customs response as moderators in the foreign trade industry of Ghana`s economy.

The research was limited to the sea & air ports system of Ghana, with a focus on foreign trade. The objective of the study was to explore the experience and perceptions of low, middle and high management members in the shipping, freight, logistics and forwarding

companies in the import and export sector of Ghana. The study did not capture the participation of organizations solely involved in Air Freight Services.

1.9 Chapter outline

The study is divided into five chapters.

Chapter One establishes the introduction & background to the study, research problem, objectives of the study, research questions, contribution of the research, significance of the study, definition of terms, and delimitations of the study.

Chapter Two reviews the related literature, establishes the theories and other empirical evidence from previous works. It encompasses the following: the reviews of relevant themes of the research problem, overarching theories, classification models, theoretical framework, related research issues and summary of the related literature.

Chapter Three outlines the procedure and methodology used for the study. It presents the research paradigm adopted, research design used in the conduction of the research, data collection methods and sources of data and finally the statistical test used.

Chapter Four presents the research findings. This includes the presentation of the results which were obtained from the various research instruments used in the data collection. It also involves the analysis of the responses and results of the findings. Chapter five deals with the case study development and implication of the research to various stakeholders. It comprises the summary of the research, discussion of the key findings and conclusion.

Chapter 2

Literature Review

2.0 Introduction

This research investigates the relationship between SCT utilization and firm performance, taking into consideration the moderating role of entrepreneurial orientation and customs response. This chapter addresses some conventional understandings of SCT utilization within key theoretical paradigms in order to contextualize the research findings. It commences with outlining the various definitions and conceptions of SCT, entrepreneurial orientation, customs response and other terms and theories pertinent to the study. It also presents a review of theoretical, conceptual and empirical reviews of the literature in relation to SCT utilization, entrepreneurial orientation and customs response. The chapter also presents the arguments leading to the various statements of hypotheses.

2.1 Conceptual and Theoretical Analysis

2.1.1 Information Technology, Information Sharing and SC Integration

The software and hardware elements of computer systems that allow for support and sustainability in the running, managing, and planning inside companies are referred to as information technology (IT) (Sundram et al., 2020). IT has been viewed as a framework for business relationships, connecting suppliers via electronic data exchange, building computer-to-computer links with suppliers, and developing information systems (Stein & Voehl, 2020). Information and Communication Technology (ICT) may also be seen as a technology-based component of information systems, with the objective of developing computerized information systems within an organization through the use of computer-based networks (Sundram et al., 2020). Information and communication technology (ICT) have become an essential component of the SC, assisting in the improvement of the organization's performance (Hou, 2020). To improve SC efficiency, ICT is today

defined by quick communication and higher levels of expertise. For example, most IT solutions are used to increase SC integration (SCI), information sharing (IS), and cooperation among SC stakeholders in container cargo transportation (Dev et al., 2020). Furthermore, initiatives to build innovative ICT tools, such as e-shipping, e-customs, and other e-business applications, show that IT and IS have a wide range of implications for organizations (Sundram et al., 2020). Both conceptually and practically, Information Sharing (IS) is considered critical to Supply Chain Management (SCM). The capacity to manage the flow of information across the SC is known as information sharing (Kumar & Anbanandam, 2020).

IT is largely used in manufacturing to guarantee a coordinated, automated, or non-manual base for production on shop floors (Marcuzzo, 2020). Manufacturing data may be shared across firms, consumers, and suppliers via connections with other systems. Customers can follow the manufacturing activity of the items they want to buy, and suppliers may keep track of how their materials are being utilized in production operations. IT may successfully enable collaborative networks between businesses, suppliers, and customers, according to studies (Thun, 2010; Prajogo & Olhager, 2012; Nguyen et al., 2015; Sundram et al., 2020). IT also enhances these collaborative networks by fostering cross-functional collaboration among SC participants. To guarantee an effective flow of information, IT removes barriers between businesses and functional areas. IT also encourages the integration of suppliers into joint planning ventures and the creation of new products (Wang et al., 2021). Information Sharing (IS), which has grown in tandem with technological advancements, is a critical component of supply chain performance, SCP (Rathnayaka, 2021). Inadequate IS resources, on the other hand, have been identified as a major roadblock to attaining optimal SCI owing to a lack of funds or management awareness (Sundram et al., 2020).

Sharing demand information in supply networks improves SC performance by improving accessibility and lowering inventory-related expenses (Omar et al., 2020). It has been suggested that the benefits of information sharing are contingent on demand

predictability. Information sharing can have a significantly greater value in situations with unknown demand, for example, early sales of new products or promotion situations (Ding & Wang, 2020). In instances when demand is foreseeable and previous demand can be utilized to build a relatively correct demand prediction, however, information sharing is less useful (Sohrabi et al., 2020). Furthermore, the advantages of using IT are due to its favorable impacts on transaction processing efficiency, which might lead to shorter lead times and lower batch sizes, rather than the exchange of inventory and demand data (Glock & Grosse, 2020).

Though concentrating on the effects of the information sharing between SC partners, the analytical and modelling stream of research does not discuss the actual means of information sharing (Zhou & Li, 2020; Yoon et al., 2020; Kumar et al., 2020). Thus, these studies (Zhou & Li, 2020; Yoon et al., 2020; Kumar et al., 2020) do not specifically address the use of technology in sharing information across SC participants. Yet, they are important since one of the objectives for which IT may be used in SCM is to share planning information. On the use of IT in SCM, there are two streams of empirical study. The first stream focuses on a perculiear technology or application area, while the second focuses on the application and benefits of IT in general. There is a unique corpus of study on the adoption determinants and impact of Electronic Data Interchange (EDI) in studies concentrating on specific technologies or application area (Jöhnk et al., 2021). Here, for example cost reduction objectives and volume of transactions between SC partners have been associated with the adoption of EDI links (Wamba et al., 2020).

Research works on the usage and advantages of IT in SCM with no emphasis on specific technologies is fewer than those on specific technologies or application areas (Nez-Merino et al., 2020). A variety of studies exploring the influence of IT on SC integration, customer integration and service, SC time performance, financial performance, or a combination of these are included in the study on the advantages of using IT in SCM (Munir et al., 2020). Moreover, Auramo et al. (2005) conducted an exploratory multiple case study on the benefits of IT in SCM, while McLaren et al. (2004) investigated how

distinct SCM IS capabilities support diverse operational settings. These studies all had one thing in common: they help in analyzing and comprehending the benefits of IT usage and integration for SCM, but they do not help determine how firms utilize IT in SCM.

In the previous literature, there are a few classification systems that define how IT is utilized for SCM. Bagchi & Skjoett-Larsen (2002) investigated the function of IT and organizational integration in SC integration and suggested a pathway for IT integration that progresses from low to medium to high. In turn, Themistocleous et al. (2004) adopted a scale of low, medium, and too high to define the integration of various IT options. These studies are primarily concerned with determining the degrees of SC integration; however, they do not define how IT is utilized for SCM purposes. Meanwhile, Kauremaa et al. (2004) focused their research on how firms utilize IT in SCM and chose to categorize IT use in SCM into transaction execution and information exchange. Premised on the rarity of making use of IT for sharing information among their sample of firms investigated, they believe that the incentives and specifications for using IT in transaction execution and information sharing differ, and that the benefits of using IT in transaction execution are easier to quantify. They also believe that firms utilize IT for transaction execution in situations where there are huge transaction volumes and strong business relations, and that IT is used for information exchange in situations where demand is unpredictable and new products are introduced often. The study's most serious flaw is that the motivations for utilizing IT for transaction execution and information exchange are speculative and cannot be supported by research data.

IT is largely used in manufacturing to guarantee that production on shop floors is coordinated, automated, or non-manual (Marcuzzo, 2020). Information about the production process may be transmitted across firms, consumers, and suppliers via connections with other systems. Customers can follow the manufacturing activity of the items they want to buy, and suppliers may keep track of how their materials are being utilized in production operations. In the planning phases, enterprise resource planning (ERP) systems are extensively used to enable the seamless flow of information and the

optimum distribution of resources in companies, as well as a range of other operations within SCs. In the product development stage, using components like computer aided design (CAD), computer aided process planning (CAPP), and computer aided manufacturing (CAM) helps the process function properly as there is a shared understanding of the system (Shi et al., 2020). This makes it easy to reuse previous information and create new designs based on existing blueprints. These IT-based tools substantially improve a company's communication and information systems (IS).

IS, which has grown as a result of technological advancements, has been identified as a critical component in successful SCM (Abbasi et al., 2020). Insufficient resources for IS, on the other hand, have been identified as a key barrier to attaining optimal SCI, whether owing to a lack of finances or poor planning and foresight on the side of management (Sundram et al., 2020). Higher sales rates, better ordering functions, and enhanced stock distribution are all benefits of IS, leading to lower shortage costs. This is due to the fact that improved IS procedures reduce information aberrations in the SC's vertical segments. Contrastly, a lack of IT infrastructure places severe constraints on the endeavor to successfully reach SCI. (Rouhanizadeh et al., 2020).

There exists an extensive scope of problems related to suppliers and as such expertise is necessary in different functions across a firm (Mukandwal et al., 2020). Teams are formed specifically to cater to supplier development, based on the materials being bought or the requirements of the supplier, allowing for contact and communication (Holma et al., 2020).

This involvement may entail little or significant duties, ranging from making ideas to overseeing the complete fabrication of a specific material component for manufacturing (Manero et al., 2020). IT has shown to be an effective means of facilitating collaboration across networks of firms, suppliers, and customers. The theoretical overview of the subject is presented in the next section.

2.2 Theoretical Analysis

This section would be used to conduct a critical analysis of the theories that have been found to justify the need for this study. The choice of theories for this research are namely: technology acceptance model, task technology fit model, and the stakeholder theory.

2.2.1 Technological Acceptance Model (TAM) and Task- Technology Fit Model (TTF)

According to Dishaw and Strong (1999), the concept of adoption and utilization of technology in SC management have been well explained by two models that is, the Technology Acceptance Model (TAM) and the Task-Technology Fit model (TTF). Both models though agreed on quite a significant number of perspectives do differ also on a number of issues that concern how organisations adopt and use technology in SC processes. In the Task-Technology Fit model, there is an indication of improved performance of tasks when the available technology has the features that are likely to help in the performance of a given task (Irick, 2008). That is to say, in the Task-Technology Fit model, organisations engaged in the adoption and usage of technology in SC will only do so if they perceive the advantages in its usage such as improved performance and better service rendering to end users. Thus, organisations that are engaged in foreign trade according to the technology fit model, will only use technology when they perceive that its usage will help improve upon their performance in terms of service delivery.

Technology Acceptance Model (Lew et al., 2020) on the other hand is the most prevalent and useful theory when it comes to how organisations adopt and use technology. The thoughts that went into the development of the TAM was intended to give explanation for how people behave in the case of the adoption and usage of technology and the theory was founded on the assumptions from the Theory of Reasoned Action (Song et al., 2021). According to the TAM model, organisations only accept and use a particular technology if they perceive that technology to be useful and easy to use by the employees of the organisation (Lew et al., 2020). That is to say, two major factors determine whether an organisation or a customer should adopt and use a particular technology or not and these

two factors are perceived usefulness and perceived ease of use (Lew et al., 2020). Foreign trade as it is the centre of this study is expected to embrace a particular technology when it realizes that the technology is not complex and helps make their performance better thereby putting them ahead of others in the industry.

The TAM model therefore looks extensively at how the systems embedded in a particular technology allows potential users of that technology to freely and without any difficulty manipulate the technology in order to produce results. Implying that the simpler the technology is, the better and more readily customers become in its adoption and usage (Mooya & Phiri, 2021). The potential user of the technology therefore processes information in order to make an informed decision as to whether to use that particular technology or not (Fedushko et al., 2020). The TAM model also has an assumption that customers or potential users of a particular technology only adopt and use that technology if it is beneficial to them. That is to say, the adoption and usage of technology depends on how useful it is to the users. The question foreign trade organisations are likely to ask before using a particular technology in SC management will be whether the usage of that technology will bring any benefit to them. If the technology has a potential benefit, it is utilized otherwise, it is discarded. The use of technology in SC processes will therefore be welcomed by organisations if they perceive that they will derive benefits such as improved performance and better services to customers from its use (Alazab et al., 2021).

The TAM model according to Yuttapong et al. (2009) has all that is needed in a technological adoption model and therefore very useful in explaining the concept of adoption and usage of technology. Yuttapong et al. (2009) again admitted the fact that the TAM model has offered a comprehensive explanation for why different customers have different approaches to the adoption and usage of a particular technology and predicts how they are likely to respond to the technology when it is introduced to them based on their perceived ease of use and perceived usefulness. In a nutshell, organisations including foreign trade organisations make use of technology by considering the usefulness derived

from that particular technology and also how easy and simple it is to use that technology goes far to affect whether or not that technology is utilized (Murray et al., 2020).

SC management has become an integral part of strategic management in the world of business today. In the quest to achieve optimum SC management in organisations, businesses have resorted to the use of complex technology. A major technology used in proper SC management is Information Technology (IT). The use of technology as such IT in SC management has been significant in shaping both the financial and non-financial performance of organisations. Technology, especially IT is responsible for ready dissemination of information in SC management, and this makes organisations that make use of such technology efficient. Historically, a lot of organisations did apply the concept of technology to their SC management processes and this resulted in those organisations gaining competitive advantage over others in the industry (Kamble et al., 2021).

Most recently, the upsurge in IT and other technologies in SC management has facilitated the acquisition, sharing and management of information which is highly essential for decision making in SC management (Kovacs & Falagara, 2021). A growing body of literature points to the fact that IT is important in SC management (Gámez-Pérez et al., 2020) and that organisations gain from the use of technology in SC management (Asamoah et al., 2021). When organisations use technology especially IT, the SC process becomes more integrated and flexible therefore delivering advantage to the organisation involved (Yu et al., 2021).

In this study however, the objective is to show the factors that enable organisations adopt and utilize technology in their SC processes and how this impacts their performance. Literature reveals that the integration of technology in SC processes results in the process being open enough and stakeholders within the process become motivated (Nilsson & Göransson, 2021). The increased adoption and usage of technology in SC has made the whole process seamless because the suppliers are readily linked with the end users of the products and services and this eliminates the negative impact of unpredictable customer demands and ever-changing environment of business (Damali et al., 2020).

Notwithstanding the advantages gained in the adoption and usage of technology by organisations, costs associated with the acquisition and installation of technology means that more organisations must come together in order to pool resources (Ma et al., 2021). The pooling of resources to acquire a particular technology offer those organisations unique advantages though the financial commitments can be enormous.

Despite the cost of technology, the adoption of technology by organisations that aim at high performance is important as its use will facilitate their day-to-day SC processes which will also result in the satisfaction of the end user of products and services. When the end user of the service is satisfied with the organisation's SC processes, repeat buy will be encouraged which will result in better performance of the organisation financially. Also, the appropriate use of technology in SC management, such as the practice of sustainable SC management, will result in environmental protection which will ensure the continuous existence of resources (Khan et al., 2020). In this study therefore, effort is made by the researcher to bring to light the advantages organisations engaged in foreign trade will gain as a result of their adoption and utilization of technology in their SC processes.

2.2.2 Stakeholder Theory

The stakeholder theory centres on the premise that the success of organisational goals, its policies, and actors interested in its affairs, inter-depend on each other. These actors interested in the affairs of the organisation are referred to as stakeholders. Freeman (2001) who is the main proponent of this theory suggests in his book - "Strategic Management: A Stakeholder Approach"- a collaboration among these stakeholders towards their benefits over time. He defines stakeholders as individuals or groups whose efforts are necessary to the success or survival of an organisation (Freeman, 2001). Even though the concept was derived from shareholders of a corporation, stakeholders look beyond the economic interest associated with shareholders to a broader interest. This makes most studies on stakeholder theory corporate social responsibility oriented.

Although the stakeholder theory has largely been used to analyse the strategic management approaches of private and profit-oriented organisation (Klopotan et al., 2020), it has become popular in recent times amid concerns to sustain programme successes and outcomes of both public and private organisations (Crespin-Mazet & Dontenwill, 2012; Hoejmose et al., 2012; Ahenkan et al., 2013). For instance, Hoejmose et al. (2012, p. 236) posit in their literature review on sustainable procurement that the stakeholder theory is popular for examining the external environment of SPP. Crespin-Mazet and Dontenwill (2012) affirm this in the case of NGOs (Non-Governmental Organisations) and allude their collaborative partnership to their capacity in the area of sustainability. Ahenkan et al. (2013) also uses the theory to assess how local participation is enhanced in financial management and planning process of local government agencies in Ghana. Upon categorising stakeholders into mandatory and permissive (interest advocates and wielders), they posit that interest wielders (community members) rarely participate in hearings meant to solicit their inputs in decision-making.

As part of the strategies to promote SPP in member countries, the UNEP (2011) emphasises the establishment of national task force. Sequel to this, Ghana including other members have constituted a national task force to lead the SPP process at all levels and sectors of government. With the copious stakeholders, it is impossible for the agency theory to analyse their role of enforcing sustainability in public procurement, as it is limited to citizens (the principal), government (the agent) and its dealings with the private sector (third parties). The study employs the stakeholder typologies offered by Ahenkan et al. (2013) to understand the roles and interests of all these stakeholders towards ensuring that governments successfully mainstream and enforce SPP standards to optimise public goods and services delivered to its citizens.

2.3 Empirical Review

This section reviewed literature on previous works done by schorlars that are related to the study.

2.3.1 Supply Chain (SC)

SC as a concept defies a single generally accepted definition. From varied perspectives, many researchers have defined the concept of SC. Value chain or demand chain are other names by which the concept of SC is known. It includes all people and networks of enterprises and facilities that are involved in the procurement and transformation of materials into a semi-finished or finished product and the transportation of the finished product or service thereof to the end user (Rossi et al., 2020). More often than not, there exists some barriers in the organisation that inhibit the flow of information which makes the success of SC in the organisation less feasible and desirable. As a result of these barriers, most organisations have resorted to the use of more decentralized system in handling the facilities involved in SC (Mikalef et al., 2021).

The concept of SC has been argued to consist of five main processes namely: planning, sourcing, making, delivering, and the return process (dos Santos et al., 2021). This implies that in every SC process, there is an interaction between the supplier's supplier and the customer's customer (dos Santos et al., 2021). That is to say, in an SC relationship, several organisations are linked together physically, informationally and financially. This is intended to make the end user more satisfied (Núñez-Merino et al., 2020). In the words of Lu (2011), SC involves a group of participating enterprises which are interrelated to adding value to finished products or services in order to satisfy the end customer the more.

Using the analogy of the pipeline, Slack et al. (2010) saw SC as the same as how water flows through pipelines. SC in the same vein involves how goods and services flow unrestricted from the supplier to the customer. Slack et al. (2010) contended that the longer the pipeline, the more time it takes the liquid to get to its destination. Hence, in

SC, the more the parties involved, the more time it takes the parties to get the products, services, finances, or information from the point of production to the point of consumption.

From all the definitions above, it is evident that the concept of SC goes beyond the mere movement of products, services, finances and information from one place to the other to include real value addition to these inputs that are moved around. The view point that SC involves the mere movement of supplies from point of production to the point of consumption limits the role the concept really plays. Instead of seeing the concept of SC as the mere movement of goods and services, the concept should rather be seen as interrelated activities of partnering forms that deliver products to end users more satisfactorily whilst giving good returns to the organisations that have engaged in the process by making them more effective and profitable (Xia & Tang, 2011). Because of this, there is the need to have a strategic management of SC so that at every stage of the chain value can be added and benefits accrue to the firms involved in the process.

2.3.2 SC Management (SCM)

SC Management (SCM) first surfaced in the early 1980's as a paradigm shift from the earlier philosophies in order to deliver goods and services to the end consumer in real time and more efficiently for customer satisfaction. The emergence of SC Management was to improve the handling of SC activities so that the ultimate objective of the concept, that is delivering products and services more efficiently and effectively, can be achieved (Huňka et al., 2011). The Council of SC Management Professionals (CSCMP) see SCM ss a management unit that is engaged in the planning and undertaking of activities that are concerned with the sourcing, procurement and transformation of raw materials and their distribution to end users. In a number of definitions, interrelationship is established between the partners that are involved in the process of SC. For instance, according to Slack et al. (2010), SCM is made up of activities that relate to the interconnections between those organisations that play a part in adding value to products and services—

whether upstream or downstream—that have the aim of delivering those products and services to the end user more efficiently.

In the word of Vitasek (2010), SCM is seen as that integrative function that is responsible for bringing those organisational processes—whether internal or across organisations—together and modelling them into high performing mechanisms that are aimed at making the manufacturing operations better. That is to say, SCM is that process that makes a buyer relate well with his or her supplier so that both work hand in hand. This will ensure that products and services are supplied according to what the buyer wants (Schwartz et al., 2008). According to Schwartz et al., (2008), the primary concentration of SCM has to do with the quality of delivery and this focus has been extended later on to include other things such as environmental issues that is aimed at making eco-efficiency possible whilst reducing the rate of wastage. As a result of this, SCM has been seen as a holistic approach of management whether within or outside the organisations involved (Wieland, 2021). To many SC managers, the ultimate aim is to satisfy the end user of goods and services. According to Schwartz et al., (2008), at all stages of the SC process, the aim is to satisfy the end user despite the fact that the end user might be very far away from that particular stage. A purchase decision by a buyer in an SC process will mean that all the other partners in the SC process have been called to action hence the money paid by the buyer passes through the partners. With every process in the SC, the customer involved is the focal point of satisfaction (Adam et al., 2020).

The concept of SCM has to do with bringing together all the partners in the SC process which comprises suppliers, intermediaries, third-parties and end consumers; whose interactions can either be direct or indirect in making sure that products, services, information or finances move from their point of production to their point of end usage. That is to say, in principle, SCM operates in the domain of supply and demand whether within an organisation or across several organisations (Harland, 2021). Ayer (2000) sees SCM as a subject that is as important as other subjects such as marketing, finance, and human resource management among others. Ayer (2000) posits that from the definition

of SCM, it is evident that the concept goes beyond the mere formulation of SC policies to its effective operation and maintenance in an organisation.

The main objective of SC therefore is to make both individuals and organisations more cost effective, that is, reducing the costs associated with the system, cost of transporting products, cost of distributing products, cost associated with the conversion of raw materials to semi-finished or finished products etc. With regards to the benefits of the consumer in SC, goods and services become readily available without stocks running out, products and services are always fresh and cost of transactions are greatly reduced (Omar et al., 2021). The producer is not left out in the SC benefits as he or she develops more market intelligence and maintains the required volume of stock. The producer is also placed in a better position to plan effectively and attains the position where products are not outdated. Furthermore, the producer generates more profits as a result of right investment and increased quality of goods and services. Finally, the producer gains a higher reputation and competitive advantage over competitors and above all, is placed better in the eyes of the stakeholders of the SC process (Grabs & Carodenuto, 2021).

2.3.3 Sustainable SC Management (SSCM)

The concept of Sustainable Supply Chain Management (SSCM) has been defined in various ways over the years with more concentration on the environment of SC, its social and economic effects on the lifecycle of products, services and information (Wieland, 2021). Hummels & Argyrou (2021) defined sustainability as "development that meets the needs of the present without compromising the ability of future generations to meet their needs". Also, Seuring and Müller (2008) advanced that sustainability of SC management occurs when partners along the SC cooperate in the management of resources, capital flows, and information in the interest of customers and stakeholders, taking into consideration all the dimensions of sustainability which includes economic, environmental and social factors.

According to Sisco et al. (2010), the overall aim of SSCM is the protection and sustenance of a more lasting environment, social and economic advantage of SC to all stakeholders involved in the process. This implies that if the SC process is not sustained, the products and services in question will be threatened. That is to say not until management is able to make sure the ever-changing environment of business is studied and actions taken to bring activities in tune with the changes, the concept of SC may suffer inefficiency (Qudrat-Ullah & Panthallor, 2021).

The concept of SSCM is very important because it impacts the whole of the SC process and network in terms of the environment, risks and wastages. The sustainability of the SC process has the potential to increase the level of profitability among firms (Jabbour et al., 2020) and in recent years, the concept has been discussed extensively by purchasing and supply professionals. Well established companies, especially those engaged in foreign trade see the sustainability concept as their way of contributing to the societal goals which gives them the much-needed competitive advantage over the other competing firms (Broccardo & Zicari, 2020).

SSCM is hence seen as the integration of the variables of the environment, society and economy in the SC process so that the economic conditions of the firm can become better (Govindan et al., 2020). It is therefore very important to monitor the whole SC network phase by phase so that resources are efficiently delivered to customers in real time. With SSCM, essential issues looked at are how the product is designed, by-products of the product, how the product life is extended, how the product life ends and how the product is recycled for other beneficial uses (Hazen et al., 2020). Arguably, when an organisation creates the culture of sustainability in SC, costs associated with transactions are reduced, new products are easily introduced and also the organisation gains competitive advantage over others in the market (Singh et al., 2020).

The concept of SSCM is captured under three main anchors namely, environmental, social and economic dimensions. From available literature, it is evident that these three dimensions of SSCM have close interrelationships. The interconnections between the three dimensions is commonly represented by either of two models. First, the three-nested-dependencies model which has three concentric spheres. In this model, the economic and social dimensions are seen as products of the performance of the firm in the environmental dimension (Roy et al., 2020) indicating the fact that the society is part of the environment and economic activities occur in the society. Based on this, it is argued that the quality of life that is the environment is a determinant of economic advancement (Willard, 2010). Thus, how effective organisations are in the society goes a long way to affect what they get from the SC network. If a firm institutes beneficial social processes and work conditions that are environmentally friendly, that firm is likely to perform better both in their levels of productivity and profitability. In criticizing this model, the concern was raised that during the just ended economic downturn, people's quality of life was affected negatively instead. Thus, the performance of firms economically is very important as compared to their social performance. Hence, firms that do not concentrate on their economic gains are yet to know how the "real world" works (Willard, 2010).

The second model of SSCM, that is the overlapping or the triple bottom line model identifies how interrelated the environmental, economic and social dimensions are. In this model, all the dimensions are very important as a weakness in one dimension makes the whole process unsustainable. Instead of urging firms to concentrate on either environmental or societal activities, the model rather prescribes that managers of firms implore activities that have the tendency to improve their economic performance whilst avoiding activities of the other dimensions that are not part of the dimension under consideration (Carter & Easton, 2011). According to Carter and Rogers (2008), this belief by management will result in a win-win situation. To Carter and Rogers (2008), this concept of SSCM is systemic, in that it leads to the achievement of the economic dimensions of the firm concerned. With this, the conclusion is that in the overlapping model, actions undertaken are spread under each dimension and no single dimension is

thought of as being more important than the other. Thus, no particular action under a particular dimension is regarded as the achievement of the overall SC process. At best all the dimensions are needed to attain internal harmony within the organisation.

Under this model, there is an achievement of sustainable SC when activities are undertaken under the social and environmental dimensions which has a bearing with the economic dimension in the bottom line. Here, there are essential areas of collaboration and performance in some selected dimensions but ultimately, actions must be taken under all the three dimensions. As a matter of fact, there are suggestions from scholars of SC that the concept of SSCM can only be realized when the process satisfies all three dimensions simultaneously. That is to say at all the stages of the SSCM process, the three dimensions of this model are present notwithstanding the gains made by agents economically (Sisco et al., 2010).

Carter and Rogers (2008) argued that in the triple bottom line model, the organisation gains as a result of reduction in cost of packaging, improved efficiency in product design, reduced safety and health costs and also, reduced turnover and cost of recruitment as a result of better conditions of work for the employees. Also, (Shim et al. 2021) further stated that the organisation gains from SSCM because employees become more motivated, less absent from work, shorter lead times, higher product quality, reduced cost of disposal as a result of meeting ISO 14000 standards and the ability to reuse products after the main use and these puts the organisation on a higher pedestal before both customers and suppliers. In simple terms, SC is that important connection that bring the firm's inputs and outputs together. Though the basic objective of SC is getting products and services to customers efficiently, pressure on firms to deliver greener products and services has forced them to adopt newer sustainable SC management which delivers more advantages to the environment and the society as well whilst making sure the firms become more profitable. The change from SCM to SSCM is reflective of the fact that SSCM delivers SC process that is profitable to all including the environment and society (Kaufmann & Carter, 2008).

2.3.4 Dimensions of Sustainable SC

In literature, the three main dimensions of SC that have been identified are economic, environmental and social dimension (Closs, et al., 2010; Kaufmann& Carter, 2008; Mann, et al., 2010; Sloan, 2010; Miemczyk, 2012; Winter & Knemeyer, 2013).

2.3.4.1 Economic Dimension of Sustainable SC

With the economic dimension of SC, the focus is on the levels of profitability of the stakeholders of the SC process not forgetting the economic gains made by the countries, regions and the communities of the stakeholders of the SC process (Sloan, 2010). Economic dimension therefore has to do with how well the firm has been able to use resources and how competitive the firm has been in order to be viable in its business activities. In the economic dimension of SSCM, concepts such as how efficient production has been, how efficient use of technology has been and how diversified the sources of income of the firm are important elements (Wanke et al., 2020). In the words, the economic dimension of sustainable SC has to do with looking at the economic gains of the SC process with the future in mind (Ozkan-Ozen et al., 2020).

An SC process is sustainable if it is able to produce goods and services constantly, maintain tolerable levels of debt and avoid such imbalances that has the tendency of impeding the industrial production process; hence, firms in foreign trade must be aware of this indication of economic dimension of SSCM. As a matter of fact, the economic dimension of SSCM of foreign trade firms goes beyond only profit for firms and extends to profitability of other companies and agents in the SC network (Alashari, 2020). According to Sloan (2010), four main categories of the economic dimension of SC identified are as follows:

- Economic Performance: order fills lead time, product defect rate, transportation cost per unit, productivity and market value;

- Financial Health: profitability ratio, cost of goods sold and returns on working capital;

- Market and Structure: degree of vertical integration, depth of supplier pool, breadth of customer base and market share;

- Institutions or Systems: regulatory compliance, standards certification and quality management system in use.

Mahler (2007) cited in Wong and Ngai (2021) argued that actions of the firm that are concerned with increased profitability, job creation, increased customer demand, lowering cost, dealing with both long- and short-term risks and still being competitive are some of the elements of the economic dimension of SSCM. Firms, especially foreign trade ones, use this dimension to bring out those strategies and actions that have the potential of giving them an advantage. The focus here is the efficient use of those resources and strategies to arrive at lasting benefits to all. In the case of firms that are engaged in trade, especially foreign trade, the economic dimension helps them to identify and use resources which will enable them remain profitable for a long time.

2.3.4.2 Social Dimension of Sustainability

Regarding the social dimension of SSCM, business organisations such as those engaged in foreign trade must endeavour to roll out fair SC practices that augur well with labour, communities and regions that are affected by the SC process (Sloan, 2010). The well-being of the stakeholders consists of the organisation being able to deliver state of the art labour services, making better the community by producing goods and services that are environmentally friendly (Singh & Misra, 2021). Social sustainability concerns essential issues such as how to reduce poverty among people and how to make the communities safe to inhabit (Kıvrak et al., 2020). Based on this, Sloan (2010) came out with three broad groups of social dimensions namely;

- Work place/Internal Conditions: wages, employee contracts, healthcare, opportunities for career development, number of accidents and/or deaths per person-hour of work

- Community/External Conditions: product liability and healthcare benefits

- Institutions/Systems: supplier evaluation including social factors, hours of safety training per employee, regulatory compliance, and health and safety management system in use.

Moreover, Buchter (2020) argued that for every social activity to be regarded as decent, it must be able to provide employees with secured jobs, lend respect to the employees especially their welfare, grant them access to information, consult them, dialogue with them and also give them the freedom to work. Schneider (2007) further posits that decent social activities should also have the objective of giving the employees realistic income and social protection. With all the above expositions, it is worth reckoning that the social dimension of sustainability comprises the fight for the rights of the employee, other individuals and corporate governance issues being handled well. An SC that is social sustainability compliant has enough equity in the network, diverse membership, interrelated activities, and above all members can afford quality life.

2.3.4.3 Environmental Dimension of Sustainability

Regarding the environmental dimension of sustainable SC, most decisions are aimed at preserving the environment so that human life can be adequately supported (Miemczyket. al., 2012). Businesses that want to have environmentally sustainable SC must endeavour to go beyond just making gains momentarily to the long-term positive effect on the world. Environmental sustainability SC therefore concentrates on those factors that help in protecting the natural world in the long term. The concentration of environmental sustainability is on the use of physical raw materials in the production process (Kaufmann & Carter, 2010) dwelling more on supporting the environment which is the source of

human existence. In protecting the environment, elements such as atmosphere, water, food, soil, minerals, materials and energy resources must be considered and be made healthy because human existence depends on these (Hou et al., 2020).

The concept of environmental sustainability is very crucial because the elements of nature that make life worth living are finite. When these elements are overused, they get depleted hence life becomes unbearable. The need therefore is to get these elements maintained so that they do not run out. What is essential is striking the balance between what the ever-growing population needs and how able the elements of the environment can support those needs without getting depleted—so that growth can be regarded as smart (Pohoață, 2020). With all these, the evidence is clear that when the environment is sustained, there is smart growth because it is the environment that provides mankind with the necessary resources to survive. If human needs must be satisfied at all times, then the elements of the environment must not get depleted but rather it must be made to flourish (Lourenço et al., 2020).

2.3.5 The Economic Value of a Sustainable SC

Many researchers have provided empirical evidence to the fact that when firms engage in sustainable SC practices, they are able to improve upon their own economic benefits (Kaufmann & Carter, 2010; Mefford, 2011). From available literature, firms gain from sustainable SC in more sales, less costs, less risks (Kaufmann & Carter, 2010; Mefford, 2011; New Zealand Business Council for Sustainable Development, 2003) and improved economic activities in the form of more profits and dividends to owners (Mefford, 2011; New Zealand Business Council for Sustainable Development, 2003).

In a research by Kaufmann and Carter (2010), sustainable SC management has a number of benefits to the firms. For example, firms stand to have improved economic performance, improved firm reputation and improved management skills when they are engaged in sustainable SC management. Similarly, Mefford (2011) argues that firms have good reasons to engage in sustainable SC management. More conspicuously, firms that

engage in sustainable SC management have increased sales because customers believe such firms are ethical (Mefford, 2011). In contemporary production theory, the observation is that when firms engage in sustainable business behaviour, they are more likely to cut down their cost of production whilst gaining some competitive advantage over others in the industry (Mefford, 2011; Kaufmann & Carter, 2010). Not only is there reduction of production cost but also employee behaviour is improved leading to higher productivity and increased profit. This is as a result of the fact that employees generally work better if they feel they have the support of management and also their conditions of work are good (Kaufmann & Carter, 2010; Mefford, 2011). When employees become motivated, they become proud and therefore work better for managers who practice sustainable SC (Kaufmann & Carter, 2010; Mefford, 2011). Many studies have also indicated the fact that sustainable SC has the potential of reducing the risk associated with finance (New Zealand Business Council for Sustainable Development, 2003; UN Global Compact, 2010). Though sustainable firms benefit directly from the act, Mefford (2011) posits that all the other stakeholders in the SC process benefit from increased profitability, reduced cost of productivity and lowered risks associated with finance as a result of the firm engaging in sustainable SC management.

2.4 Theoretical Framework

2.4.1 SCM Technology Use, Firm performance, and Entrepreneurial Orientation

The entrepreneurship, management and operations literature reveal a substantial number of scholars arguing that firm performance is also positively influenced by entrepreneurial orientation (Ripollés & Blesa, 2005; Fuentes & Gómez-Gras, 2011; Tseng & Liao, 2015; Bojica, Linton & Kask, 2017). Particularly, these studies suggest that firms with high level of entrepreneurial acumen observe high rate of performance, survival and business growth (Ribeiro et al., 2021). However, the relationship between entrepreneurial orientation and firm performance in the context of SC management technology adoption and use still require more understanding (Bojica et al., 2011). To appreciate this in the

context of firms in the export and import trade industry, this section presents and discusses prior empirical literature on entrepreneurial orientation.

Although Danny Miller (1983) is credited with introducing the concept of entrepreneurial orientation to the scholarly literature, he never used the term entrepreneurial orientation in his initial seminal 1983 article (cited Gupta et al., 2020). Nonetheless, knowledge of entrepreneurial orientation has significantly advanced since 1983 which necessitated the Special Issue of Entrepreneurship Theory and Practice on the topic (Gupta et al., 2020). Scholars (Ripollés & Blesa, 2005; Fuentes & Gómez-Gras, 2011; Tseng & Liao, 2015; Bojica, Linton & Kask, 2017) have defined entrepreneurial orientation in various ways. However, particular behaviours appear repetitive in most of the definitions advanced. For example, whilst Voss, Voss and Moorman (2005) defined entrepreneurial orientation as a firm-level disposition to engage in behaviours (reflecting risk-taking, innovativeness, proactiveness, autonomy, and competitive aggressiveness) that lead to change in the organization or marketplace. Pearce et al. (2010) conceptualized the term as a set of distinct but related behaviours that have the qualities of innovativeness, proactiveness, competitive aggressiveness, risk taking, and autonomy. To understand entrepreneurial orientation in the context of SC management and supply networks, there is the need for a deeper understanding of the three key entrepreneurial orientation dimensions.

Firm performance has been tried to be defined by many performance factors in many sectors from past to present (Yadegaridehkordi et al., 2020). As the evaluations performed for firm performance in the literature increase, the changes in the performance criteria and developments are observed. The concept of company performance, which is a significant evaluation criterion, is evaluated from the point of view of the companies in terms of efficiency in activities, competitiveness in markets, minimization of costs from the production process to the distribution and profit dimensions to be obtained as a result of the works performed. The measurement of the firm performance is an approach directing the determination of levels of performance of the companies, namely, efficiency in the business activities of the organizations and their use of financial and non-financial

resources, determination of the level of how they are able to perform the effectiveness and economic principles, the problems, which may be faced, and solutions to these problems (Moustaghfir et al., 2020). The firm performance is defined as the level showing how the companies compete at the highest level with their competitors in their business processes and how they achieve their goals at what stage as a result of these operations (Köseoglu et al., 2020).

2.4.2 SC Technologies and Customs Response

In the recent wave of technology adoption in copious business and public services activities, governments tend to leverage on the adoption of electronic customs platforms to facilitate regulatory compliance and information dissemination in their customs administration (Urciuoli, Hintsa, & Ahokas, 2013; Sen, Marijan, Ieva, Grime, & Sander, 2016; Adjei-Bamfo et al, 2019). From this background, international trade organizations such as the World Customs Organization (WCO) and World Trade Organization (WTO) consider e-Customs platforms as a critical strategic subject for customs administrations and governments globally (Holloway, 2009), largely to improve the quality of services provided to clients. Hence, to promote efficient resource use, information intensity about products and services, and smooth trade flow across international borders, it has become imperative to adopt IT systems to improve information provision to individual business, and with other government agencies (Urciuoli et al., 2013).

The role of customs response globally, have similar objectives of controlling goods crossing frontiers (imports, exports and transits), collecting duties and taxes, implementing trade policies, combatting smuggling and protecting the public. However, the precise mandate of customs will vary from one country to another, as other actors like commercial banks, private control agencies as well as other government departments, for example the Ministry of Finance or the Ministry of Interior, may participate in some tasks (Biondi et al., 2020).

Customs provision of adequate trade information about individual firm's goods is commonly known as Customs Response (Skocibusic, Drobac, & Sic, 2008; Holloway, 2009) which is what this particular section focusses on. This is usually signified by the code Customs Response Group (CUSREG). Skocibusic et al. (2008) underscored that Customs Response's message and process is based on United Nations/Electronic Data Interchange for Administration, Commerce and Transport (UN/EDIFACT). This is the international electronic data interchange standards developed by the UN to standardize international customs administration.

According to the directory, customs response refers to electronic data interchange between trading partners involved in administration, commerce and transport of goods across international borders (Skocibusic et al., 2008). Such customs response allows information and data to be transferred among customs administrations. Some responsibilities attributed to customs response in the area of information or data transfer include: i) acknowledgement of receipt messages; ii) indication of whether an information received is correct or if there are errors (i.e. accepted without errors, accepted with errors, rejected, etc.); iii) information to the sender of the status of the customs declaration (i.e. goods released, goods for examination, documents required, etc.); iv) transmission of additional information as agreed between the involved parties (e. g. tax information – customs and tax, quantity information, etc.); and v) response to marked messages (e. g. Customs Declaration Message(CUSDEC), Customs Cargo Report Message (CUSCAR), Customs Conveyance Report Message (CUSREP), Customs Express Consignment Declaration Message (CUSEXP)) (Skocibusic et al., 2008). The guide for implementing messages of the Customs Response Message (CUSRES) is also based on the recommendation of the World Customs Organization (WCO) user guidelines.

Customs response basically offer an electronic customs information system management use by customs administrators and government to improve information dissemination in custom administration. Leading empirical studies on electronic customs administration and custom response such as Raus, Barbara, & Roman (2009), Urciuoli et al. (2013),

Skocibusic et al. (2008) and Sen et al. (2016) suggests that factors such as ease of use and cost-savings are key driving factors for the increasing adoption of electronic and information systems in customs administration, whilst quality, trust and technical constraints pose as barriers. Specifically, in Urciuoli et al. (2013), cost-saving and ease of use were found as a driver for information sharing in customs administration. A substantial proportion of Customs delegates and officials who participated in the survey during the World Customs Organization (WCO) 2011 Annual Council meeting perceived their electronic customs platforms as easy-to-use and yielding huge cost-savings as the system offer them an enhanced risk management process and increased safety and security (Urciuoli et al., 2013).

Electronic customs systems have been adopted by various regional bodies such as the Scandinavians, the European Union (EU), and some African states (Eilstrup-Sangiovanni, 2021). For example, in the Scandinavian community, Sen et al. (2016) presents the perspective of the Norwegian Customs Directorate by examining data interaction coverage in a test database using the classification tree models to represent the domain of data interactions and test cases. Their study presents a framework for specifying conditional functional dependencies in order to increase the quality of data in relational databases (Sen et al., 2016). Raus et al. (2009) also studied the facilitators and barriers that influences the adoption of electronic customs systems in the context of the EU drawing on the Technological-Organizational-Environmental Framework and Roger's (2003) theory of innovation. Based on the analysis of data collected for a wide group of stakeholders, their study found that clarity, consistency and improved business processes among others, serve as drivers of standardized electronic customs solutions (Raus et al., 2009). Considering the above empirical review and discussion on customs response, there is no doubt that customs response plays a critical role in the SC management of firms involved in international trade and customs administration. Therefore, this present study also investigate how SCT adoption enhances custom response and firm performance.

2.4.3 Integrated SC Management

Another important factor identified in the literature as resulting in the adoption and utilization of technology in SC management is strategy and structure (Kumar et al., 2020). Many researchers (Muafi, 2020; Craighead et al., 2020; Cimini et al., 2021) have the conviction that the success in SC processes and other activities of an organisation will mean the organisation must be able to redefine its strategies and structure in order to meet the changes in the environment. The ability for a firm to align its SC activities with the structure of the organisation has now been seen as very important in the success of the firm (Sabahi & Parast, 2020).

The integration of the SC processes into the firm's strategy has the propensity to make the firm successful (Moyano-Fuentes et al., 2020). After the realization of management of a firm's efficiency gained as a result of availability of supply logistics such as technology, management will then align this with the overall strategy of the firm (Bag et al., 2020); hence, the firm's adoption and utilization of technology in SC processes. When firms realize the importance of SC integration and includes same in its overall strategy, the result is the firm adopting and utilizing more complex technology in information sharing (Khuntia et al., 2021). When members of the SC process have formed alliances, the resultant effect is adoption of IT technology to allow for a free flow of information. The availability of mission statement about logistics coupled with strategy has the potential to increase a firm's adoption and utilization of technology in SC (Baars et al., 2021). Thus, firms that have integrated SC management with firm strategy will be more likely to have assumed SC management practices and to have adopted innovative information systems.

Literature exists that point to the fact that sustainable SC has a significant positive effect on the performance of a firm. For instance, in the study by Hamprecht et al. (2005), it was revealed that when organisations concentrate on the triple bottom-line sustainability, the organisation will have better performance both in productivity and profitability. Hamprecht et al. (2005) found this positive link when they researched into the effects of

the use of the triple bottom-line sustainability model on the performance of the Swiss Nestle Company Limited. They came out with the suggestion that when firms are able to control the dimensions of the environment, economy and the society, the resultant effect is improvement in the SC process as there will be sustainable supply of goods and services. Hamprecht et al. (2005) critically observed how inputs flow from the entrance of the company into the production process and controlled those things that are connected to SC. Hamprecht et al. (2005) further argues that sustainable SC enhances alliance formation with other firms that make better the supply of products to those that need them. The researchers came to the finding that sustainable SC management leaders to the creation of alliances, improvement in quality of management and an urge to achieving change which are paramount in making goods and services available to the end consumer. On concluding the study, they indicated that when firms use sustainable SC, it does not lead to the acquisition of any new skill, rather it only leads to an enhancement in the capabilities of the firm.

Vasileiou and Morris (2006) investigated on how sustainable SC model of economic, environmental and social dimensions impact the delivery of goods and services among growers, merchants and retailers of potatoes in Britain. Vasileiou and Morris (2006) had the main objective of knowing how sustainable SC affect participants, how participants perceive the concept, how the concept changed over the years and also the drivers of sustainable SC. Vasileiou and Morris (2006) used interviews and postal survey to draw response from the participants in order to satisfy the hypotheses of the study. Respondents thought about how sustainability criteria was collected on decisions such as environmental pollution, business uncertainty, and profitability; the impact on external agents such as market and regulatory organizations on decision making; and the relative importance of factors which acted as constraints on performance such as labour supply, availability of natural resources and business uncertainty. Also, the researchers collected data on how the respondents think the organisation faired in sustainability practices. Vasileiou and Morris (2006) sent questionnaires to 1000 growers of potato whose names were provided by the British Potato Council (BPC). In addition, 28 potato merchants were

contacted and 8 retailers were also sampled. The results of the study showed that sustainable SC helps in upgrading the levels of skills of employees whilst improving the environment and also providing economic gains for the members of the SC process. Vasileiou and Morris (2006) on the issue of drivers of sustainable SC argued that their study revealed profitability, market requirements, food quality and climate as those factors on which sustainable SC revolves. They also found that though economic dimension of sustainability among actors was crucial, it could not be achieved on its own but rather with the other dimensions. Thus, they concluded that though the economic dimension of sustainable SC is important, it should be achieved hand in hand with the achievement of the other dimensions.

2.4.4 SCT use and organisational performance

Markley and Davis (2007) investigated how SC as a concept affects the performance of organisations especially in the area of giving them competitive advantage. Based on available literature in accounting, strategic management green products and SC, the researchers made a number of assumptions. Some of the assumptions they made included the positive effect of SC on the environment, the positive impact of SC on the ethical reputation of the firms, positive SC on stakeholder perception of the firm, positive SC on the profitability of the firm, positive SC on customer rating of the firm and positive SC of delivering competitive advantage to the firm. According to Markley and Davis (2007), these assumptions have been used to measure the financial gains of firms over the years. Using data collected from the firms involved, Markley and Davis (2007) concluded that firms that want to be successful must concentrate on achieving the ethical and social dimensions of SC management but not only on the traditional financial gains.

Carter and Rogers (2008) in their study that sought to find the effects of a firm's SC process on its performance found that three elements are crucial in delivering a sustainable SC and these include economic, environmental, and social. Carter and Rogers (2008) also in addition to the traditional three dimensions, asserted that concepts such as risk management, transparency, strategy, and culture should be of significant importance

in the SC management process. Respondents used for the study were 35 SC managers selected from 28 companies in USA and Germany. Carter and Rogers (2008) concluded that though the concept of SC is rife among a number of SC management practitioners, the concept is yet to be made sustainable.

Awaysheh and Klassen (2010) studied how sustainable SC management impact the performance of firms and how the use of technology in SC affects the environmental dimension of sustainable SC. In their work, they also tried to develop measures that will help make SC managers more socially responsible. They collected data from three separate companies in the food, chemicals and transportation equipment subsectors. They considered the diversity of these companies in terms of competition, reputation and work pressure. They used questionnaires as an instrument for data collection. In total, 1,209 questionnaires were distributed. From the research, it was found that the distance between organisations, that is, the number of tiers in an SC process has significant relationship with the use of multiple supplier socially responsible practices. This implies that as the levels are more in the SC process, more stakeholders would have to be involved and this leads to the organisation concentrating more on the social dimension of SC management. They also found that organisations that are upstream have been found to use more code of conducts for suppliers than those organisations that are downstream. The researchers finally concluded that organisations adopt more socially related dimensions if they want to discover new opportunities and also make the stakeholders in the SC process more satisfied.

Ross et al. (2012) investigated how elements of SC such as infrastructure for logistics including technology, differences in trade and social and environmental factors affect the performance of companies across 89 countries. The researchers used data for the study from the database of the World Bank and International Monetary Fund. Ross et al. (2012) used Data Envelopment Analysis (DEA) to measure the levels of efficiency in the various countries and ANOVA to compare the connections between SC infrastructure including technology, environmental sustainability and development. Ross et al. (2012) made

variables for the input dimension taking into consideration how long it takes products to be cleared, employee's salary, indirect costs and the extent of CO2 emitted into the environment. With the output dimension, Ross et al. (2012) considered the effects on the society and environment not excluding the indirect costs. From the research, it came to light that 56 countries out of the total 89 countries were confirmed to be efficient in the use of technology in SC and its impact on the environment. Most of the countries in Europe that were used for the study were found to have at least 78.8 percent efficiency with regards to how well they have been able to manage the environment taking notice of how technology use in SC affects it. Ross et al. (2012) contended that the efficient use in the input variables of those countries have resulted in these countries recording higher returns and also favourable balance of trade. Implied in this is the fact that when the infrastructure including technology in SC is implored well, firms and countries tend to gain more returns and also have good reputation. The researchers also found that 33 out of the 89 countries used for the study had deficiencies on the issue of applying technology in their SC process whilst maintaining viable environment. The conclusion by the researchers for that matter is that firms and organisations must use technology in SC for increased financial and non-financial gains but these technologies must be environmentally friendly so that the environment is not depleted.

Kaufmann and Carter (2010) investigated how sustainable SC including the use of technology can result in fostering a lasting environment whilst delivering long term profitability to the organisations involved. This study was carried out across a number of industries including the automobile industry, chemical industry, pharmaceutical industry, and consumer goods industry selected from developing countries. As a main objective, Kaufmann and Carter (2010) sought to find how sustainable management of SCT impact the performance of these companies and also what constitutes sustainable SC management. As part of the study, the researchers categorise technology use and sustainable SC management into groups namely: internal operations and supplier management. The researchers concentrated on the areas of technology use in SC management, working conditions, efficient use of resources and also societal needs to

measure how the firms performed internally. Kaufmann and Carter (2010) with this in mind assumed that firms that are financially sound are more likely to use technology in sustainable SC and also be environmentally conscious than firms that are not well to do. Also, they hypothesized that firms that have made huge investments in technology and sustainable SC are most likely to have advantages such as efficient production, capacity to innovate, improved status, appealing to potential workers and community support.

Walker and Jones (2012) in a related study explored how the use of technology and sustainable SC impacts the performance of the organisations and also the environment. They specifically investigated the drivers of the use of technology in SC and sustainable SC management in some selected companies in the United Kingdom. Walker and Jones (2012) had the aim of unearthing the differences in the firm's perception of the drivers of technology use and sustainable SC on firm's performance—not leaving out how the organisations differ in their ability to forecast their future SC management needs. The researchers adopted a qualitative approach to elicit information from the respondents. The researchers also made sure at least one senior manager from each firm was interviewed. Secondary data for the study was collected from annual reports, environmental/CSR policies, supplier evaluation questionnaires and internal newsletters.

Walker and Jones (2012) made sure data for the study was valid and reliable by using triangulation and the use of interview protocol. The results of the study revealed that drivers of SC sustainability included customer requirements, reputational risk, organisational factors including strategic, people and functional issues and stakeholder involvement (including NGOs and Government). That is to say, the aforementioned factors have a significant positive relationship with a firm's ability to adopt sustainable SC management practices. On the issue of technology use, Walker and Jones (2012) concluded that the drivers of technology include the size of the firm, extent of competition, perceived advantage and the complex nature of the task involved. Sustainability again has been argued to be driven by factors such as the ability of the procurement team that is, their ability embraces new skills such as the use of new

technology and new practices. Walker and Jones (2012) concluded that a number of organisations do not engage in sustainable SC management practices because of the following reasons: they think it is expensive, they do not have the right technology, their suppliers are not committed, and there is the existence of cultural barriers and accounting methods. The researchers finally recommended that firms especially global ones must learn to embrace technology in their SC processes since it is the surest way of getting work done but care must also be taken to protect the environment by engaging in sustainable SC management. This is because it is the only way the environment can the taken care of from the harsh realities of business operations.

Bask and Kuula (2011) conducted a study on how the uses of technology and SC management impact the environment using Nokia Corporation as a case study. The researchers concluded from the study that the use of technology has a significant positive relationship with the economic performance of the firm. That is to say when firms use technology in their SC, they have ready deliveries that offer satisfaction to the end user. Bask and Kuula (2011) also found from the study that Nokia Corporation understood the concept of SC that is sustainable; hence, the corporation has been able to perform creditably under all the aspects of environmental sustainability.

Under supplier management, Kaufmann and Carter (2010) assessed how firms faired under three main headings namely; selection, monitoring and development of supplier. The researchers developed hypothesis based on the fact that there is a significant relationship between firms that use technology in sustainable SC management and competitive advantage gained by suppliers in terms of how they perform, their capabilities, their management skills and their company reputation. From the study, it was revealed that a number of companies mostly those from the chemical industry concentrated more on variables such as working conditions and safety whilst those companies from the consumer goods industry also concentrated more on working conditions and the environment. From the results of the study, Kaufmann and Carter (2010) suggested that managers of firms engaged in SC should make use of technology

that has less effect on the environment for ultimate performance since the elements of the environment are essential to the existence of the firms. Also, they recommended that managers should think of marrying the concepts of sustainable SC and the use of technology since both must move hand in hand so that optimum level of profitability is attained and the environment is taken proper care of.

2.4.5 Sustainable SC and SCT use

Golini, et al. (2012) sought to investigate the relationship between sustainable SC, technology use in SC and programs intended to improve SC management in organisations. Golini, et al. (2012) hypothesizes that when firms engage in technology use in SC and sustainable SC management, it will significantly impact their environmental and social performance. To test the hypothesis, Golini, et al. (2012) used data collected from the fifth edition of the International Manufacturing Strategy Survey (IMSS) in 2009 on 400 manufacturing companies around the world. The researchers gathered data on variables such as the size of firm, its production network, its strategy for competition and its performance. The researchers used an exploratory factor analysis for the initial factors of the study. Instrumentation for the study was tested using Bartlett's test of sphericity and Kaiser-Meyer-Olkin measure of sampling adequacy. Golini, et al. (2012) made use of linear regression to get the outcome. Two models were made use of by the researchers. In the first model, the researchers sought to find how technology use and sustainable SC impact the operations of the firm over the last three years. The second model sought to find out how the firms performed financially in comparison with other firms after they had introduced SC improvement programs. In the two models, the variables of size, GNI and CSR were controlled.

The study showed that the other two controlled variables, that is GNI and CSR have significant impact on the performance of the firms. That is to say, the more socially responsible an organisation is, the more profitable the organisation becomes. Since social responsibility has to do with the organisation rectifying problems caused by the environment, it is expedient to conclude that when organisations practice sustainable SC

management alongside the use of technology in SC, the environment will be protected whilst the organisation records improved financial performance. Golini, et al. (2012) also concluded that SC management improvement programs by firms result in the use of technology in SC management and sustainable SC management practices which impact positively of the financial aspect of the organisation as well as the non-financial aspect of the firm which includes the environment and the firm's reputation. Golini et al. (2012) finally recommended that companies that are global must employ technology in SC and practice sustainable SC as these two have the potential of impacting positively on the performance of such organisations. Technology they claimed results in prompt delivery of products and services to the end consumer; hence, items reach the end consumer in real time.

Colicchia et al. (2011) also investigated the concept of sustainability in SC and the use of technology and how it impacts the operations of such organisations that engage in it. The researchers also sought to find how the organisations set up priority in the areas of sustainable SC and technology use and how these affect the environment in which the organisations operate. Colicchia et al. (2011) made use of ten well known multinational companies which includes Coca-Cola HBC, Electrolux, Henkel, Ikea, Fiat Group, Kimberly Clark, Levi Strauss & Co, Nestlé, Pirelli and Tenaris for the study. These companies were selected based on the fact that they are inclined towards green initiatives, located in many countries, use a lot of technology and also, operate in environments that are very critical.

The researchers used a prolonged research methodology to achieve the objectives of the study. The authors, first of all, made a framework that identifies the firm's propensity to adopt technology and engage in sustainable SC based on available literature. The framework had five categories namely: green procurement, internal SC, external SC, warehousing and technology use in SC and product design. Secondly, Colicchia et al. (2011) applied the framework designed to investigate the available environmental reports of the companies. From the internet, the companies' current initiatives as to protecting

the environment could be assessed. The reason for assessing the current initiatives of the companies with regards to environmental protection is to gain some insight into how the companies operate.

Thirdly, Colicchia et al. (2011) lessen the number of companies to three including Coca-Cola HBC, Electrolux and Nestle for interview to be conducted on how their technology use and sustainable SC management impact their environment. After the analysis, the results point to the fact that more technology is used by organisations at the production level of the firm's operations than at the SC end user level. Also, the use of technology positively impacts the introduction of new products and helps in getting products expediently to the end user. The results also showed that the organisations have been doing a lot to control the effects of technology use on the environment and this results in environmental improvement though some costs are associated with the use of the technology. Colicchia et al. (2011) are of the opinion that as more and more firms have taken to the use of technology in SC management, quiet a significant number of them are engaged in sustainable SC management practices that has been responsible for improving the environment considerably. From the work of Colicchia et al. (2011) both the academia and industry have benefits because they are able measure design and monitor how the use of technology and sustainable SC management affect the environment of business and the organisations that are engaged in such practices.

Morali and Searcy (2010) studied how technology use in SC management and the concept of sustainable SC management have been understood among a number of firms. The researchers aimed at five important issues on the sustainability of SC in organisations. For these researchers, they sought answers to questions such as: what are the minimum acceptable standards for SSCM? Where in the SC does a company's accountability stop? How can suppliers be encouraged to be more sustainable? How can effective use be made of technology in the SC process? Morali and Searcy (2010), analysed data for the study by looking at the reports provided by the organisations on how SC is governed,

strategy/policy, monitoring/standards, performance indicators, supplier collaboration and management's commitments.

Morali and Searcy (2010) made sure no report used for the analysis was more than three years old in order that they are able to see the new trends in the use of technology in SC management and sustainable SC management practices. They made use of 25 companies for the study. Morali and Searcy (2010) identified that most of these companies concentrated most on their levels of profitability. This resulted in having less focus on the environment and the society as a whole. The study showed that when firms use technology realistically in their SC process, they are likely to record higher profits and this is the concentration of most of the companies hence they cared less about how their use of technology affects the society and the environment negatively. Morali & Searcy (2010) further argued that the concentration on only profitability by firms using technology in SC implies that they have not fully imbibed the concept of sustainable SC management. Hence, much effort should be directed at the strategic and tactical managers of SC so that they have a paradigm shift from only firm gains to the larger gains of the society.

Calvalho & Barbeiri (2012) investigated how sustainability in SC has been related to technology use. The researchers attempted to establish the linkages between sustainable SC and technology use in SC and the link these variables have with the concept of innovation. Calvalho & Barbeiri (2012) used an interpretative approach to analyse data and to get the knowledge of how sustainability practices of organisations impact the ability of those organisations to imbibe technological innovations in the SC process. Data collection for the study was mainly through available secondary data and a semi structured interview guide. The researchers gathered data on the variables of politics in sustainable business, innovativeness of businesses, product development, efficient processes of production, organisational processes and environmental and social protection processes.

Calvalho & Barbeiri (2012) from the study argued that when sustainable SC processes are adopted in an organisation, it improves the way business organisations view the society and the environment which further leads to the development of a sustainable environment. It also, Calvalho & Barbeiri (2012) further contends, leads to the adoption of innovative ways of performing activities much easily as firms use technology that is environmentally friendly in carrying out their daily activities. The researchers therefore concluded that the use of innovative ways by the organisation to carry out SC activities that mostly involve the use of environmentally friendly technology does impact the performance of the organisation involved positively. These positive impacts can be seen in how the firms record higher returns and how they gain non-financially in terms of building sustainable business environment and also gaining better reputation in the eyes of the society in which the business is operated (Calvalho & Barbeiri, 2012).

Gnoni et al. (2011) sought to prescribe a more systematic approach firms can use in their quest to be sustainable in their SC processes whilst making sure the environment is not depleted. In the study, Gnoni et al. (2011) made an integrated model that contains variables such as Environmental Performance Evaluation (EPE) and Analytic Network Process (ANP). The model was then used to analyse the processes of a glass production company. The researchers used three main stages in the research: first being the definition of tools for measuring the environmental performance of firms. Second, the development of items of evaluating firm output in the whole network of SC and third, an assessment of essentiality of the SC process. Gnoni et al. (2011) argued that the third stage of the research was to check the consistency of the result of the second stage. Using the model, the researchers concluded that when resources are used in SC processes, there will be positive impact on the environment. The researchers suggested that more resources including technology that has less emission of CO2 should be used at the initial stages of the production process and that more resources in the form of technology should be used at the packaging stage so that consumer satisfaction could be enhanced. Gnoni et al. (2011), therefore, acknowledged the fact that the use of resources in the form of

environmentally friendly technology in SC processes has the potential to improve organisational performance whilst lowering any negative impact on the environment.

2.4.6 Sustainability Practices and Organisational Performance

Foster (2013) sought to investigate how sustainability practices in SC processes impact the performance of firms in the food industry. From his study, the evidence is that firms that engage in the use of technology and sustainable SC practices do earn higher returns apart from the normal reward of having innovative practices. Foster (2013) argues that the above statement has become the order of the day because in recent times, consumers have engaged in sustainable consumption hence firms that practice sustainable SC have the upper hand in the eyes of these consumers.

In the study, Foster (2013) used two main methods to analyse data. In the first method, the researcher did comprehensive analysis of literature from 19 academic journals. In the second method, the researcher searched for information from the existing websites of a number of companies in the food industry on how well they have engaged in sustainable SC. After considering the information on the websites of a number of companies, the researcher narrowed the number of companies to eight. Foster (2013) from the analysis of the results, observed that quit a significant number of organisations do understand the concept of sustainable SC management and a lot of them even concentrate on the three main dimensions: economic, social and environment. Forster (2013) therefore concluded that organisations that use the triple bottom line of sustainable SC management are more likely to have higher returns and improved environment because they are cautious of their actions on the environment; hence, they use the appropriate technology.

Mefford (2011) in his study gave reasons why organisations should engage in the use of technology and sustainable SC practices in their operations. The researcher contends that the use of technology and sustainable SC practices significantly impact the economic performance of organisations. In his study, Mefford (2011) identified a model of production that is transitional that shows how lean production and quality management

result in sustainable corporate behaviour which in the long run, translates into higher stock valuations. Mefford (2011) made a vivid description of three main channels. The first channel brings to the fore how sustainable SC and technology use affect the end users of a product. From this channel, the indication was that a number of end users of products prefer products from sustainable organisations; hence, firms that engage in sustainable SC and technology use have increased sales.

In the second channel, Mefford (2011) brought out the benefits of technology use and sustainable SC as they result in making the employees of the organisation more motivated to work. From the model as workers become more motivated, they become more than willing to improve upon their ways of doing things, particularly the use of technology; hence, cost of production drastically reduces. In the last channel, Mefford (2011) brought out the ethical considerations in SC as the researcher believes that this will result in augmented stock valuation through reduced financial risk. Mefford (2011) from the study concluded that when firms engage in technology use and sustainable SC practices, there will be higher quality products and lower prices. If higher quality products are offered at lower prices, then the ultimate is increased sales leading to better economic performance (Mefford, 2011). Sustainable SC does not only lead to the appropriate use of technology but also results in environmental protection and making the firm look good in the eyes of other stakeholders (Mefford,2011).

Closs et al. (2011) conducted a study to investigate how SC impacts sustainable value chain. For a main objective, the study sought to find how firms apply the concept of SC management in order to gain competitive advantage. Closs et al. (2011) used an inductive to develop the framework of the study. They gathered data for the study using interviews, observations, review of such documents from large global firms in the food, pharmaceutical, electronics and retail industries that have engaged in good SC management practices. The researchers coded the data and made it into the main dimensions of sustainable SC management. After this, the framework was presented to 24 executives of firms that are engaged in environmental sustainability SC management

and five resource persons in the academia whose main areas of concentration is how to sustain the environment by using the right technology in SC. This was done because the researchers wanted to validate the data. The researchers identified principal dimensions such as environmental dimension, ethical dimension, educational dimension and economic dimension. Closs et al. (2011) concluded from the study that all the four dimensions identified are very important to the achievement of optimal performance by the firms hence proper steps should be made to integrate these dimensions into the traditional dimensions. On the use of technology, Closs, et al. (2011) argues that it results in making better the performance of firms in the SC process. However, Closs et al. (2011) suggested that absolute care must be taken in the usage of technology since some types of technologies do impact negatively on some of the dimensions especially the environmental dimension.

Sammon & Hanley (2007) conducted a study to find out how companies can become better if they have resorted to good SC management practices such as right technology used and eco-sensitive SC management. The researchers concentrated on the effects of e-business on SC delivery. Sammon & Hanley (2007) used exploratory research design to unearth their objectives. Primary data for the study was collected by the use of questionnaires and interview guides and also documents of the organisations involved were analysed and triangulated to support data collection. Sammon & Hanley (2007) from the analysis of the data concluded that when organisations use e-business, their operations are normally transformed in positive direction. This implies that as a firm adopts technology in its operations especially in SC, its way of doing things becomes better hence such an organisation will have improved economic returns.

2.5 Firm Performance

Many success indicators in many industries from past to present have been attempted to describe firm performance (Yadegaridehkordi et al., 2020). The improvements in the success standards and innovations are noted as assessments for firm results in literature

grow. In terms of the business productivity of operations, competition in markets, cost-cuts reduction from the manufacturing to the sales process and the efficient aspects that can be accomplished as a result of the work, the principle of organizational success, which is a significant assessment parameter, is assessed (Cigoj, 2020). The evaluation of the business output is a method which aims to evaluate the performance levels of companies: efficiency in the business activities of organizations and the usage of their financial and non-financial resources; the level of efficiency and the economic values they should perform; and the challenges they face (Rezaee et al., 2021). Firms' success is characterized as the level of showing how firms engage in their business processes at the highest level with their rivals and at what point as a result of these operations achieve their objectives (Ciampi et al., 2021).

The definition of corporate performance is often correlated with the productivity of the organization; it should be differentiated (Baah et al., 2021). By presenting it in three contrasting concentric circles, they offer a straightforward picture of the spectrum of corporate success and business efficiency. The first circle covers the corporate productivity field where business success or company performance and financial performance happened. The second circle covers the actual sense of company performance, where business performance and organizational efficiency is referred to as more closely linked to the calculation of financial performance for resource impact, where the operating output domain itself is already extensive and multi-dimensional. The concept of success identified by stakeholder satisfaction may provide more concrete assistance in discriminating between context and performance effects. Firm success is specifically seen by partnerships (customer-stakeholder-perspective) (Särkkä, 2020). It can be assumed up that it is not only possible to assess firm output on the basis of financial metrics. There are social indicators, however, that must be considered in calculating firm efficiency (Signori et al., 2021).

2.5.1 Firm performance Measurements

Firm Performance (FP) is a measure of a company's success that considers not just its own capabilities and impacts, but also the market in which it finds itself (Gupta, 2021). There are several problems facing measuring FP, including uncertainty in choosing metrics and inability to achieve consensus (Giannakis et al., 2020; Chen & Lin, 2021). Considering the fact that findings are always more complex, a number of studies have analyzed FP on a single index with a one-dimensional interpretation (Schötz et al., 2020; Martucci et al., 2021; Perera et al, 2021). It is important to differentiate FP as a term from organizational efficacy in general. Firms must have exemplary support and satisfy consumer needs (Lim & Ok, 2021). Greater customer loyalty means a greater inclination to pay for goods and services and thus raises the value of the business (Izogo et al., 2020). In order to increase the management of knowledge-based processes (Collins & Hitt, 2006), it is recommended that firms rely more on short-term accounting elements and financial efficiency (Sundram et al., 2020). While financial metrics are a symbol of the economic priorities of a business, relative to non-financial indicators, financial performance alone is a restricted area (Vibhakar et al., 2020).

The current performance of companies is the first to be evaluated by investors all over the globe. At present, in terms of the possibilities to do business all around the globe, the world has gotten smaller (Kabadayi et al., 2020). As economic globalization benefits people all over the world, globalization has encouraged high success in industry. Progress and development are realized by lifting the obstacles to corporate commerce and capital activity; this can result in opening up better opportunities. Output assessment is very important for the successful management of the enterprise because without result measurement, progress of the operation is difficult. Organizational success thus includes assessments to assess the influence of organizational capital on group performance (Bilan et al., 2020).

Performance assessment refers to the measurement method of the efficacy and effectiveness of the intervention (O'Donovan & McAuliffe, 2020). Performance

assessment is the transfer into organized symbols of the dynamic reality of performance that can be linked and relayed under the same conditions (Ascione et al., 2021). Compared to quantification and accounting, output assessment is perceived to play a more important role in modern market administration (Venus et al., 2020). This is consistent with the performance management method defined by Bititci, Carrie and McDevitt (1997) cited in Zanon et al. (2020) as a process in which the company manages its performance to meet its organizational and functional goals and objectives. In addition, the valuation of the stock can be defined as the advantages that shareholders obtain from the shares of the company (Pernamasari et al., 2020). The company's reports can be seen by the financial statement published by the corporation. As a result, a high-performing firm will reinforce management's commitment to quality disclosure (García-Sánchez, 2020).

For successful management of any company, success assessment is crucial (Agarwal et al., 2020). Without evaluating the performance, process change is not feasible. Improving organizational efficiency thus includes steps to assess the degree to which company performance is influenced by the usage of organizational capital (Peng et al., 2020). The company's output is ultimately clarified by its progress over a given period of time. Researchers have increased attempts to recognize success definition metrics as a critical notion. Finding a measurement for the company's performance makes it easier to compare results over various time spans. Nevertheless, till date, no precise calculation has been suggested with the potential to quantify any output factor (Dieste et al., 2020).

Performance assessment can provide critical, invaluable knowledge to help management to track performance, report success, promote morale and coordination, and recognise concerns (Shahzad et al., 2020). It is also in the best interest of the company to determine its results. Nonetheless, this is a leadership field marked by lack of continuity as to what constitutes organizational effectiveness. The value of market success in strategic management can be divided into three components: theoretical dimension, analytical dimension and managerial dimension (Shahri & Sarvestani, 2020). Moreover, in performance evaluation, performance assessment is important. By calculating,

individuals may produce simplified numerical principles for their easy communication and behaviour from dynamic reality (Zhang et al., 2020). By calculating the prerequisites of good management, the simplification of this dynamic fact is carried out. On a related note, Bititci et al. (1997) concluded that performance assessment is at the heart of the mechanism of performance management and that it is necessary for performance management to act efficiently and effectively.

In philosophy, the idea of success forms the foundation of strategic management and, empirically, in their effort to analyze diverse strategic substance and process problems, most strategy studies use the construct of market performance. In management, by the various prescriptions given for performance improvement, the importance of performance is evident. Work on financial performance-related governance frameworks has been heavily focused on accounting-based metrics. Some experiments (accounting-based or market-based assessments) have introduced individual measurements. While there are standard performance metrics for many that apply to many areas, we tried to perform this calculation on corporate governance. Based on our reading of several posts, we can have almost metrics of business success from various viewpoints of interconnection and corporate governance as it describes below.

The countless ways in which financial success metrics have been established are: measurement of performance as the level of Return on Assets (ROA), Return on Equity (ROE), Tobin-Q, Profit Margin (PM), Earnings Per Share (EPS), Divided Yield (DY), Price-Earnings Ratio (PE), Return on Sales (ROS), Expense to Assets (ETA), Cash to Assets (CTA), Sales to Assets (STA), Expenses to Sale (ETS), Abnormal returns; annual stock return, (AR & ASR), Operating Cash Flow (OCF), Return on Capital Employed (ROCE), Labour productivity (LP), Critical business Return on Asset (CROA), Cost of Capital (COC), Market Value Added (MVA), Operation Profit (OP), Return on Investment (ROI), Market-to-book value (MTBV), Log of market capitalization, (LOMC), Growth in Sales (GRO), Stock Repurchases, Sales Per Employee(SPE), Return on revenue (ROR), Output per staff (OPS), Cost Per Service Provided (CPSP) and Cost

per Client Served (CPCS), Superior to cumulative abnormal returns (CARs), Profit Per Employee (PPE) and Return on Fixed Assets (ROFA) etc. Most of these proposed measures have been utilized by studies regarding governance

2.5.1.1 Accounting-Based Measurements

In contrast to the benchmark rate of return relative to the risk adjusted weighted average cost of capital, accounting-based calculation is commonly recognized as an important predictor of a business' profitability and organization. Accounting-based assessment metrics for the short-term performance of businesses in recent years, such as (ROA), (ROE), (ROS), (PM), (ROI), (OCF), (EPS), (OP), (GRO), (ROCE), (ETA), (CTA), (STS) and others are set forth below. The profit measure is criticized in terms of depreciation and amortization for its backward-looking aspect and its partial prediction of future events. The profit rate is calculated by the accountant, constrained by ethical guidelines, and is thus influenced by accounting procedures such as the different approaches used to determine tangible and intangible properties (Kapopoulos & Lazaretou, 2007). Often, ROA analyses the company's operating and financial performance as an accounting-based calculation (Klapper & Love, 2002). The measurement is such that the larger the ROA, the more efficient the use of assets for shareholder gain is (Haniffa & Huduib, 2006). The higher ROA also represents the successful utilization of its properties by the company in fulfilling its shareholders' economic interests (Ibrahim & AbdulSamad, 2011).

According to Hutchinson & Gul (2004) and Mashayekhi & Bazazb (2008), accounting-based success metrics present the result of management decisions and are thus favoured when analyzing the relationship between corporate governance and business performance over market-based indicators. As a consequence, a business displaying a good success by ROA reveals its achievement of high performance expected earlier (Nuryanah & Islam, 2011). In comparison, a negative entity suggests an expected high-performance loss that involves modification of plans to boost short-term performance. The unfavourable outcome results in the loss of investors (local and foreign). Therefore, if it is eager to succeed in the marketplace, the organization must change its targets from time to time.

2.5.1.2 Market-Based Measurements

The second form of measurement is a market-based measurement which as described in the earlier paragraphs, is classified as long-term, such as Tobin's Q, MVA, MTBV, RET, and DY. The market-based calculation is distinguished by its forward-looking nature and its representation of shareholder perceptions about the potential success of the company, which is based on past or present performance (Ganguli & Agrawal, 2009; Shan & McIver Ron, 2011; &Wahla, ShahSyed & Hussain, 2012). Tobin's Q relates to a typical indicator of long-run business success predicted (Bozec, Dia & Bozec, 2010). The usage of stock market valuation will present the potential growth prospects of the business that may emerge from exogenous variables to management decisions and this is demonstrated by the level of the company (Demsetz & Villalonga, 2001; Shan & McIver, 2011). In comparison, a high Q ratio reflects performance in the sense that the firm has leveraged its acquisition to build a company that is more valuable relative to its book value in terms of its stock value (Kapopoulos & Lazaretou, 2007).

In addition, market-driven business success projections will contribute to management motivations to change their holdings based on their expectations of future results. In addition, market-oriented company performance expectations can contribute to management incentives to change their holdings based on their expectations of the company's potential performance (Sánchez-Ballesta & García-Meca, 2007). As a consequence, if the market-based success of the firm is better than the findings of Tobin's Q, this implies that the company has succeeded in achieving its expected high performance (Nuryanah & Islam, 2011), but if it is less than Tobin's Q, then the company needs to update its strategies to increase its short-term performance. The negative success results in the loss of investors (local and foreign) and it is therefore necessary for the business to update its targets from time to time if it is able to succeed in the marketplace.

2.5.1.3 Other measurements

Some measures do not leverage on either accounting or marketing measurements, such as performance per employee, cost per service rendered and cost per customer served; Ii, Kankpang & Okonkwo (2012) checked these variables. There are some distinct variations between the two on the grounds of the aforementioned provisions of the benefits of accounting and industry-based measurements. Two main factors were illustrated by Demsetz & Villalonga (2001), where two metrics differ. First, accounting profit ratios are backward-looking measures (Shan & McIver, 2011), while Tobin's Q is defined as a forward-looking indicator of business efficiency. Accounting benefit levels are influenced by accounting procedures in this case and they emphasize the result of management. Tobin's Q also presents the importance attributed to investors to the tangible and intangible properties of the company on the basis of expected sales and expense sources.

The second distinction lies in the actual reliability of calculation. Accounting benefit metrics are also used by accountants who are restricted by accounting and transparency principles. The Tobin's Q test is also used (acumen, confidence and pessimism) by investors constrained by their expectations. Several analysts who are well aware of the market limits and not the accounting restrictions support Tobin's Q (Demsetz & Villalonga, 2001). Theoretically, scholars have observed that accounting-based metrics such as ROA, ROE, profit margin and others are used for the company's short-term success, while Tobin's Q calculates the company's market-based performance as a representation of potential long-term performance. Therefore, a simple vision of the firm is given by the merger between the two. Results are still inconclusive despite the commonly used portion of the measurements. Although others find a favourable relationship by accounting and market-based measurement between corporate governance and business performance, some revealed a negative relationship between corporate governance and company performance.

2.5.2 Firms in International Trade

Economists stress the comparative benefit of discussing the sources and effects of foreign trade, growing returns to scale and market love of variety, but pay comparatively little attention to the industries that currently drive trade flows. However, it is an incredibly unusual practice to partake in foreign trade: of the 5.5 million businesses working in the United States in 2000, just 4 percent were exporters. In these exporting companies, 96% of overall U.S. exports accounted for the top 10 percent. A vast number of longitudinal studies have provided a plethora of knowledge since the mid-1990s about the significant role companies play in mediating imports and exports from countries (Gao, 2020). This study focused on micro datasets that monitor the output and exchange of countries at the business level, reveals that exporting companies vary greatly from firms that represent only the domestic market. Exporters have been found to be bigger, more profitable, more skilled and capital-intensive, and to pay higher wages than non-trading companies in a wide variety of countries and sectors. In addition, even before exports begin, these disparities remain. Starting with Bernard & Jensen (1995), a broad literature recording these observations has appeared.

The exporter's ex ante productivity advantage implies self-selection: exporters are more profitable, not because of exports, but because the expense of joining the export markets can be overcomed only by the most productive businesses. Macroeconomic results may be affected by this sort of microeconomic variability. When trade policy barriers collapse or transportation costs decrease, exporting firms with high productivity thrive and expand, while non-exporting firms with lower productivity are more likely to struggle. This reallocation of economic activity through industries increases total efficiency and creates a non-traditional source of commercial welfare benefits.

2.5.3 Importing and Exporting

The observational literature on companies engaging in foreign trade was concerned almost entirely with exports, primarily because of restrictions in datasets focused on domestic output or production censuses. As a result, new heterogeneous business and trade hypotheses were developed to clarify facts regarding company export activity and produce little (if any) predictions for company import behaviour. Consumers buy imports directly from foreign companies in most models, and there are no indirect inputs, i.e., firms themselves do not import.

Exports is almost exclusively concerned with the observational literature on firms involved in international trade, largely because of limitations on domestic export or production census datasets. As a result, new heterogeneous market and trade theories were established to explain facts about the export operation of the sector and create little if any forecast for the conduct of company imports. In most models, customers purchase imports directly from foreign firms and there are no indirect inputs, i.e., companies do not import themselves.

One potential cause of the existence of imports in all industrial sectors, of the association between imports and exports, and thus of the similarities between importers and exporters, is the "international fragmentation of production," in which the production phases are distributed around national borders. This process is often referred to as "offshoring" or "slicing the value-added chain". Where certain manufacturing stages are carried out overseas, and others take place at home, businesses can manufacture and export respectively, as parts and finished goods are transported between nations. Moreover, as a company's volume of output grows, the amount of operation at each point of production rises, giving rise to a favourable association between firm imports and exports.

As for exports, the net number of imports declines in terms of distance and rises in sales from the source market. Similarly, the substantial margins of the number of undertakings and the number of commodities are again governed by the intense margins of the average value per undertaking per commodity, the distinction being evident, especially, in terms of revenue from the source country. Although the number of undertakings and the number of goods decreases in distance and rises in the income of the source country, the average value per undertaking per product again increases in distance (although the coefficient is not statistically important for imports) and decreases in the income of the source country, again showing the possible relevance of considerations of product quality. One noteworthy characteristic of the findings is that the magnitude of the gap coefficients for imports and exports is very distinct.

2.5.4 Imports and productivity in manufacturing firms

While in the recent literature on internationally engaged companies the reasons, implications and relationships with competitiveness play a prominent role, imports are seldom discussed. One example is in earlier research Bruegels (Mayer & Ottaviano 2007) on the internationalization of European companies with little treatment of imports. To begin with, it is claimed that the use of international intermediaries increases the efficiency of a business, but because of fixed import costs, only inherent in highly profitable businesses import intermediate. Imports are related to sink costs, since the import contract is followed by a search process for possible international sources, review of products, agreements, formulation of contracts, etc.

In terms of learning by importation, clear claims are being made for the causal impact on competitiveness of imports, as an enterprise is able to maximize worldwide specialization by sourcing and using its information and technology feedback from the forefront. Supporters of that opinion refer to foreign technology literature that advocates imports as a significant medium for transfer of information and technology. In addition, it enables a corporation to optimize capital and to specialize in operations with specific capabilities while importing interim goods.

Importers may increase competitiveness by the use of international inputs of superior quality or the extraction of technology in imports of intermediate and capital items. A variety effect is also stated (which leads to production efficiency with a broader range of available intermediates) and a quality effect induced by imported intermediates of higher quality than local ones. This will lead businesses to self-select exports and help boost their competitiveness on these markets if imports raise productivity, which can contribute to understanding why two-way merchants are the most profitable companies on average (Andersson et al., 2008; Castellani et al., 2010; Altomonte & Békés 2010; Halpern et al., 2005; and Muuls & Pisu, 2009).

2.5.5 Beyond Manufacturing: International trade and productivity in services firms

Although we have proof of the connections between foreign trade and competitiveness in manufacturing businesses, comparable knowledge for companies in the services sectors is sparse and of the recent vintage from a limited number of longitudinal studies conducted in the past 15 years. In their detailed study of systemic transition in industrialized countries, orgenson and Timmer (2011) are becoming more and more relevant in the services sector. The overview is identical to the one above for manufactured goods trading. Exporting was more profitable than non-exporting and we have proof that more productive businesses are self-selected in exporting services without proof of learning-by-export impact. Note, however that the approximate exporter productivity premium for Vogel & Wagner (2011) is statistically meaningful and economically important only if a conventional fixed impact estimator is used. When a robust estimator that takes care of the presence of extreme observations, or outliers, is applied, this premium drop to zero. At least for Germany, therefore, like in the case of manufacturing industries results are driven by a fraction of firms with extreme values in services, too. Related longitudinal study using corporate panel data from services sectors in other countries constitutes an important next step in this field research.

2.5.6 How Trade Liberalization Raises Industry Productivity

The welfare benefits from trading are attributed to specialization according to comparative advantage in the old commercial theory. The welfare benefits from globalization accrue from a mixture of economies of scale and the proliferation of commodity variations open to customers in the new trade theory. Empirical studies of firm-level trade liberalization, however, offer evidence of an alternate cause of welfare gains— that is, net growth in productivity led by the contraction and departure of low-productivity firms and by the extension and entrance of high-productivity firms into export markets. This reallocation of capital from low- to high-productivity institutions increases the productivity of the average industry. If the rise in commodity market competitiveness caused by trade liberalization contributes to lower sales mark-ups over marginal prices, such welfare benefits can be magnified. In this situation, the reduction in mark-ups and the growth in overall output all contributed to higher real wages and lower costs.

In an influential paper, Pavcnik (2002) finds that the comparatively greater longevity and growth of high-productivity plants is attributed to approximately two-thirds of the 19 percent rise in aggregate productivity following Chile's trade liberalization in the late 1970s and early 1980s. Related conclusions come from a vast number of studies in developed countries on trade liberalization measures, as surveyed in Tybout (2003). The resource reallocations within the industry discovered by these studies overshadow the resource reallocations around the industry emphasized by old comparative benefit theories. Therefore, in the labour market, compared to the gross changes in jobs induced by simultaneous job growth and loss within industries, the net changes in employment within industries indicated by a competitive advantage are minimal.

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The resource reallocations within the industry discovered by these studies overshadow the resource reallocations around the industry emphasized by old comparative benefit theories. Therefore, in the labour market, compared to the gross changes in jobs induced by simultaneous job growth and loss within industries, the net changes in employment within industries indicated by a competitive advantage are minimal. One concern is that the correlation between expanded trade and the relative expansion of higher-productivity firms in developed countries' output might not be motivated exclusively by trade policy adjustments, as trade liberalization is always part of a larger economic reform package. However, in reaction to decreases in trade barriers in both Canada (Trefler, 2004) and the United States (Bernard, Jensen & Schott, & 2006a), common trends of productivity increase from the growth of high-productivity exporting companies have been observed.

For instance, Trefler (2004) finds effects on industry productivity of Canadian tariff reductions that are approximately twice as large as those on plant productivity, suggesting reallocations of market share benefiting high-productivity plants. Bernard, Jensen & Schott (2006a) look at the capital reallocation implications of declines in U.S. exchange prices. They take a variety of dependent variables into account, including the chance of plant death. A calculation of trading prices, covering both duty rates and shipping costs at the industry level, is their main explanatory component. Controlling for a variety of other plant features, they find that plant death is more likely to occur as the cost of trade decreases, and that changes in the cost of trade have the greatest effect on plant death for the plants with the lowest productivity.

The association between trade liberalization and overall productivity growth is not limited to high productivity firms' relative growth and extension. One-third of the rise in gross productivity since Chilean liberalization in Pavcnik (2002) was attributed to in-plant productivity increases, possibly from the reallocation of capital through plant operations. Trefler (2004) presents qualitatively comparable facts, finding that the Canada-U.S. The

Free Trade Deal boosted Canadian processing plants' labour productivity by 7.4 percent or by a cumulative growth rate of 0.93 percent annually.

Bernard, Jensen & Schott (2006) also find evidence suggesting a link in U.S. data between declining trade costs and growth in in-plant productivity. One of their requirements uses the total factor performance of plants as the dependent variable. Changes in business exchange costs mentioned above are once again the main explanatory element. Changes in industry-level trade costs are adversely and strongly correlated with plant-level productivity growth in their chosen specification (column 3 of Table 6 of their paper), with one standard deviation decrease in trade costs (1 percentage point drop) suggesting a productivity rise of 2.3 percent.

2.5.7 Multi-Product Firms and Exporting

For the determinants of how many goods a business can manufacture and sell, current trade theories make little simple forecasts. Firm limits and number of goods are indeterminate in traditional old trade theory models, which are based on the expectations of steady returns to scale and ideal competitiveness. Typically, new exchange models assume that companies generate only a single type, horizontally separated. Similarly, most heterogeneous companies and trade models presume that a single variety is generated by each company. More recently, theoretical analysis has started to investigate models in which multi-product development is produced by diverse industries. "Such models find that trade liberalization causes endogenous changes in the scope of the company; for example, leading companies to drop marginal products to concentrate on their "core competencies.

Empirical analyses of trade liberalization, as noted earlier, indicate the value of business entry and departure in promoting the reallocation of economic capital through industries as trade barriers collapse. However, this emphasis on the development and dissolution of corporations can understate the true scale of reallocation after trade liberalization because surviving companies may enter and exit individual product markets. Bernard, Redding &

Schott (2006) offer evidence supporting the importance of within-firm reallocation in driving aggregate production growth, finding that net product addition and falling by surviving companies accounts for nearly one-third of the aggregate U.S. manufacturing growth between 1972 and 1997, a contribution that dwarfs that of business entry and departure. Along with the favourable associations found between the numbers of exports of the company's goods, the number of exports of the company's products per product, and the company's overall exports, these results mean that more attention should be paid to the relationship between foreign trade and the scope of the company.

2.6 The International trade environment

The market world is challenging and establishes a wide arena for trade facilitation. It is easy to count 60 or more different trading procedures that threaten goods, the vehicles that transport them (ships, aircraft and trucks, for example) or their operators (drivers, seafarers, flight crew, for example) (Grainger 2007a). Objects of regulation include accumulation of revenue; safety and security; climate and health; customer protection; and trade policy. A substantial proportion of these restrictions would be carried out in the majority of countries by customs or under customs oversight.

In foreign exchange, economic agreements are no less difficult. A variety of organizational phases are used in the international transport of goods. This involves packaging, shipping, transportation to the port, port entry and customs clearance, and loading into a ship prior to export. Off-loading, packaging, discharge from the port and customs clearance, distribution to the purchaser, unpacking, after-sales facilities (e.g., assembly, warranties and guarantees) and more are activities arriving at the destination port. Contractual responsibility for the actions may lie with one or the other side, based on the trade conditions between buyer and seller, or it can be separated somewhere along the way depending on the Incoterms used (ICC 1999).

In most instances a wide range of intermediaries will be employed to move goods. These include amongst others: transport operators, trucking and haulage companies, freight forwarders, customs brokers, banks and finance companies, insurance companies, port operators and stevedores, and IT systems suppliers. It is not unusual for intermediaries to further subcontract. For instance, a freight forwarder may subcontract to another forwarding company in markets where he has no staff. A haulage company may decide to subcontract on the day because his drivers are caught in traffic jams or otherwise tied up.

Compliance with customs and commercial procedures involves a strong degree of cooperation between the separate business agencies engaged in the transport of goods. Seldom would either group have a complete vision of all organizational measures or understanding of them. For e.g., the exporter can know what goods and at what price have been shipped to his overseas client. The packaging firm will know where these items have been stuffed in crates and in which ship the container has been booked. The freight forwarder and the shipping line will know will know when and where the goods have been unloaded. The customer would know the price they paid for the goods. Different types of data are generated at each point of the migration and different types of information are sent to customs and other government departments (often including the same or related data).

Trade processing costs arise any time one of the parties inside the SC is needed to send details to government agencies. These may be straight or subtle. Direct transaction costs include immediate enforcement costs, such as those relating to the compilation, manufacturing, delivery, publishing, faxing and retrieval of information needed for the preparing and submission of records (paper or electronic). Direct processing expenses also include fees and charges involved with the creation and funding of customs bonds and warranties, laboratory research and use, inspection, and paper stamping.

Many of the intermediaries also levy fines and fees. The port stevedore, for example, is likely to bill for the supply of a container to the customs shed. For their services, officers, hired to make customs declarations, will tax. A premium rate is expected to draw out-of-hours and fast-tracked activities. Indirect trading deals arise from border delays, confusion over processes and conditions, and commercial prospects that have been ignored or lost. Indirect transaction costs may usually be attributed to incomplete or conflicting paperwork, inspection facility congestion, lack of personnel (especially when operating beyond regular working hours), and unexpected situations, such as bad weather or disruption to infrastructure and facilities (OECD 2003; Grainger 2007).

Trade facilitation aims to remedy the costs of economic purchases. Trade facilitation acknowledges that all company and government exchange expenses are unnecessary and undesirable. Trade facilitation proponents would contend that its values will increase the productivity of firms, boost efficiency and monitor

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or disruption to infrastructure and facilities (OECD 2003; Grainger 2007). Trade facilitation aims to remedy the costs of economic purchases. Trade facilitation acknowledges that all company and government exchange expenses are unnecessary and undesirable. Trade facilitation advocates would contend that the ideals will boost the productivity of industry as well as enhance quality and regulation.

2.6.1 Customs and Trade Facilitation

There is unparalleled exposure to the idea of trade facilitation, and it is at the centre of various projects in the customs world. Trade facilitation has been a core component of WTO trade round talks. It is also referred to in SC management projects and is a part of many customs' modernization programs. In larger aid-for trade and capacity building projects, trade facilitation is also an important factor. The word 'trade facilitation' is used to a large degree by organizations trying to strengthen the legislative interaction between government bodies and national border traders. 'Simplification and harmonization of international trade procedures' is described by the WTO as: Where the 'activities, practices and formalities involved in the compilation, presentation, communication and analysis of data necessary for the transport of goods in foreign trade' are trade procedures (WTO 1998).

Trade facilitation is seen as a term within the field of SC security that can help strengthen controls and offset the increased pressure on legal traders. Trade facilitation offers a comparatively non-contentious and promising initiative in the non-tariff sector inside the WTO trade round negotiations. The OECD forecasts that each 1% saving in trade-related transaction cost yields a US$43 billion worldwide profit (OECD 2003). The donor group has not left this opportunity untouched.

In 2002 and 2005, donors contributed an annual total of US$21 billion to more broadly defined assistance for commercial initiatives (OECD & WTO 2007). Expenditure on unique trade facilitation programs grew from US$101 million in 2000 to US$391 million in 2006 (WTO/OECD 2008). In several customs' modernization projects, trade

facilitation is also a significant aspect. This is consisted in the Modernized Customs Code of the European Union and the vision for a paperless trade and customs framework (COM (2003) 452 final), the dedication of the Association of Southeast Asian Nations (ASEAN) to interoperable single window structures and large-scale IT ventures in Australia, New Zealand and elsewhere.

Although international organizations such as the WCO and the United Nations Economic Committee for Europe (UNECE) have developed catalogues of guidelines for trade facilitation aimed at improving the climate of trade and customs, their execution is fraught with difficulties and challenges.

2.6.2 Organisations with an interest in trade facilitation

To a significant extent, trade facilitation should be seen as an expansion of international trade liberalization activities. Trade facilitation is as experience indicates, not a modern practice. Many medieval European market cities, for example, will publicly display the units and measures used to sell goods. These steps can still be seen on display today in certain cities, such as Bern in Switzerland. In modern history, under the new foreign trade system, trade facilitation has been deeply founded. At foreign, federal, national and even local levels, organisations with an active role in trade facilitation are found.

The WTO involves foreign bodies where trade facilitation has been a major aspect of the Doha Trade Round. General Agreement on Tariffs and Trade (GATT) Articles V, VIII and X, covering freedom of transit, fees and formalities, and publishing and administration of trade regulations, are currently the subject of the discussions. UNECE, which has been the global focal point for guidelines, requirements and criteria for trade facilitation, is another very influential international body. The United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) is also home to UNECE. 33 foreign guidelines are taken care of by UN/CEFACT, the most recent being a Single Window (UN/CEFACT 2004) recommendation.

Different documentation and electronic messaging protocols, including United Nations Electronic Trading Documents (UNeDocs) and Electronic Data Interchange for Government, Trade and Transport, are also handled by UN/CEFACT (EDIFACT). UNECE is also home to international agricultural quality guidelines (UNECE 2006b), hazardous products classification standards (UNECE 2006a), and the International Road and Transport Union (IRTU) also has the 1975 International Road Transport (IRT) Convention (TIR 2005). The latter provides signatory countries with a streamlined customs transfer system.

The WCO is an active organization with an interest within the customs community in the area of trade facilitation. The WCO has drafted various instruments and guidelines containing the ideals of trade facilitation. The Kyoto Convention, which first entered into effect in 1974, and the Updated Kyoto Convention on the Simplification and Harmonization of Customs Procedures adopted in 2006, are notable examples (1999; WCO 2006). The System of Criteria for Protecting and Promoting Free Exchange, introduced in 2005, is another comparatively recent instrument that makes clear reference to trade facilitation principles (WCO 2005). The WCO is also the home of the definition and coding schemes of the Harmonized Product Code and in collaboration with the WTO, the WCO also helps ensure continuity in the technical understanding of the valuation and non-preferential rules of origin.

The International Maritime Organisation (IMO), the International Chamber of Commerce (ICC), the International Civil Aviation Organisation (ICAO) and the International Association for Standardization are other international bodies involved in the general area of trade facilitation (ISO). A 'Compendium of Trade Facilitation' was helpfully developed by UNECE and UNCTAD (United Nations Conference on Trade and Development), summarizing many of the international guidelines (UN/CEFACT & UNCTAD 2002). Organizations such as the World Bank, UNCTAD, the OECD and the United Nations Economic and Social Commission for Asia and the Pacific have already done a lot of trade facilitation work in terms of capacity building and economic growth United Nations

Economic and Social Commission for Asia and the Pacific (UNESCAP). A global network of practitioners and policy-makers – including a dedicated website – is maintained by the Facilitation Network for Transport and Trade and the UN Trade Facilitation Network of Partners.

Trade facilitation is an equally important agenda topic at the provincial level. The internal boundaries of its 27 countries have been effectively eliminated by the European Union, for example. They share one similar external tariff and adhere to the same customs law, functioning as a customs union. Currently, further reform is under way to revise customs procedures and to achieve interoperability between customs structures in Member States (TAXUD/477/2004 2007). The Union of Southeast Asian Nations offers another example of advancing regional cooperation through customs and exchange procedures Association of Southeast Asian Nations (ASEAN). Its members have committed to collaborate on designing single window applications that are interoperable (ASEAN 2005). There are also such international arrangements including a connection to customs and trading activities. There were 183 WTO-registered regional trade treaties in effect in 2005 (WTO 2005) The more prominent ones amongst these are the North American Free Trade Agreement (NAFTA), Mercosur in Latin America, and the Common Market for Eastern and Southern Africa (COMESA).

An equally relevant policy topic at the national level is the elimination in trade-related transaction costs. The policy goals of trade facilitation could be followed by national customs authorities, trade ministries or any other department of government engaged in the governance of the cross-border environment. In national best practice cases, many of the guidelines propagated by foreign agencies have their origins. For example, for single window ventures elsewhere, Singapore's pioneering Trade Net has been especially encouraging (Teo, Tan & Wei 1997; UN/CEFACT 2004). Many national customs agencies regularly aim to consult with their market partners to help identify trade cost challenges and potential solutions. There are also dedicated trade facilitation organizations in certain countries, so-called PRO commissions, which give a degree of

freedom from the restrictions frequently encountered within government agencies (UN/CEFACT 1974).

2.6.3 Implementing trade facilitation

For others, the advantages of trade facilitation and lowered business-government transaction costs are self-explanatory. Customs administrations are facing ever-increasing amounts of trade and are also obliged to add additional levels of regulations, for example, in the protection region, at the same time (Grainger, 2007). Concepts of trade facilitation help customs administrations discharge their obligations. Similarly, there are very fluid company SCs and no two SCs tend to be the same. Any decline in trade-related transaction costs would yield an edge as firms negotiate in terms of costs. Thus, transaction costs threaten the productivity of industry and hinder the best use of scarce regulation tools by Customs. However, the application of trade facilitation principles is often fraught with problems, considering the immediate value of trade facilitation for both industry and government organisations. Much of these may be attributed to competing desires, structural pressures and lack of understanding.

2.6.4 Conflicting interests

The successful introduction of trade facilitation measures is complicated by several cases of competing interests. There are points of tension between government and market stakeholders; state, national and foreign interests; government agencies (e.g. customs and veterinary inspectors); policy priorities; industries; countries (e.g. with separate legacy structures or providers of IT systems); and trade policy patterns between liberal and protectionist (Grainger, 2008). Many trade and customs procedures impose a particular duty on the merchant, to provide some examples. The partnership is described as one between enforcement and compliance. While the language of trade facilitation is high in both camps, in an atmosphere where the worst is often expected, more compliance officers have been educated. It is difficult to give up the presumption that any trader is a possible smuggler or realize that most traders have valid intentions. On most boundaries,

evidence of ineffective hard handedness will easily be detected. For e.g., 19% (N=131) of respondents confessed to deliberately diverting traffic to an alternate port in a survey of UK importers due to real or suspected variations in the implementation of rules and procedures (Grainger, 2007).

Another field generating contrasting interest could be the incompatibility of protocols with local operating activities. Customs, on the one hand, need to follow the rule; on the other hand, will find that it is not optimally defined to satisfy the market stakeholders' organizational needs. For starters, when x-ray scanning was adopted by UK Customs, port operators were required to supply merchandise to the x-ray facilities. This was not much of a concern at container ports, where the port operator owns the handling facilities. Many RO/RO ports, however, do not have any facilities for cargo handling. It is customary for lorry drivers to drive straight from the ship at these ports; or, if rolled off to the quayside, for carriers to come and pick up the goods.

With the advent of x-ray machines by Customs, truck drivers and haulers were no longer allowed to only exit the ship and travel from the terminal. They need to divert to the customs x-ray facility when chosen, causing delay. The limits on maximum working and driving hours can also compound this wait. This example shows the differing interests of operators of container ports and operators of RO/RO ports. The above may not object to x-ray facilities presenting products, while the latter face a major operating pressure.

Conflicting priorities in the shape and type of the trading landscape may also occur from overlaps between the actions of various government departments. For example, the avalanche of recent SC security controls may be characterized as 'safety spaghetti' (Grainger, 2007a) where identical protocols with similar monitoring targets are implemented by multiple government bodies. While a more organized and streamlined solution may be advocated by trade facilitation principles, minimizing the degree of duplication and overlap, government agencies are likely to be prone to letting go or taking on new pieces of turf.

A similar issue of competing preferences may be triggered by different political priorities. The 'electronic customs initiative' of the EU, for example, was initially pursued as a trade facilitation initiative (COM (2003)452 final). The reform initiative, however, was met with political pressure to fast-track security components of the SC. While the protection measures of the transition project are now being introduced, much of the promised reform concerning larger standards of trade facilitation remains in effect (Grainger, 2008).

The challenge of introducing trade facilitation is often contributed to by competing and contrasting business priorities. Companies are rarely able to communicate in a single accent. Competing with each other are different firms as well as sectors. Although all share a shared interest in cost savings, various businesses and sectors will be impacted in various ways by any regulatory change. And if net purchase rates are lowered, it could still be that those would miss out. For example, a number of studies have shown that when complying with trade and customs procedures, economies of scale are at work (Verwaal & Donkers, 2002; 2003; Grainger, 2007).

The fixed cost is a significant part of the expenditure required (for example, purchase of specialist IT systems and employment of dedicated staff). Firms with high volumes of trading deals have the highest ability to offset these fixed costs. In comparison, for businesses with lower transaction sizes, enforcement would be proportionately costlier. This latter community of traders would have more options to recruit the services of agents and customs brokers with higher volumes of transactions. Any improvements to operating cost standards (e.g. by more effective commercial practices) would have a significant effect on traditional business models. Subsequently, reactions to proposed reforms are likely to be somewhat different, even though trade facilitation is the end-goal.

2.6.5 Institutional limitations

Within the field of trade facilitation, certain structural shortcomings may be found. In its heart lies a tension between day-to-day corporate practices and the frameworks used to manage the business climate. While the former is very complex and will shift from one

transaction to the next, the latter is incorporated into the larger regulatory system. As such, it would take time for any regulatory change that accommodates trade facilitation principles. Issues found at the local level (e.g. in the sense of day-to-day port operations) need to be extended to national (e.g. national customs offices), federal (e.g. regional bodies such as the EU) and foreign policy (e.g. WCO, UNECE and WTO) levels) (Grainger, 2007). There are also theoretically revolutionary alternatives in the absence of a welcoming regulatory system, such as the single window model. It can be difficult to bring them in order.

Legacy deals may be similarly daunting. Any modifications would incur costs. Stakeholders ought to be persuaded that the relocation expenses are in line with the gains. Convincing stakeholders is a challenging job—considering the apparent competing desires. Significant political capital and expertise are also needed to help conquer initial opposition. The required political support, however is not readily obtained. Customs and exchange processes are often considered to be overly technical, and it is difficult to present their underlying nuances. It can be a challenging challenge to gain the requisite political support unless the driver is as emotional as 'defense',' competition' or 'growth'. Proponents of trade facilitation also need to resort to intense lobbying within the halls of influence within industry and customs and repeatedly make their case.

While trade facilitation has gained considerable traction as an agenda item lately, in most countries it does not really have a 'house'. A few nations have a dedicated organization for trade facilitation. Trade facilitation within other companies is one of the overlapping agenda points. Subsequently, many of the innovations and principles for trade facilitation can easily be forgotten. Grainger (2008), for example, has argued that trade facilitation is about reducing the expense of purchases. For both company and government partners, this has significance. Trade facilitation, however, is also seen by propaganda in the customs world as the reverse of regulation, failing to consider the advantages to customs administrations (e.g., improved data efficiency, more targeted monitoring and better use of scarce resources).

Even where competing priorities and initial structural obstacles have been resolved, more institutional problems remain plagued by the introduction of trade facilitation. Most customs administrations, for example, discriminate between 'regulation' and 'operations'. If the former investigates larger trade governance issues (usually based in the capital), the latter is responsible for the application and execution of trade procedures (usually located at the ports and borders). With trade facilitation, which aims to address organizational frustrations and transaction costs, it is important to be acquainted with operational practices for those concerned with regulation. It can be difficult to find the appropriate mix of interactions when there is a broad difference between 'operations' and 'regulation'. This will seriously hinder efforts inspired by trade facilitation.

The way many customs administrations rely on third-party IT suppliers' services is another example of contradictions between operations and regulation. As outlined earlier, many advocates of trade facilitation see information technology advances as an incentive to revise regulatory regulations and trade procedures. However, it becomes very difficult to approach the government while the IT capabilities are with third parties. Changes to electronic technology also require customs administrations to rethink their supplier contractual arrangements. In complicated acquisition (or donor) processes, these are frequently mixed up.

In addition, the interests of incumbent IT manufacturers may not always be consistent with the goals of harmonization and standardization of trade facilitation. By using proprietary standards and systems, incumbent IT vendors also benefit from exclusive commercial agreements and business control. These incumbents are likely to face greater competition and decreased profit margins within a more harmonized and streamlined IT environment. This is as a result of possible challenges from lower-cost 'off-the-shelf' solutions and open-source projects (such as UNCTAD's ASYCUDA (United Nations Conference on Trade and Development’s Automated System for Customs Data) customs software).

2.7 Operational performance and control variable

2.7.1 Firm size on performance

Since the popular analysis of the “effect of size and growth” carried out by Gupta (1969), numerous studies have explored the effect of business size on company profitability. Size was discovered to be a critical factor in deciding the viability of the company by the judgment on the capital structure. After that many researchers in their studies included scale as one of the company's unique aspects. Most researchers have found in the literature that there is a favourable association between the scale of the company and the profitability of the company (Doğan, 2013). The company's size, technically, examines optimistic interactions with the viability of the company according to the economies of scale. When the company's size increases, bankruptcy expenditures decline. The size of the business should be strongly linked to the capacity to borrow, since potential risks of bankruptcy make up less of the value of bigger businesses than smaller corporations. In comparison, larger businesses have economies of scale in transaction costs associated with long-term financing that is not open to smaller companies.

Asimakopoulos et al. (2009) found that, calculated in terms of gross revenue, big businesses are more profitable relative to small firms. Because of the economies of scale, major corporations enjoy greater benefit and take advantage of negotiating product costs and production volumes. Another research by Lee (2009) also notes that the value of economies of scale offers greater profitability by reinforcing its finding of larger overall assets. Some other recent studies also provide positive proof of partnerships, such as the review of 39 listed Jordanian industrial firms by Shubita & Alsawalhah (2012) to analyze the impact of the capital structure on profitability as a control variable in Jordan over a six-year period (2004-2009). The findings of that analysis also showed that along with the control variables of size and revenue growth, profitability improves.

Akbas & Karaduman (2012) analyzed the effects of business size on profitability on companies operating in the manufacturing sector (listed on the Islamabad Stock Exchange

(ISE), Pakistan) for the period 2005 to 2011. The findings of this analysis have demonstrated that organization size has a positive influence on profitability. Doğan (2013) also analyzed the relationship between the size of the company and the profitability of the company in Turkey between 2008 and 2011 and summarized that there was a favourable relationship between size measures (total assets, net revenue and number of employees) and company profitability in all three models. In other words, as their size grows, the companies listed in Turkey have greater profitability.

Ghafoorifard et al. (2014) research aimed at determining the relationship between business size and age with financial results in Tehran Stock Exchange Listed Firms, Iran. The conclusion was drawn as there is a substantial positive relationship between company size and its financial performance. In comparison, the results of this analysis are consistent with the results of Akbas & Karaduman (2012), Kipesha & EhiOshio (2013), and Adeyemi & Enofe (2013).

Although there are some conflicting studies including Becker-Blease et al. (2010) and Banchuenvijit (2012). In the 109 Standard Industrial Classification (SIC) four-digit U.S. manufacturing sectors, Becker-Blease et al. (2010) analyzed the association between business size and profitability. This study showed that the association between size and profitability is industry-specific. However, the study also found that profitability is negatively associated with the number of workers calculated in terms of total assets and revenue for companies of a given size regardless of the form of the size profitability function. In the Banchuenvijit (2012) report, two categories of company sizes were used in terms of net revenue and total assets and some other explanatory variables to analyze the effect on three types of return on assets (ROA), return on sales (ROS) and return on equity (ROE) profitability metrics in Vietnam's listed firms. The outcome showed that the company's size is adversely linked to ROA in terms of total assets.

In addition to this favourable and negative interaction, some of the scholars found that the company's size had an insignificant effect on the viability of the company. In this way, Tzelepis & Skuras (2004) analysed the impact of capital subsidization on four dimensions

of companies' financial output, i.e. productivity, profitability, capital structure, and growth, with the particular size factor of the business. The research offers evidence that the scale of the company has a negligible impact on the success of the company. Khatab et al. (2011) explored the relationship between corporate governance and the success of twenty companies listed on the Karachi Stock Exchange in Pakistan. The company's success is calculated by two return on assets (ROA) and return on equity (ROE) metrics. And the outcome shows that the scale of the company's partnership remains negligible in all three versions. Consequently, as we consider these above conflicting results about the effect of the scale of the company on the viability of the company, it is still unclear and empirical analysis is required.

By using the panel co-integration approach between 1999 and 2007, Akinlo (2010) studied the long-run relationship and causality problems between company size and profitability in 66 companies in Nigeria. The analytical outcome revealed that a long-run steady state association between business size and profitability occurred. The short-run causal relationship revealed that the relationship between size and profitability was bidirectional. This meant that Granger's business size induced profitability and Granger's profitability dictated the company size.

Using Nigeria as a case study, Obehioye & Osahon (2013) studied the determinants of business viability in developed economies. The analysis was based on panel data from 40 randomly chosen companies spanning a 5-year period (2006 -2010). Return on assets has been used in their work to calculate performance and sales churn has been used to measure scale. In order to evaluate the relation between size and corporate profitability, the ordinary least square regression approach was used. A positive relation between the two variables is deduced from the analysis. Studies such as Denckić-Mijajlov (2014), which investigated the effects on firm's profitability from 2008 –2011 by using a fixed-effect regression study, of determinants of corporate structures such as corporate size, liquidity, debt, asset sales and ownership. Total profit and profit margins were used to calculate profitability while growth in revenue was used for calculating volume. The result

indicates that in Serbian listed firms there is a strong and important association between scale and earnings.

In the same way, the effects of organization size on profitability was analysed by Doğan (2013). Data was obtained between 2008 and 2011, using multiple regression and correlation techniques, from 200 firms on the Istanbul Stock Exchange. Dogan concluded that the relationship between size and profitability persists at the conclusion of the work. This corresponds to higher earnings in terms of asset return as businesses expand on the Istanbul Stock Exchange (ISE) (total assets, total turnover and number of employees).

2.7.2 Firm age on performance

Theories that predict how their age influences the success of a company can be divided into three different groups. A series of investigations indicate that older companies do well because of their greater maturity and the advantages of "learning by doing" (Coad et al. 2013, Vassilakis 2008). Younger businesses are also vulnerable to "newness liabilities," which are based on a variety of factors poorly understood which contribute to higher rates of failure (Stinchcombe 1965). A second strand of literature supports the opinion that older companies are performing better and implies that selection effects may occur as less profitable companies are obligated to leave the company, leading to higher average productivity in the cohort, even though the productivity of the individual companies does not improve over time (Jovanovic 1982).

It is possible to group hypotheses that forecast how the success of an organization is influenced by its age into three broad groups. A series of investigations indicate that older companies do well because of their greater maturity and the advantages of "learning by doing" (Coad et al. 2013, Vassilakis 2008). Younger businesses are also vulnerable to "newness liabilities," which are based on a variety of factors poorly understood which contribute to higher rates of failure (Stinchcombe 1965). A second strand of literature supports the opinion that older companies are performing better and implies that selection effects may occur as less profitable companies are obligated to leave the company,

leading to higher average productivity in the cohort, even though the productivity of the individual companies does not improve over time (Jovanovic 1982). "However, a third line of research indicates that ageing can have a detrimental impact on the financial output of businesses because of "inertia impacts," causing companies to become inflexible and have trouble adjusting to the increasingly evolving market climate in which they work (Barron et al. 1994). The association between the financial output of an organization and its generation, considering the equivocality of these current hypotheses, is a question that needs to be addressed empirically. In early observational research, company age and scale were also viewed as indices of the same phenomena in which younger businesses appeared to be smaller and vice versa.

Later on, in models analysing business dynamics from various angles, research began to explicitly use company age as an independent variable (Coad et al. 2013). There is a strong literature, for example, indicating a negative association between business age and growth rates. It has been reported that, provided they thrive, young businesses have higher overall growth rates (Ouimet & Zarutkskie 2014). There are also reports showing that market volatility and asset return fluctuations appear to decline as companies grow older (Adams et al. 2005, Cheng 2008, Pástorand Veronesi 2013). It has also been reported empirically that older companies have lower maintenance costs (Hadlock & Pierce 2010) and that rates of plant loss drop as companies grow older (Dunne et al. 1989).

In the literature, the topic of real viability of older companies has gained comparatively less coverage. In their research, Loderer & Waelchli (2010) used a dataset consisting of 10,930 listed US companies and covering the years between 1978 and 2004 to investigate the relationship between firm age and performance. Their observational studies found that their return on investment, profit margins, and Tobin's Q ratios deteriorate as businesses grow older. On the contrary, Coad et al. (2013) found that when analyzing the relationship between business age and output calculated by the ratio of income to revenue in Spanish manufacturing companies for the period 1998-2006, older businesses enjoy higher productivity and profits.

Compared to the United States or Europe, observational research focusing on developed countries are less frequent. Majumdar (1997) found in one such analysis that older firms had lower return on revenue ratios using a sample of 1,020 Indian enterprises. A research by Ghafoorifard et al. (2014) offered proof to the contrary, however. For the period from 2008 to 2011, the authors examined the correlation between company size, age and financial results in 96 listed companies listed on the Tehran Stock Exchange and reported a positive association between the age of a company and its Tobin's Q ratio. A favourable relationship between firm age and profitability was also reported for microfinance institutions in Tanzania by Kipesha (2013) and for SMEs in Uganda by Osunsan et al. (2015).

A small number of studies have explored the association between age and profitability for Turkish companies. Relatively small samples and brief time intervals were used in these experiments. Gurbuz et al. (2010) used panel data analysis in one of them on a survey of 164 business-year findings for real-sector businesses for the period 2005-2008, which did not prove a substantial association between company age and asset return. The research by Basti et al. (2011) that used panel data from a survey of 160 listed companies in Turkey covering the period 2003-2006 is also important. A favourable association between age and profitability metrics, including return on income, return on equity and simple earning capacity, was demonstrated by the results of the random effects model. On the opposite, between the years 2008-2011, Dogan (2013) observed a negative association between company age and return on assets running a multiple regression of data from 200 listed firms.

2.7.3 Export Experience on foreign trade firm performance

One measure of the degree to which an organization embraces its export activities is its years of export experience (Cuervo-Cazurra, Maloney & Manrakhan, 2007). Experience is one of the aspects found important to export practices in the majority of export studies (Majocchi et al., 2005; Eusebio et al., 2007). The longer a business exports, the better the export experience, and this will be an indicator, according to CuervoCazurra et al. (2007),

that the company has been able to continue its export activities. Therefore, in this review, in line with the aforementioned literature, export experience is assessed by the export years and is limited to this aspect. Citing Eaton et al. (2007); Freund and Pierola (2010); Iacovone & Javorcik (2010); & Albornoz et al. (2012), Knell & Pisu (2013) demonstrate that most new exporters do not survive for more than a couple of years, and those who survive grow or export new goods to additional markets. Research also reveals that surviving young exporters are entering more international markets than mature ones, and this makes a major contribution to their export success. According to Knell& Pesu (2013), the turnover of younger exporters is higher, and over time, remaining businesses have a greater churn of goods and destinations. Haltiwanger, Ron & Javier (2013) affirm that young companies are both more volatile and expand faster. This means that while they expand faster, in most cases, they are more likely not to support themselves, leading to low results and eventual closure.

For example, Berthou & Vicard (2014) point out that almost only one variable describes the strongest indicator of company performance: "the number of years the company has been exporting" and that no other company-level attributes, such as R&D speed, scale, or other export experience metrics, are of equal significance. For instance, the trade costs associated with a given barrier decrease as export experience increases (Berthou &Vicard, 2014), likely resulting in better results. This expertise helps companies to build capabilities and management processes that reduce foreign trade barriers. Export experience and the multiple success metrics are next addressed.

Small and medium enterprise (SME) exports contribute in different ways to the economies of many developed countries, such as job growth and poverty alleviation. Gross Domestic Product (GDP) growth is favorably linked to export growth (Van der Walt, 2007; Soontiëns, 2002; Leonidou, Katsikeas, Palihawadana & Spyropoulou, 2007; Okpara, 2009). The amount of exports by small and medium enterprises (SMEs) is not specifically understood in many developed countries. This is due to the casual nature of the operations involved in exports. The numbers and prices involved are often so minimal

that it is impossible to decide if the products are for industrial or personal use. It is also necessary to consider the success of small exporting businesses in order to schedule and execute effective support initiatives.

2.7.4 Firm Experience and Operational Performance

If a company acquires export expertise, its knowledge of export obstacles and threats is diminished (Sen & Haq, 2010), so it would have a greater view of the international sector. A research on South African exporting companies by Sefalafala (2012) showed that knowledge-based, social-based and technical skills are among the most important corporate success capabilities. Over time, when the business deals with international markets, these talents, expertise and experience begin to be acquired. As demonstrated by Zahra et al. (2009), Amornkitvikai et al. (2012), knowledge and skills accumulation.

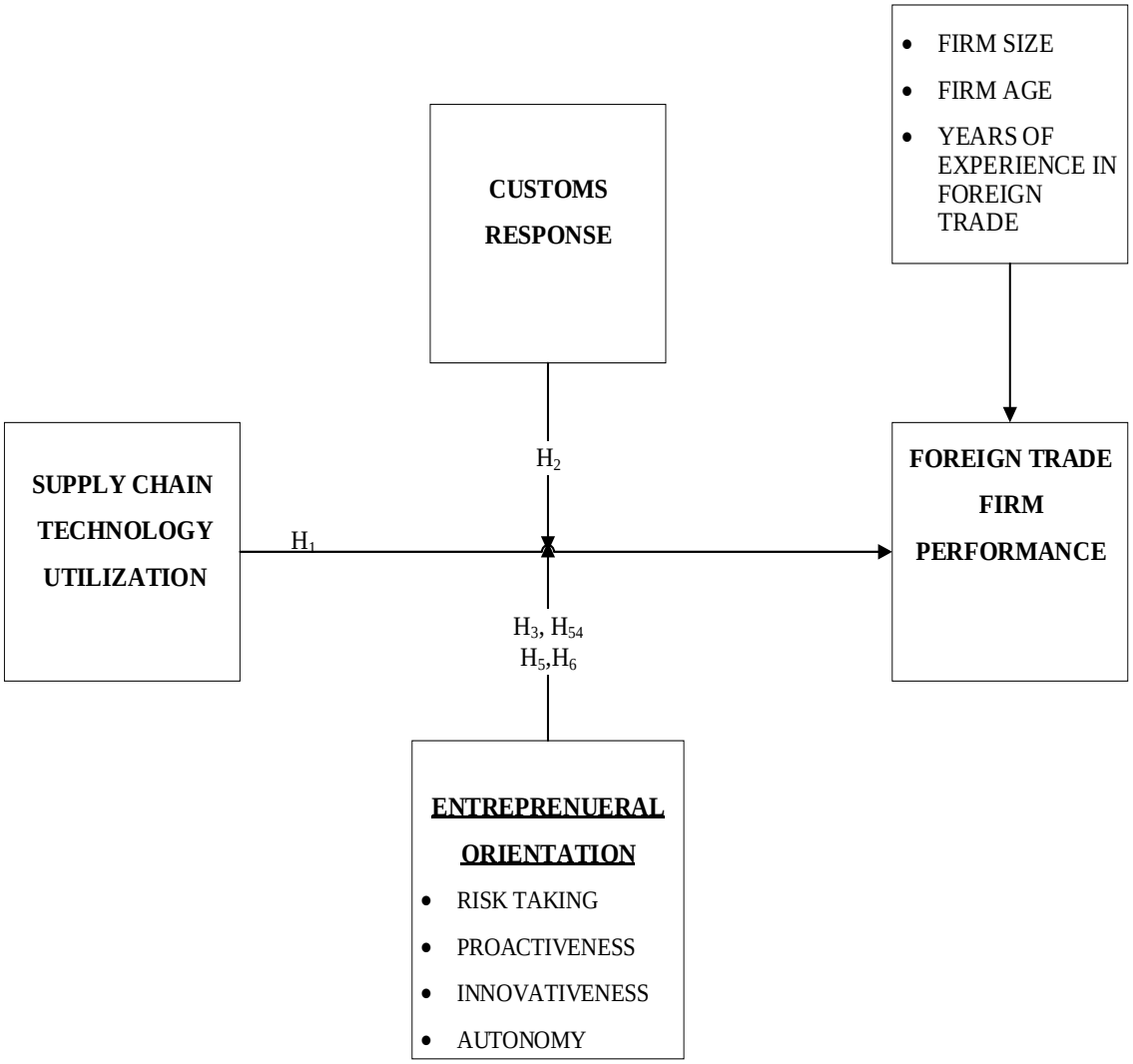
It builds the potential that small and medium-sized businesses need to thrive and be competitive both in the international and local markets. Survival is an indicator of efficiency or achievement.

This suggests that the history of exports has an impact on survival. Company sustainability is based on the company's sustained profitability. Survival also means that the organization enjoys continuous business funding. If consumer support decreases, leading to a decline in sales revenue, this could have a detrimental effect on profits, resulting in company loss or closing. Aggrey, Eliab & Josmeph (2010) point out that, relative to old businesses, new firms are more proactive, agile, and violent. Unlike old companies that are typically trapped with obsolete physical capital, they are often more likely to embrace new technologies. Consequently, the era of export does not inherently translate into improved results. Literature reveals the relationship as a paradox.

This paradox is demonstrated by Ayan & Percin (2005), who point out that some researchers (Dominguez & Sequeira, 1993; Seringhaus, 1988; Dean et al., 2000) say that the export age of an organization enhances efficiency by raising the opportunity to take

advantage of export opportunities and solve export problems, while on the contrary, some researchers have found that there is a negative association between bets. Because of market capture, one would therefore expect older companies to be more efficient. Profits derive from business pre-emption operations (strategic and operational rentals), resulting in demand being met and best fulfilled by the market (Majumdar, 1997). Understanding the relative contribution of business success expertise is central to explaining and modelling the complexities of a company in domestic and international markets. The contribution of scale and/or expertise to the development of individual organizations is, thus, a vital contribution and, essentially, an analytical question for these models (Berthou & Vicard, 2013).

Conceptual Model



Source: Developed by: Author (2021)

2.8 Hypotheses Development

2.8.1 SC utilization and Foreign Trade Firm performance

Foreign trade firm performance is defined by Feng et al. (2008, p. 26) as the performance related to organizations' internal operations, such as productivity, product quality and customer satisfaction. The concept of foreign trade firm performance has been measured differently by various authors. For instance, Mabin & Balderstone (2003) conceptualized foreign trade firm performance as the throughput, inventory, and operating expense. Technologies such as Radio-frequency identification (RFID) when used effectively, may lead to efficient internal operations (Jaska et al., 2010). To achieve foreign trade firm performance, firms need to be strategic in how their resources are deployed and utilized (Naranjo-Gil et al., 2008). From a SC perspective, a common concept that have been noted to affect the foreign trade firm performance is how technology is utilized within SC. In the view of Yeung et al. (2008) a SCT which is utilized such that information and other resources move seamlessly among SC partners may help enhance the efficiency and effectiveness in foreign trade firm performance. Foreign trade firm performance among firms is heavily dependent upon the technologies utilized in an organization's SC (Hatch, 2008). Thus, organizations that focuses on the utilization of SC technologies may achieve improvement in their throughput, inventory expense, and operating expense which may ultimately culminate in improved foreign trade firm performance (Huckman & Zinner, 2008).

Specifically, however, some of the SC technologies that may be utilized to promote organizational efficiency and effectiveness include electronic data interchange (EDI), enterprise resource planning (ERP), advanced planning and optimization (APO), data capture systems (like barcode scanners), warehouse management system (WWS), customer relationship management system (CRM). The use of such technologies within SCs may have various benefits for firms. As expected, Ling & Ling (2012), found out that SC management practices including technological innovation have significant and positive direct relationship with the performance of an organization. Amjad et al. (2020),

also found out that SCT has the tendency to improve performance of firms, however they added that the relationship is strengthened with innovation culture as a moderator.

Based on the arguments above, it is deductive that the use of such technologies may facilitate trade among partners and may enhance trading operations. Hence, the first hypothesis is proposed:

H1: There is a positive relationship between SCT utilization and foreign trade firm performance

2.8.1.1 The utilisation of foreign trade zones in the global SC

The published literature on the function of Foreign Trade Zones (FTZs) in the global SC has been non-existent, in part due to a lack of understanding and experiences with FTZs. However, some attempts have been made to evaluate the influence of FTZs on regional economic growth and, as a result, job possibilities (Min et al., 2010). Calabro (1983), for example, was one of the first to use hypothetical scenarios to analyze the economic advantages of FTZ status and the influence of an FTZ on regional job prospects in an area where an FTZ is located. Calabro (1983), on the other hand, never utilized actual data to back up his point that an FTZ improved area employment. Later, Hakims and Blackstone (2000) showed that the more a zone's companies used FTZ advantages, the larger the spillover impact on regional income and employment possibilities, because each job in an FTZ frequently produced two new jobs in the region. An analysis of the Rickenbacker International Airport FTZ found a job multiplier slightly greater than two and a capital investment multiplier of around two (Economics Research Group, 2001).

Swenson (2000) also found that FTZs led firms to subcontract materials, parts, components, and supplies when the US dollar was strong compared to the currencies of countries where parts and supplies could be acquired. Given the growing value of Canadian currency, the similar tendency may be observed in Canadian EDCs (Corporate Information, 2008). More products might be acquired from domestic sources when the

value of the US dollar falls in relation to these other currencies. Using FTZs in the United States, Sony Electronics decreased SC costs while increasing security, throughput, and customer response time, according to Lydon (2008). Hanback (2008) also discovered that FTZs enabled Crate and Barrel to digitally file customs entries after products were physically transported, obtained, and validated, which helped Crate and Barrel strengthen customs reporting precision, promote just-in-time shipments, and decrease post-entry adjustments and amendments. None of the previous research looked at how FTZs influence the global SC. In other words, none of the studies looked at whether FTZs helped expedite the flow of imported products within the SC by saving participating businesses money on tariffs, taxes, and fees on imported components and supplies.

2.8.2 SCT utilization and foreign trade firm performance: the moderating role of customs response

SCT utilization is widely considered to lead to efficient internal operations (Jaska et al., 2010; Naranjo-Gil et al., 2008). In other words, it is opined in the context of this study that the use of SC technologies by firms may have a positive effect on their foreign trade firm performance. However, it is important to note that this relationship may not always be direct or linear but the relation or the effects of SCT utilization on the foreign trade firm performance of firms may vary based on certain contingent factors. One of such contingent factors that may alter the relationship between SCT utilization and foreign trade firm performance is the response time by the customs division.

Customs response, in this context is defined to mean the lag time it takes for the customs division to effectively and efficiently address the needs of a customer (Grainger, 2008). It implies, customs response has the tendency to influence the SC architecture of firms that are into foreign trade. However, it is worth noting that the relationship existing between SCT and organizational effectiveness may be enhanced if customs response time takes a shorter period than when it takes a longer period. The global trade theory highlights the necessity of technological innovation in explaining a nation's global competitiveness (Fagerberg, 1997). Empirical applications show that heterogeneity

counts when it comes to technological innovation. Loungani, Mody and Razin (2002) established the existence of country-level heterogeneity in the different determinants of international trade performance. They found out from their study that technological modernization could be used to substitute the problem of distance in foreign trade firms in developing countries, whereas technological innovation and distance are complementary in developed countries. A study by Ramos (2012), to assess the relationship between SC technological innovation and international trade also found out that technological innovation in SC has a positive effect or relationship on export performance.

However, the positive relationship between SCT utilization and foreign trade firm performance may be enhanced if customs officials provide error free service and secure online transactions to their customers in a timely manner. Empirical studies linking trade to technological innovation-based show that the effect of technological innovation on foreign trade performance varies with country characteristics. Loungani et al. (2002)

Based on the aboveарguments, the second hypothesis is proposed;

H2: There is a positive relationship between SCT utilization and foreign trade firm performance.

2.8.3 SCT utilization and foreign trade firm performance: the moderating role of entrepreneurial orientation-risk taking

Prior to this point it has been conceptualized that there is a positive relationship between SCT utilization and foreign trade firm performance. In furtherance to that, it was conceptualized that this positive relationship may be altered by certain contingency factors. Aside the contingent factor of customs response as discussed earlier, another factor that may alter the positive relationship between SCT utilization and foreign trade firm performance is the risk-taking behaviour of an organization. Risk-taking behaviour of an organisation is the willingness on the part of the organization to veer off the

orthodox or traditional ways of doing things and venture into more uncertain territories (Wiklund & Shepherd, 2003, Venkatraman, 1989). The degree of risk taking in organizations may vary from one organization to the other. In other words, the propensity of risk taking varies among organizations. An organization with a high risk-taking propensity demonstrates a very high proclivity to very risky initiatives, and may also prefer taking very bold stance to achieve the objectives of the organization rather than being overly cautious (Miller, 2011). It is important to note that, organizational risk taking does not only involve taking bold decisions (Wiklund& Shepherd, 2003, Venkatraman, 1989) but it also entails the degree to which organizations are committed to continually devote large resources to such bold decisions (Miller & Friesen, 1978).

Thus, from a SCT utilization perspective, the risk-taking behaviour of organizations may foster creativity in how such technologies are employed in achieving the needs of the customer (Shalley & Gilson, 2004; Lumpkin & Dess, 1996). The customer in modern times is regarded as sophisticated and in order for organizations to deploy their SC technologies in ways that enhance the foreign trade firm performance of the organization, there is the need that some degree of risk taking or boldness is incorporated in the use of the technology. The degree of boldness or risk-taking behaviour in the utilization of the SCT may help the organization to respond effectively under unpredictable or emergency conditions thereby enhancing the foreign trade firm performance of the organization (Calantone et al., 2003). If there is a low level of risk-taking propensity in the utilization of a SCT, the use of the technology may be reactional in nature and not beneficial for unpredictable events. On the other hand, an organization with a high risk-taking propensity is likely to favour and exhibit behaviours that culminate in process enhancements particularly in SCT use and ultimately achieve higher levels of foreign trade firm performance (Gilley et al., 2002). Based on the arguments given above, it is hypothesized that;

H3: The positive relationship between SC utilization and foreign trade firm performance will be high when entrepreneurial risk taking is high rather than low

2.8.4 SC utilization and foreign trade firm performance: the moderating role of entrepreneurial proactiveness

Organizational proactiveness basically refers to a forward-looking strategy-making in expectation of future demands (Miller, 1987). Proactiveness has been heavily touted by most entrepreneurship studies as a concept that helps to promote performance particularly in public sector institutions. The concept is important in pursuing recognized or anticipated business opportunities (Kim, 2010). Borins (2000) argues that innovation is usually accompanied by proactiveness for tangible outcomes. Organizational proactiveness, it is defined as the "initiation of action or engagement in action, rather than activity as a reaction to an event or occurrence" (Salazar, 1992, p. 29). Thus, proactiveness can be either an aggressive organizational behaviour or the pursuit by an organization to attain favourable business opportunities (Stevenson & Jarillo Mossi, 1990; Lumpkin &Dess, 2001). Being either aggressive or pursuing favourable conditions are both necessary in order to effectively anticipate future consumer needs by scouting for new opportunities, whiles also introducing new services and/or product offerings ahead of competition (Venkataraman& Van de Ven, 1998).

Prior studies have concluded that proactive organizations usually quickly respond to changes in the market and to new emerging opportunities and trends, and then convert such opportunities into organisational performance (Lumpkin &Dess, 2001). An organization that is proactive tend to hold high levels of commitment and performance (Caruana et al., 2002). Consequently, in the utilisation of SC Technologies, a proactive organisation is likely to employ the full use to ensure firm performance. To be considered as a proactive organization, the action-oriented strategies of the organization which involve "creative interpretation of rules, skills at networking and leveraging of resources, and a high level of persistence and patience in affecting change" should be necessary (Morris & Jones, 1999, p. 76) as reference point for the proactive endeavour.

To understand the complex relationship between SCT utilization and FP, this study uses EO as a moderating variable. The role of moderating variables in influencing the

relationship between SCU and FP has been the subject of extensive studies. While it is acknowledged that SCU helps firm gain a competitive edge, SCU may need EO for it to be effective. That is, SCU would amount to nothing if there is no innovative mindset, proactiveness and risk taking. (Tang et al., 2008). Even if firms were to make use of SCT, EO determines whether this critical resource will make the firm succeed or not. Thus, two firms with the same amount of resource endowment are likely to perform differently based on their EO index. From a SC perspective, the SC technologies of an organization should be used in a way that make the organization forward thinking and not reactive in nature. To this point, it hypothesized that,

H4: The positive relationship between SC utilization and foreign trade firm performance will be high when entrepreneurial proactiveness is high rather than low

2.8.5 SC utilization and foreign trade firm performance: the moderating role of entrepreneurial innovativeness

The innovativeness of an organization is defined as the capability of the organization to develop and introduce new procedures, processes, products and/or service offerings (Azadegan& Dooley, 2010). Among SC literature, it is believed that the innovative behaviour of organizations is critical for their survival and growth. For instance, Handfield et al. (1999) suggest that a thorough assessment of the situation of an organization allows for innovative ways of making the prevailing situation better. In the context of this study, it is opined that SCT utilization will have a positive relationship with the foreign trade firm performance of an organization. However, this positive relationship may be further enhanced or may become stronger if the innovative behaviour of the organization in using the SCT is high. The current market conditions are increasingly changing and if organizations are not innovative enough, their innovative technologies may become obsolete and redundant over a short period of time and thereby not important to the organization. As much as it is important for organizations to use technologies in their SCs, it is equally important that such technologies are put to innovative uses and not just the orthodox purposes of the technology.

In order to ensure that SCT utilization has a stronger effect on the foreign trade firm performance of organizations, there is the need that the technology is used in an innovative manner such that it helps enhances the processes or procedures of the organization. Also, it is imperative that the SCT is used develop new approaches to deliver services to the customer. As explained earlier, organizational innovativeness implies that an organization is more receptive to change and more willingness to tackle new challenges (Hurt et al., 1977; Garcia et al., 2003; Parsons, 1991). When an organization is innovative, they proactively institute measures that address lapses in the SC and tackle lead time variations (Azadegan& Dooley, 2010). Aside being responsive when an organization is innovative, the SC of an organization is also more likely to be characterized by flexibility when there is a high degree of innovativeness. When there is flexibility, an organization is able to use their SC technologies to develop alternative solutions to enhance the general operations of the organization. Based on the arguments given above, it is hypothesized that;

H5: The positive relationship between SC utilization and foreign trade firm performance will be high when entrepreneurial innovativeness is high rather than low

2.8.6 SC utilization and foreign trade firm performance: the moderating role of entrepreneurial autonomy

The autonomy of an organization may come in various forms and ways. It could mean the degree of decentralization of authority and the power to take decisions (Baum & Wally, 2003). Thus, the autonomy of an organization may relate to their freedom to operate freely without any external control or influence. In other words, operational autonomy is defined as the freedom an organization has to decide on issues towards the attainment of the goals of the organization, as well as their control over the procedures and processes of the organization's work activities. Considering the role of autonomy in the relationship between SCT utilization and foreign trade firm performance, it is important to note that if organizations or employees of an organization to do have the freedom to decide how to utilize the technology, the operations performance of the

organization may decline. In an organization where employees are given the freedom to decide on the use of technologies, it promotes the creation or generation of novel ideas of working, increase experimentation, and creativity, mainly because certain organizational constraints regarding the use of the SCT have been removed (Lumpkin &Dess, 1996).

Thus, there is a positive relationship between organizational autonomy and their innovative behaviour (Das & Joshi, 2007). This is particularly important in state agencies where most strategic decisions are taken at the presidential or ministerial levels. The use SC technologies can be very complex or cumbersome particularly dealing with various SC problems. Therefore, in order to ensure the effective use of such technologies, it is important that employees are given the discretion to decide how to deploy SC technologies to suit a given SC issue at a given point in time. It is not enough to just install SC technologies in place and give strict protocols as to how employees to use it. If that happens the foreign trade firm performance of an organization may reduce, because this approach limits knowledge development. Organizational autonomy give room for creative problem solving in the organization, which consequently leads to speedy resolution and mitigation against SC risks (Das & Joshi, 2007). It is opined that successful high technology organization are those that allow for decentralized decision-making and high degree of participation by employees at veracious organizational levels (Das & Joshi, 2007). Thus, autonomy, which manifest in decentralization and employee involvement help organizations to respond quickly to the needs of the customer rather than later by a centralized authority (Ghoshal& Bartlett, 1988). Based on the above argument, it is hypothesized that;

H6: The positive relationship between SC utilization and foreign trade firm performance will be high when entrepreneurial autonomy is high rather than low.

2.9 SC management of fair-trade business

From the standpoint of supply and allocating resources, case studies from the United States show that shared values and a willingless to help might motivate social entrepreneurs to consider fair trade (Cater, Collins, & Bela, 2017). Direct contacts with producers, support for social concerns, preservation of craftsmanship, and sharing unique products are all motivating aspects in fair-trade company (Cater et al., 2017). Small fair-trade businesses require the help of the fair-trade community and family members (Cater et al., 2017). Certification affiliations play an essential role in SC management, according to a case study on fair trade agriculture industries (Burmeister & Tanaka, 2017). Farmers may maintain a high level in terms of creating premium quality products through entrepreneurship and partnerships with wholesalers and retailers, as well as the aggregation of market channels (Burmeister& Tanaka, 2017). In order to address corporate responsibility problems, studies on the fine jewelry SC, which includes items made with fair trade branded materials, highlight an inclusive business model including businesses, trade groups, NGOs, and consumers (Carrigan, McEachern, Moraes, & Bosangit, 2017).

Fair-trade has been identified as a critical component of enhancing sustainable SC management by researchers. Auroi (2003) identified difficulties of major players in the Fairtrade system, farmers, consumer associations, and international organizations, based on comprehensive secondary case studies, and stressed the necessity of adopting a uniform worldwide agenda for implementation. Davies (2009) carried out a longitudinal study on three large fair-trade food and beverage firms in the Great Britain, identifying three types of benefits (competitive developments through virtual integration, intellectual development through sharing, and ideological developments) from fair trade alliances and networks, as well as three managerial considerations (partner choice, partner use, and partner management) from fair trade alliances and networks.

According to Reed (2009), increased corporate engagement has dangers, particularly in terms of undermining the value of the fair-trade movement and its original social economy aims. Differences between fair trade and standard SCs have management consequences, according to Karjalainen and Moxham (2013). Fair trade brought about improvements in SC management, as well as competitive benefits, according to Moxham and Kauppi (2014). Moore (2004) discovered that the fair-trade industry structure consists of four sorts of organizations: developing-country producers, developed-country buying organizations, umbrella and certifying agencies like NEWS, and traditional institutions like supermarkets. Though certification organizations establish Fairtrade practice guidelines, scholars say that this is counter to the natural desires of business people who seek to control their SCs (Hira & Ferrie, 2006), and certification costs can be considerably high (Moore, 2004). Reed (2009) compared the benefits and risks of four different types of fair-trade value chains.

To begin with, fair trade without corporate engagement demonstrates compliance with fair-trade standards such as direct sourcing and assisting suppliers (Reed, 2008). Public procurement regulations, distribution channels, and social marketing can all help to improve this approach (Reed, 2008). Secondly, fair trade combined with corporate retail engagement helps to expand the market (Reed, 2008). The reputation of merchants, however, has a significant influence on the fair-trade brand, and some shops are progressively developing their own-label items (Reed, 2008). Finally, fair trade with corporate licensing demonstrates that businesses have more control over the value chain, particularly in terms of quality and cost. Smaller producers, on the other hand, may be treated as resources by big corporations, rather than being integrated into the entire value chain, and therefore go against fair trade ideals of building long-term relationships (Reed, 2009). Fourthly, combining fair trade with plantation production may help agricultural workers while also encouraging the expansion of fair trade on a broader scale (Reed, 2008). However, the growth of this sort of value chain may undermine customer trust, driving small companies out of business (Reed, 2009).

From the standpoints of demand and market, there is another stream of literature to consider. The consumption of fair-trade products is shown to be influenced by value-belief-norm and value-identity-personal norm (Schenk, 2019). Moral duty and self-identity are the determinants of fair-trade goods purchase intention, according to an online poll of Dutch consumers (Beldad & Hegner, 2018). Institutions such as government agencies, consumer groups, and non-profit organizations should emphasize the long-term advantages and develop a prospective market based on the findings (Beldad & Hegner, 2018). In fact, once favorable ideas about buying fair trade items have been developed, public ethical consumption decisions can be promoted (Beldad & Hegner, 2018). Certifications can increase product values, according to a cross-country study (Vera Heredia-Colac, Do Vale, & Villas-Boas, 2019). Fair-trade product brand eligibility through certification may have a significant impact on consumer ethical behavior, especially in developed markets like the United States (Vera Heredia-Colac et al., 2019).

According to the results of a questionnaire study, customer trust in fair trade organizations and their perceived efficacy will favorably affect consumer purchase intentions for fair trade items. Ethical consumers can be an agent to encourage moral action, cooperation, consumer demand, and citizen consumers, according to case studies in the UK's fair-trade firms (Anderson, 2017). Consumer mindset and moral identity have an influence on purchasing fair trade items, according to studies of Chinese consumers (Yen, Wang, & Yang, 2017). Nicholls (2002) investigated the major drivers of fair trade in terms of branding and marketing, concluding that merchants may use the opportunity to expand their corporate social responsibility profile and explore new niche markets. Randall (2005) proposed that, fair trade businesses should enhance quality, customer service, and goods after examining three craft groups. The restricted distribution capability that focuses on a small niche market should be expanded to include a larger client base (Randall, 2005). While price is important, other factors to consider include branding and information distribution (Nicholls, 2002), ethnical idea, high quality, health and organic characteristics, environmental credentials, standards and certification, and locally produced food (Valkila, Haaparanta, & Niemi, 2010) should also be emphasized to

increase consumer awareness and understanding of fair trade (Moore, 2004). The five components of company organizational culture, business strategy, small business success, artisan work and growth, and cultural product meaning for consumers should all be addressed if fair trade business is to become mainstream (Littrell & Dickson, 1999). Davies (2009) concluded that partnering with cafes, restaurants, long-term relationship building with SC partners, and engaging with charities can assist to reach the mainstream market by looking at the fair-trade firm Cafe direct. Bezencon and Blili (2009) indicated that mainstream players such as supermarkets can contribute to fair trade worldwide sales, but they cannot successfully communicate the idea of fair trade to customers, based on several case studies in Switzerland.

Current literature examines the responsibilities of government policy, culture, media, third-party agencies, NGOs, and religions at the macro-environmental level. NGOs, networks of fair-trade organizations, and stakeholders can influence shifts toward fair trade product use, according to works in the United Kingdom (Anderson, 2017). The link involving different levels of religion and social attitudes toward socially responsible items is demonstrated in studies of Dutch customers (Graafland, 2017). Third-party certification might help consumers feel safer about buying sustainable items (Brach, Walsh, & Shaw, 2018). According to a new study, purchasing fair trade products is linked to social media motivation (Han & Stoel, 2017). Fair trade certification and awareness remain hurdles at the regional and national levels in the United States and Canada, but fair trade has already entered the mainstream market in Europe, notably the Netherlands, the United Kingdom, and Switzerland (Hira &Ferrie, 2006). Legitimacy is also beneficial to Europe's success (Hira &Ferrie, 2006).

By evaluating Brazilian nut fair trade groups, Diniz and Fabbe-Costes (2007) discovered that absence of organizational SC is a key problem. Smith (2010) showed that UK supermarket engagement in fair trade resulted in both advantages and risks to fair trade development, due to their ties with fair trade suppliers. Ruben and Zuniga (2011) showed that fair trade provides coffee growers higher pricing, but alternative certification systems

exceed fair trade in terms of production and quality, based on extensive fieldwork in Nicaragua. Ozcaglar-Toulouse, Beji-Becheur, and Murphy (2010) interviewed fair trade innovators in France and plotted the evolution phases of fair-trade business strategies from early "chartable trade" to "alternative trade," "viable competitive enterprise," which means fair trade realizaing a market segment, and now to "sustainable fair trade," where organizations share resources via media events, a network, and a cooperative.

Ingenbleek and Reinders (2013) investigated the Dutch fair trade coffee industry and discovered that the decisions of retailers and coffee roasters had a substantial impact on market formation and maintenance. Owing to the tiny segment's consumer loyalty and numerous sustainability criteria, these options may be feasible. Fair-trade firms and organizations are practiced in developed nations, but research on fair trade Company in emerging markets such as India, Brazil, and South Africa are still under-represented in the literature (Anderson, 2017). Yang and Qi (2009) proposed that, the Chinese fruit sector join the worldwide fair-trade movement in order to better control commerce along the SC and improve the living circumstances of Chinese fruit producers. Liu, Yang, Wu, Guo, and Xu (2011) demonstrated the viability of fair trade as a poverty-reduction approach in China, as well as the necessity of local government assistance. According to Wang (2013), Chinese farmers require fair trade in order to maintain a competitive edge. Huang and Xiang (2013) investigated the consequences of fair trade in the context of China's agricultural industrial development, proposing three areas of opportunites: maintaining an effective monitoring and coordinating system to ensure benefits, promoting the concept of fair trade to enhance organisational obligation and consumer awareness, and depending on farmer cooperatives to establish fair trade. Current literature demonstrates conceptual frameworks and practical examples from either the supply and resources side, such as alliances, or the demand and market side, such as markets.

Nevertheless, there are very few works that look at the whole industrial value chain, integrating resource and market data and identifying key decision-making points across the SC. So far, studies have primarily focused on ethical purchasing and consumption in

Western nations, whereas fair trade movements in emerging markets, such as China, have received less attention. In comparison to the food and beverage industries, fair trade craft research is few. Furthermore, while there are a growing number of studies on Africa, they are all focused on secondary instances or document reviews rather than exploratory techniques. As a result, the goal of this study is to add to the theory of fair trade by delving into the specifics of the fair-trade SC, with an emphasis on Ghana, highlighting its structure, process, major decision-making areas, and strengths and weaknesses at each level.

2.10 Conclusion of Chapter

This chapter discusses the theories underpinning this study. It also reviewed empirical studies on the subject matter as well as drawing a conceptual frame with the variables identified in the review and also bringing out the hypothesis of the study.

Chapter 3

Research Methodology

3.0 Introduction

This aspect of the research provides the methodological approach used in the conduct of the research. The chapter discusses the various research paradigms, research strategies/ approaches adopted, research design, population, sample and sampling techniques, data collection instruments, the procedure of data analysis, and ethical consideration.

3.1 Research Philosophy

Philosophical matters include questions of ontology, epistemology and values of the researcher and how they impact the research process (Creswell & Clark, 2005). Many scholars, including Gray (2013), maintain that the need to consider a researcher's philosophical perspective influences the researcher's worldview and the conduct of research. Furthermore, the choice of research philosophy helps the researcher in clarifying the overall research strategy to be used, the methodology to be deployed and methods to be adapted for the research (Johnson & Clark, 2006).

The question of ontology is concerned with the nature of reality and seeks to explain the assumptions that researchers have which influence the perspective of the researcher's view. Literature maintains two facets of ontology that researchers should be aware of, namely: objectivism and subjectivism. Objectivism states that social entities usually exist in reality external to social actors, whilst the subjectivism suggests that social phenomena are the results of interactions between social actors and their existence (Saunders et al., 2009). Alternatively, Epistemology can be branded as the study of the criteria by which the researcher classifies what does not constitute the knowledge and focuses on what is known to be true. It is also deemed as the researcher's view regarding what constitutes acceptable knowledge (Hallebone & Priest, 2009; Saunders & Thornhill, 2012).

According to Creswell & Clark (2017), a number of research paradigms exists that a researcher must choose from in accordance with the nature of their studies. Saunders et al. (2009) posit that Positivism, Interpretivism, Realism and Pragmatism are the main research paradigms. However, Positivism and Interpretivism are the main elements in literature (Pham, 2018). The methods used to understand knowledge relating to human and social sciences cannot be the same as their use in the field of physical sciences (Hammersley, 2013). As a result, interpretivists adopt a relativist ontology, in which a single phenomenon might have numerous interpretations rather than a truth that can be verified by a measuring procedure. Virtually, from an interpretivist viewpoint, researchers prefer to grasp more deeply the phenomenon and its intricacy in their specific context rather than seeking to generalize the base of understanding for the entire population (Creswell, 2007).

Similarly, interpretivist researchers should strive to comprehend "the varied ways of seeing and experiencing the world via different settings and cultures" and avoid bias in researching events and individuals with their own interpretations, according to Hammersley (2013). In the following discussion, several advantages of this paradigm are presented from this perspective. The first benefit is that interpretivist researchers may not only describe things, people, or events, but also fully comprehend them in their social contexts, thanks to the diverse perspectives they use to examine phenomena. Furthermore, researchers can conduct these types of studies in natural settings by employing key methodologies such as grounded theory, ethnography, case study, or life history to gain insiders' insights into the research's objects (Tuli, 2010) and provide more authentic information about it.

Secondly, as leveraging a key method of interactive interview which "allows researcher to investigate and prompt things that we cannot observe, researchers can probe an interviewee's thoughts, values, prejudices, perceptions, views, feelings and perspectives" (Wellington & Szczerbinski, 2007). As a result, the important information gathered will

offer researchers greater insights for future action. Despite the advantages listed above, there are significant drawbacks to this paradigm. One of these limitations is that interpretivists prefer to gain a deeper understanding and knowledge of phenomena within the context's complexity rather than generalizing their findings to other people and contexts (Cohen, Manion, & Marison, 2011). As a result, there is a gap in verifying the validity and utility of research findings using scientific procedures. The second critique of interpretivism is that it has a subjective rather than objective ontological viewpoint (Mack, 2010). As a result, the researcher's personal interpretation, belief system, methods of thinking, or cultural preference certainly influence study findings, resulting in various biases.

3.1.1 Philosophical Assumptions

Durrheim (1999) identified three important concepts that are important in explaining research paradigms. These are ontological stance, epistemological stance and axiological stance. These are also presented as philosophical assumptions that underpin research. They also influence the methods and approaches used in research. Bryman (2008) assert that in any scientific investigation, the ontological, and epistemological and the methodological perspectives are very important. In addition, ethical consideration, and the values of the researcher, which form the axiological perspectives, are also very important.

3.1.2 Ontological stance of research

In research, the concept of ontology tries to find answers to what constitutes knowledge or what reality is. Ontology tries to represent what exists in reality and on the field of research. Morgan and Smircich (1980) posit that ontology relates to the nature of reality. That is, does anything exist? Moreover, if things exist then, what things have existence? Ontology is concerned with the question of whether reality is the product of one’s mind or reality is not subject to personal constructions or interpretation. Smith (2003) argues that ontology seeks to provide a definitive and exhaustive classification of entities in all

spheres of being. There are two schools of thought with regard to this assumption. They are objectivism and subjectivism. As explained by Bryman (2008), to the objectivist, social phenomena may confront us as external facts that are beyond our reach or influence. Bryman concludes that there is a real world which is independent of human knowledge and upon which life is built. The subjectivists (also in some cases referred to as constructionists) on the other hand, suggest that no real world exists but the world is socially and discursively constructed. Therefore, it is a product of time and culture (Marsh & Furlong, 2002). To the subjectivists, social phenomena can be handled and accomplished by social actors, and individuals create their own reality (Bryman, 2008). The appreciation of ontological perspectives is very crucial because a researcher must understand what reality is before pursuing it by conducting social research.

In line with Bryman (2008), this study posits that a reality exists as far as the study of adoption of SCT in Ghana is concerned. However, this reality has been formulated with time and experience. It is intricately shaped by social, economic, political, educational and gender values which become concretised over time (Perry, Riege & Brown, 1999).

3.1.3 Epistemological stance of research

The concept of epistemology looks at how knowledge is constructed or bring out. To Crotty (1998) epistemology denotes an understanding of what is entailed in knowing and how we know what we know. Epistemological position of a study is largely embedded in a study's theoretical perspective and it explains its beliefs about how one might discover knowledge about the world.

According to Saunders, Lewis and Thornhill (2007), this raises the question as to whether the social world can be studied using the same rigorous approach and procedure which are applied in the natural sciences or not. Therefore, a researcher's perspective of how knowledge is acquired goes a long way to inform him or her about the method that may

be adopted to acquire that knowledge. According to Bryman (2008), two strands of paradigm – positivis and interpretivism – are identified. Positivists advocate the application of methods of the natural sciences to study social reality. They hold the view that every rationally justifiable assertion can be scientifically verified with the use of the methods applied in the natural sciences. More so, their position is that a true explanation or cause of an event or social pattern can be found and tested by scientific standards of verification (Roth & Mehta, 2002).

On the contrary, interpretivists explain that the subject matter of social science and social reality is fundamentally different from that of the natural sciences. Therefore, it requires a different set of research procedures that are distinctively applicable to the study of social phenomena rather than the natural science model (Bryman, 2008). To the interpretivists, it is only through the subjective interpretation of and intervention in real world that the reality can be fully understood.

Arguably, both approaches may be taken as two sides of the same coin with the same purpose of seeking the truth but merely using different methods. As explained by Roth and Mehta (2002), the two approaches are not fundamentally at odds with each other but simply require different analytical lenses for the same data. Many other researchers (Rappaport, 1979; Rosaldo, 1982; Shankman, 1984; Farrer, 1984) have supported and maintained that the view of objective truth as being unknowable needs not prevent researchers from approaching that truth and should not be considered incompatible with interpretivist goals (Roth & Mehta, 2002).

Benbasat, Goldstein and Mead (1987), Kaplan and Duchon (1988), as well as Morgan (2007), have explained that no single research methodology (research philosophy) is intrinsically better than any other methodology. It implies that a combination of research methods will go a long way to improve the quality of research. This research adopts the positivism philosophy which has been conceptualised into a quantitative method of research.

3.2 Research paradigms

In his maiden research work, Khun (1962) was the first to make use of the concept of paradigm where he describes it as the pattern of research and what constitutes the researcher's conceptual or theoretical framework and interrelated variables to use in a research. In addition, TerreBlanche and Durrheim (1999) also studied research paradigm and outlined three important concepts in understanding paradigms. These are the ontological stance of research, epistemological stance of research and axiological stance of research. Scotland (2012) in his view, added a fourth component of paradigm which is methodology, and methods. The idea of paradigm determines the researcher's worldview of what the truth is and how knowledge is elicited whether independent or dependent of the inquirer and the inquired (Guba& Lincoln, 1994). A paradigm is based on its own ontological and epistemological assumptions including what is the reality and where knowledge reside of the phenomena to be study. Assumptions, by definition, are conjectures, and, hence, the various philosophical underpinnings are very difficult to be empirically proven or disproven. The inherent contradictory ontological stance and epistemological view of reality and knowledge of these assumptions determine/underpin their research approach and thereby churning out the methodology and methods to be used (Scotland, 2012).

Paradigms have been identified as mere theoretical assumptions upon which social research is based and underpins the various philosophical assumptions and world views of social science enterprise (Burrel& Morgan, 1979). There have been ardent advocacies for the various philosophies and unending dispute of which side of the divide scholars belong. Most prominent extreme ends are positivist philosophy and interpretivist philosophies (Guba& Lincoln, 1994).

3.2.1 Positivism paradigm

Positivism is a research philosophy that holds that only "factual" information obtained via observation (the senses), including measurement, is reliable. The researcher's

participation in positivist investigations is restricted to data collection and interpretation using an objective method, and the study findings are often observable and quantifiable. Positivism depends on quantifiable observations that lead themselves to statistical analysis. It has been noted that "as a philosophy, positivism is in accordance with the empiricist view that knowledge stems from human experience. It has an atomistic, ontological view of the world as comprising discrete, observable elements and events that interact in an observable, determined and regular manner" (Collins, 2010).

Furthermore, the researcher under the positivist paradigm is independent from the study, and there are no allowances for human interests in the investigation. According to Crowther and Lancaster (2008), positivist studies often use a deductive methodology, whereas inductive research is frequently linked with a phenomenological philosophy. Furthermore, positivism refers to the idea that researchers should focus on facts, whereas phenomenology focuses on meaning and allows for human interest.

Accordingly, if a researcher aasumes positivist approach to his or her research, he or she believes that he or she is independent of his or her research and that his or her research may be totally objective. When doing research, being independent involves interacting with your study subjects as little as possible (Wilson, 2010, p.2). To put it another way, positivist studies are based solely on facts and treat the world as external and objective.

The five main principles of positivism philosophy can be summarized as the following:

i. There are no differences in the logic of inquiry across sciences.
ii. The research should aim to explain and predict.
iii. Human senses should be able to observe the research. To create claims (hypotheses) to be tested throughout the research process, inductive reasoning should be employed.
iv. Science and common sense are not the same thing. The results of the investigation should not be skewed by common sense.
v. Science must be value-free, and it should be judged only by logic.

Positivists contribute immensely to the body of knowledge in the world and have propounded a number of theories that are used as referent point or justification by other paradigms. This comes about as positivists strive for high standards, controlled environment, methodologies and strategies that are replicable and verifiable in all settings for similar results (Ashby, 1964). The body of research in this area, by their verifiable nature, are utilized by policy makers and other wider stakeholders and their implementations perpetuate and permeate generations. Fields such as behaviourism, cognitive science, empiricism, psychology, psychoanalysis, psychodynamic and all the physical sciences are positivist purist who have used experimentation and observation in controlled environment (Hwang, 1996).

Post-positivism with similar ontological and epistemological positions emerged in the 20th Century to debunk and refut the following assertions of the positivist. Firstly, the truth as the outcome of scientific research is the mere belief of the tested hypothesis. Secondly, according to Ernest (1994), scientific truth cannot be proven in relation to the principle of falsification. This means that for every scientific research, truth remains tentative until it is proven otherwise.

The Post-positivists claim that the kind of knowledge they produce is more certain and objective compared to that of the other paradigms (Scotland 2012). Postmodernism is evolved after post positivist as a modified objectivist paradigm contesting that full objectivity is impossible to achieve and the ontological stance of the positivist with regard to object of the study existing independent of the human mind cannot be perceived with total accuracy through the researcher's observations (Philips, 1990). Concluding that though positivist focus on quantitative approach to research through experimentation and observation, they depend on qualitative data for detailed information on a phenomenon (Clarke, 1998).

The positivism paradigm which was chosen for this study under objectivism epistemology is a methodological philosophy in quantitative research where the methods of natural sciences are applied to discover the study of social science (Crotty, 1998). In

this respect, an understanding of phenomena in reality must be measured and supported by evidence (Hammersley, 2013). To illustrate, within the process of studying the phenomena, the relationship between an independent variable and one or more dependent variables will be discovered by causal inferences as the results of experimental designs and be fully determined through the way of how researchers maximize the influence of the independent variable on the dependent variable and events through this process (Cohen, Manion & Marison, 2011). Alternatively, this paradigm helps positivist researchers clearly understand the objects by such empirical tests and methods as sampling, measurement, questionnaire and focus group discussion. This suggests that insights provided by positivist researchers may have high quality standard of validity and reliability (Cohen, 2007) and be generalised to the large scale of population (Johnson & Onwuegbuzie, 2004).

The positivist paradigm was suitable for this study due to some of the following reasons. First, with the methodologies and methods of collecting and analysing data based on evidence and statistics, the result of the same phenomena or event may be allowed to replicate for different groups or subgroups of population in social contexts. As a result, the researchers can save time and investments for using the findings of specific study for future quantitative predictions (Johnson & Onwuegbuzie, 2004). Indeed, Dörnyei (2007) finds that reliability can be estimated by statistical analysis via identifying the internal consistency or correlation among the variables, using Cronbach's alpha reliability coefficient. Additionally, it is worthy to conclude that the validity of research results is one of the key strengths of this approach (Pham, 2018).

This research study adopted a positivist research philosophy in line with recommendations by Creswell (2009). Specifically, for the purpose of this study, the ontological stance is embraced as it posits the belief that social reality can be captured in the form of measurable facts.

3.2.2 Constructivism/ Interpretivism paradigm

Another paradigm worth reviewing for the study is interpretive paradigm. The proponents of this paradigm have heavily criticized the scientific paradigm. Firstly, they contest that some variables may be hidden and not known to the researcher only to be encountered when their effects emanate (House 1991). This is exactly so because the scientific research is designed based on the truth the research seeks to ascertain and the belief of where knowledge is located, either dependent or independent of the object. Also, complex statistical test is wrongly applied to generate results and are mostly misinterpreted. This is clearly demonstrated in the usage of parametric and non-parametric statistical tests (Blume &Papiet, 2003). The generalization of the research findings of the positivist has also been criticized for not recognizing the intentionality of the person involve (Scriven, 1970).

Constructivism, interpretivists, hermeneutic idealism, realism humanism and relativism are all philosophies of enquiry that originated from subjectivist purists (Lincoln & Guba, 2000). Subjective purists argue for the existence of multiple-constructed realities and that it is impossible to conclude that the subjective knower is independent of the known. That is, one cannot separate the knowledge from the holder/repository of the knowledge. Also critical is the argument against generalization of a phenomenon without consideration of time and context in which it happened. Guba and Lincoln (1994) concluded on the ontological stance of the proponents of interpretive paradigm as realism. That is, the subjectivity of reality which differs from one person to the other. Reality is a social construct. The reality of respondents of the object of study/phenomena is not generic and there are as many realities as individuals. This is reflected in the consciousness of the individual of the reality or what pertains in the environment (Crotty 1998, p. 44).

The epistemological view of the interpretivists is subjectivity of the world. That is the independence of the existence of the world from individual knowledge is impossible. Our perspectives of similar phenomena are different. However, the truth is born out of consensus from a number of people. The interaction between humans and their world

leads to the construction of the reality and knowledge that also has the trait of culture and historical import and origin (Crotty 1998, p. 9, 42). Interpretivism is more qualitative in nature and aims to bring hidden social and historical forces into consciousness (Scotland 2012, p. 12). Cathy Chamaz (2006) supported the view of lack of value free of research, interpretation and theory development and referred to the researcher as "co-producer" of data together with the respondents.

3.2.3 Critical/ participatory paradigm

The next paradigm worth discussing is the critical paradigm which also descended heavily on the interpretivist paradigm based on its weaknesses. Prominent among them is the validity of interpretivist research as researchers ignore/reject a foundational base to knowledge and the validity of adding strategies like triangulation. Secondly, interpretivist research finding/knowledge cannot be generalized as context and social structures of the world view of the individual are subjective. Qualitative data is highly contextualized and the subjective view of the researcher influences the analysis and interpretations, hence the difficulty in generalizing the findings (Willis, 1995; Angen, 2000; Berliner, 200 2). In their bid to discover the secrets of participants, interpretivists obtrusively interfere in the privacy and autonomy of the respondents through personal interactions and open-ended questions and/or observations. This has been described by the critical paradigm as unethical though it leads to in-depth knowledge of a phenomenon (Howe & Moses, 1999). Interpretivist researchers dictate the direction of the research, what data matters in the analysis, what is important to make public, etc. to arrive at a theory making some of the issues participants would have loved to project as part of the phenomena subsumed (Scotland, 2012). There is nothing like correct or incorrect theory in the standards of the interpretivists, but their focus is on how interesting a conclusion on a phenomenon is to the judgement of the researcher (Walsham, 1993).

In view of the criticism from the critical paradigm above, historical realism has been their ontological stance and subjectivism as their epistemological view. Historical realism is the view that reality is influenced by political, economic, social, cultural and gender

values (Guba & Lincoln, 1994). The epistemological view of subjectivism refers to the linkage between the real world and societal ideology. Critical issues such as social relations, power relations and cultural relations are determinants of knowledge and they are viewed as socially constructed (Cohen et al., 2007). This explains the reason why different advocate groups or stakeholders have different perspectives on the same issue.

The belief of pre-existence of the world influences the conclusion of the critical researchers of people born into cultures and therefore meet certain knowledge developed already based on consensus from the past which are currently revolving. Critical theory is anti-oppression, exclusionist, -stratification, -racism, -marginalization, -injustice, -hegemony and anti-foundational. Popular theoretical enquiries under critical paradigm are Marxism of Karl Marx, feminism, queer theory and social constructivism (Crotty, 1998; Scotland, 2012). For example, Karl Marx (1818-1883) in his popular book *Communist Manifesto* challenged a lot of social injustices and oppression by encouraging the poor (Proletariat vs. Bourgeoisie) to revolt with the popular statement "you have nothing to lose but your chains". The utopian aspiration of the critical researchers never came to pass and pundits like Karl Marx died disgruntled as he kept moving from one place to the other any time there is revolution to observe the emancipation of the poor which were all a mirage.

Critical paradigm believes that knowledge is not value free as it is generated from cultural background that is also historically situated (Scotland, 2012). The critical paradigm also has weaknesses and the key among them are their revolution stance. This makes regimes and policy makers dislike their approach of inciting the masses against the elite class (Berliner 2002). Secondly, as intimated earlier, their focus of emancipation for the poor as was in the case of Karl Marx never materialized living most of them despondent as well as disgruntled and the world is yet to see oppression, marginalization and injustice eroded. Thirdly, even in their research setting a dialogue of equals is never possible to achieve as social status of people counts. Participants are not involved in research design, data analysis and interpretation and yet have no voice to question that. The credibility of

the research is then an issue if respondents decide to please the researcher (Scotland, 2012). Finally, feminists have criticized the critical paradigm for not advocating for the marginalized in society women as all the proponents are males (Bubbles and Berk, 1999).

3.2.4 Ideal paradigm: Pragmatic paradigm

Pragmatism is a deconstructive paradigm that advocates the use of mixed methods in research, sets aside the contentious issues of truth and reality (Feilzer 2010, p. 8), and "focuses instead on 'what works' as the truth regarding the research questions under investigation" (Tashakkori & Teddlie 2003, p. 713). One key similarity between objective purist and positivist purist is the style of writing using impersonal passive voice but diverge with the former preferring detailed description while the later adopts technical terminologies and strict adherent to describing social laws (Johnson &Onwuegbuzie, 2004 p.14).

The dichotomy between the two traditional philosophies (subjectivist and objectivist) has ushered in the mixed method of social scientific enquiry as pragmatism paradigm (Johnson & Onwuegbuzie, 2004 p.14; Tashakkori & Teddlie, 2003a). The proponents have outlined that methodology does not matter but the research question in opposition to all the above paradigms. Secondly, the focus of research should be "what works" or what is practical (Tashakkori&Teddlie2003, Creswell & Poth, 2017).

This new paradigm and approach to research started prior to the 1980s but has had a major revolution concurrently from several writers from different disciplines in different countries, including the United States, Canada, and the United Kingdom, etc. Prominent among these writers are the sociologists in the US (Brewer and Hunter, 1897), education researcher in the US (Creswell, 1994), evaluation researchers in the US (Greene, Caracelli and Graham, 1989). Fielding and Fielding (1986) and Bryman (1988, 2006) wrote from the United Kingdom on sociology and management respectively using mixed method. Morse (1991) also wrote from Canada on nursing with the same method. However, these writings on mixed method have their historical antecedents in writers including Campbell

and Fiske (1959) (who discussed the import of quantitative sources of data in psychology studies), Denzin (1978) (who advocated for the mixed source of data in research) as well as Cronbach (1975) (a well-known positivist who advocated for the use of qualitative data to support findings from quantitative experimentations) (Creswell & Poth, 2017).

A clarion call for sophistication in the collection of evidence in research led to the mixed method of qualitative and quantitative study. This was coupled with the fact that the complexity of research problem in current phenomena requires a mixed method or data from both qualitative and quantitative sources to provide holistic analysis of the research problem. Stakeholders, policy makers, professional practitioners and applied fields demand for comprehensive evidence on complex phenomena and/ or problems push qualitative researchers to realize that only in-depth data from participants is not enough especially when it cannot be generalized (Denzin& Lincoln, 2005).

The philosophical underpinning of the mixed method as any other paradigm includes the ontological stance, epistemological belief, methodology and methods (Crotty, 1998). So far, there are three paradigms or worldviews. These include the positivists who view reality as "singular", interpretivists who also view reality as "multiple" (and hence need to interview many participants for their perspective on the object of study) and, finally, the critical paradigm (also referred to as "participatory" by Creswell and Poth) (2017). The critical paradigm views reality as negotiated from a political context and seeks to emancipate people from injustice, marginalization and oppression (Creswell & Poth, 2017). The fourth worldview, which is pragmatism, is the paradigm of the mixed method.

The ontological stance of the mixed method is that reality is both "singular" and "multiple" at the same time. The pragmatist worldview holds that there can be theory existing for the explanation of the phenomena of study as well as the need to access important inputs from individual perspectives for the study phenomena. The epistemological belief of both objectivism and subjectivism explains the usage of qualitative and quantitative data for mixed method research. This approach combines both inductive and deductive strategies to data collection (Creswell & Poth, 2017).

The reality or the truth is dependent on the enquired into and does not exist outside the subject of enquiry. There are multiple realities on the object of study based on the context of the participants. The epistemological belief is also based on subjectivity where the relationship between the researcher and the participant is closeness. New evolutions have added on to pragmatism by various researchers, including the "transformative framework" of Marten (2003) and Creswell (2010) that refers to the person's worldview and underlying "implicit value assumptions".

3.3 Research Approach

The research approach consists of several phases where several strategies are necessary. Sekaran and Bougie (2009) suggest a hypothetic-deductive approach beginning with problem definition, development of hypotheses, data collection and analysis, including interpretation of data. Furthermore, an observation in the form of a literature review is conducted to define theories specific to the study of SCT adoption in Ghana.

Howell (2013) explains methodology as a research strategy that defines the method to be used and outlines the structure of the research and ways of conducting it. The "5ws" ascribed to Plato (428-348 BC) (as in who, where, when, what, and why) are also important in the determination of the method to use and the methodology spells it out. The methodology also bothers on whether the study is qualitative or quantitative by determining where knowledge and reality are perceived to be. According to Irny and Rose (2005), the concepts of the study including theoretical framework, philosophy, theoretical models, etc., are all defined as part of the methodology. The most popular research approaches discussed in the literature are quantitative, qualitative, and mixed methods, with each offering distinctive qualities (Kent, 2007; Malhotra, 2008).

Qualitative research focuses on obtaining data through open-ended and conversational communication. This method is not only about “what” people think but also “why” they think so. The strength of qualitative research is its ability to provide complex textual descriptions of how people experience a given research issue. It provides information

about the human side of an issue; that is, the often-contradictory behaviours, beliefs, opinions, emotions, and relationships of individuals. Qualitative methods are also effective in identifying intangible factors, such as social norms, socioeconomic status, gender roles, ethnicity, and religion, and their role in the research. Mixed methods combine the use of qualitative and quantitative approaches to help interpret and better understand the complex reality of a given situation and the implications of quantitative data (Bernard, 1995). Quantitative research, on the other hand, is viewed as the research approach that concerns itself with the use of formal and predetermined responses in a bid to understand social reality (Hair et al., 2016). A quantitative approach was employed for this study with the guide of the post positivist research philosophy. Quantitative research is defined by Burns and Grove (1993) as a formal, objective, methodological

3.4 Research Design

Research design is the overall strategy that a researcher chooses to integrate the different components of a study in a logical and coherent manner to ensure the appropriate gathering of data to unambiguously achieve the study objectives (De Vaus, 2001). The importance of research design in research cannot be overemphasized as it lays the blueprint for conducting any piece of research. It outlines the guiding processes for the collection, measurement, and analysis of data and finds answers to the research questions. It also provides an overall guidance for the selection of appropriate methods of data collection and analysis for the study (Churchill, 1979).

The research design reflects the research plan, including the necessary resources. It also shows the structure of procedures used by the researcher to collect and analyse data for the research. The methodology of a study answers questions bothering on why, where, what, how, which and when data is collected and analysed. The study plan or strategy determines the method to be used (Crotty 1998).

Value-free knowledge positivists combine numerous strategies/methodologies, including observation, empirical testing random sampling and experimentation with dependent

variables, independent variables, moderators, and control groups in a controlled environment to arrive at value neutral results. Positivists research takes deductive approach and draws on the views of participants to understand causal relationship in most cases through experimentations and correlational research (Creswell & Poth, 2017; Cohen et al. 2009). Positivists prefer quantitative approach of research.

There are three types of research designs suitable for a quantitative study such as this one. These are exploratory, descriptive and explanatory designs. According to Yin (2011, 2017), the use of each method is dependent on the nature of the research questions, the level of control the researcher has over the social events, and the extent of emphasis on the timeliness and contextual conditions of events.

Exploratory research designs are used when researchers are trying to gain insight into a new concept or clarify an existing concept that enables the researcher to prepare to dig deep for information pertaining to a research phenomenon (Kent, 2007). Descriptive research designs, on the other hand, are used by researchers when trying to profile the research phenomenon to obtain a descriptive insight into it. This design is often used to facilitate deep investigations into a research subject. As the name suggests, descriptive studies mainly try to describe the research phenomenon by collecting data about the nature of the phenomenon (Burns & Bush, 2000).

The explanatory or causal research design refers to research designs that facilitate the examination of the causal relationships amongst a number of variables (Malhotra, 2008). This design allows researchers to determine the impact a variable has on other variables within a research framework (Gray, 2013). As this study seeks to explain the antecedents of SCT and to provide answers to the causal relationships between the variables, the study uses the explanatory research design in assessing the use of SCTs in selected organizations.

3.4.1 Explanatory design

Explanatory research focuses on why social events happen and the variables that affect or cause them. The goal of explanatory research is to answer "why" questions and to determine the causal relationship between variables in a study topic (Neuman, 2014; Levitt et al., 2018; Van Wyk, 2012). It is beneficial in highlighting the influence of SCT adoption on business results since it tries to explain the assumed variables that link one occurrence to another (Yin, 2003, 2017). According to Neuman (2014), explanatory studies often describe the framework of a prevalent theory and test or define the theory's applicability in a new environment or context. This study utilized its causal relationship evaluation to investigate the elements that impact the adoption of SCTs in Ghana's export industry, since explanatory research investigates why and how there is a link between two circumstances or occurrences (Kumar, 2014; Van Wyk, 2012). The research method used are the case study as the ‘why’ questions deal with operational links needing to be traced overtime (Yin, 2017, p. 7).

3.4.2 Research Methodology

The methodology of research is a way to address the research problems systematically. Research methodology describes in general how the investigator conducts research scientifically. There are several methodologies available for research to adopt. However, not all methods are applicable to all research questions. As such, the choice is by the age of research the investigator wishes to explore. A broader classification of research methodologies is the quantitative, qualitative and the mixed methods. As already explained above, the mixed methods essentially make use of both quantitative and qualitative methods.

The main goals and objectives of quality research are usually defined by any study’s relatedness to some aspects of social life and their methodology and generates words as data instead of numbers for study. Qualitative approaches typically seek to explain

respondents' perceptions and experiences, and to address questions like "why," "how" and "what" (Patton and Cochran, 2002).

Quantitative research approach on the other hand is usually concerned with assessing the goal, replicability and generalizability of results. The hope that a researcher can set aside his or her views, prejudices, and biases to ensure objectivity in the study's conduct and the conclusions drawn is central to this approach. The use of instruments such as tests or surveys for data collection and dependence upon probability theory for testing statistical theories that lead to investigative questions are the key features of many quantitative studies. Quantitative research comes from the natural sciences in general. It also uses a number of different scales, depending on the measurements. Quantitative approaches are intended to answer questions like "how many" or "how much". This study involves the collection and analysis of quantitative data from stakeholders in the export industry of Ghana through the use of questionnaires to enable understanding of the quantitative factors that influence the adoption of SCTs.

3.4.3 Time Horizon

Research design can either be cross-sectional or longitudinal, with regard to the time horizon. A cross-sectional research design investigates a certain phenomenon at a particular period (Saunders et al., 2007). It represents a snapshot of characteristics in the population at a point in time. A sample can be collected and analysed at any time; either one sample can be analysed in a single cross-sectional study or two or more samples in a target population (Malhotra & Birks, 2007). Longitudinal studies are, however, repeated over some time (Cooper & Schindler, 2007). A longitudinal study may also take the form of a single longitudinal study where only one sample is studied at different periods or multi-longitudinal where two or more samples are studied at different periods (Malhotra & Bricks, 200). This study typically is a cross-section study with regard to the time horizon.

3.5 Study Variables

3.5.1 Dependent variable: foreign trade firm performance

According to Li et al. (2006), firm performance is defined as the level showing how companies compete at the highest level with their competitors in their business processes and how they achieve their goals at what stage as a result of these operations. This study makes specific emphasis on firms involved in foreign trade. The study measured foreign trade firm performance by adapting scale items from. Four items were used to measure firm performance, and all items were measured on a 5-point Likert scale (ranging from 1 = strongly disagree to 5= strongly agree).

3.5.2 Moderating variables: entrepreneurial orientation & customs response

Voss and Moorman (2005, p. 1134) have defined entrepreneurial orientation as "a firm-level disposition to engage in behaviours (reflecting risk-taking, innovativeness, proactiveness, autonomy, and competitive aggressiveness) that lead to change in the organization or marketplace". Furthermore, other definitions by Covin and Slevin (1991) and Wiklund and Shepherd (2003) found three main dimensions, namely: risk-taking, innovativeness, and proactiveness. To understand entrepreneurial orientation in the context of SCT utilization, this study measured EO with the following four dimensions: innovativeness, proactiveness, risk-taking and autonomy, adapted from Covin and Slevin (1989). In this study, a total of 12 items were used to measure EO. Again, all items were measured on a 5-point Likert scale (ranging from 1 = strongly disagree to 5= strongly agree). Customs response, as defined by Skocibusic et al. (2008), refers to electronic data interchange between trading partners involved in administration, commerce and transport of goods across international borders. In this study, five items all of which were measured on a 5-point Likert scale were used to measure CR. This was in line with Malik (2018).

3.5.3 Independent variable: SC utilization

In the view of Yeung et al. (2008) a SCT which is utilized such that information and other resources move seamlessly among SC partners may help enhance the efficiency and effectiveness of foreign trade firm performance. This study assessed SCU with 7 items as adapted from Liu et al. (2016) and Adams et. al, (2014).

3.6 Study Population and Sample

The population for this study included customs brokers working at both the airports and seaports in the Ghanaian foreign trade sector. In this light, they include the management of the various export and import trade entities, freight forwarders, logistics and clearing agents. Their total number at the time of the study was 795.

3.6.1 Sample Size Estimation

There are several ways of estimating sample size for a study based on the available information known about the population. The researcher used Yamane's (1967) approach to estimate sampling size. According to him, for a 95% confidence level and α=0.05, the size of the sample should be: $n = \frac{N}{1+N(e^2)}$

Where N is the population size, and e is the level of precision. Hence, the sample size using ±5% level of precision (Desired range for which the population proportion is expected), the population size of 795, and a 95% confidence level (i.e., a 0.05 error level) is calculated below:

$$n = \frac{795}{1 + 795(0.05^2)} \cong 350$$

As a result, with a 95% confidence level and a 5% level of precision, the sample size for the study is 350. However, in order to get better precision, the sample size was increased to 350.

3.6.2 Sampling frame

A sampling frame is considered as a complete list of all the cases from which the desired sample is drawn (Saunders et al., 2007). Saunders et al. are of the view that a sampling frame should be complete since a deficient list will not offer every case a chance of being selected. This study was only limited to customs brokers who are users of SC technologies for export and import. Thus, the sampling frame is a complete list of all customs brokers who use SCT. Their total number is 795.

3.6.3 Sampling technique

In quantitative research, a representative sample of the population being researched is selected using the probability sampling approach (Levy &Lemeshow, 2013; Neuman, 2014). The method provides units in a huge population with an equal and independent probability of getting chosen (Kumar, 2014). Depending on the aim of the study, a range of different methods of probabilistic sampling can be employed. These include simple random sampling, stratified random sampling, cluster sampling, systematic sampling, and multi-stage sampling. The advantage of using the probability sampling method is that it can produce reliability of the sample in question, although it does not automatically result in a sample that is more reflective than a non-probability method (Orton, 2000). The aim of the probability selection process is usually to remove the element of possible bias of the researcher and enable numerical estimations of representativeness of the entire population.

Non-probability sampling technique involves the deliberate selection of samples to reflect particular properties or characteristics within the population. The selected sample is not intended to be statistically representative of the population, but the features of the

population are an essential basis for the selection of the sample (Neuman, 2014). The main purpose is for this non-probability sampling process to lead to the defined research objectives or to meet other studies specific end. Non-random samples are described as 'purposive' given the importance of conscious efforts at ensuring the right decision is made in the selection of non- probability sample (O'Leary, 2004). Creswell (2014) notes that with this method the samples may be 'convenience sample' selected on account of their convenience and availability.

The researcher used the systematic probability sampling method for selecting a sample that is representative enough of the population size of 795. This method was chosen over other probability sampling methods because, there is a lower risk of creating biased clusters when using systematic sampling methods since the selection method is at a fixed distance between each participant (Taherdoost, 2016). Systematic sampling techniques ensure that each kth case is selected after a first random number is selected between 1 and k. For example, each fifth consumer will be selected from a population of consumers. Unlike simple random sampling where all members in the population have an equal probability of being chosen, systematic sampling does not do the same. Instead, members are chosen at a regular interval, say every 20th member on a list. Thus, there is regular and uniformity. In applying systematic sampling for the study, each brokerage firm of the study population (795) was listed. Every kth= (N=795/n=350) member was then selected after the first number was selected at random between 1 and k (2).

3.7 Data collection

There are usually two kinds of data used in research. Primary data are the ones that the researcher collects to address a research problem, whereas secondary data has already been collected for reasons other than the research problem at hand (Malhotra & Peterson, 2006). The choice of the type of data used has an influence on the choice of the data collection method. For this study, primary data was used with a structured questionnaire,

which is the principal tool for data collection, designed by the researcher. The questionnaire had five sections:

- Section “A” covers the demographic profile of respondents.
- Section “B” consists of SCT utilisation, and had a total of 7 items.
- Section “C” is on entrepreneurial orientation, with a total of 12 items.
- Section “D”, which is made up of 5 items, covers customs response.
- Lastly, section “E” is on operational performance, with 4 items.

The items in the questionnaire were structured in a Likert scale fashion with 5-points in which the respondents were asked to indicate their degree of agreement with the statements provided on the instrument. The scale ranged from 1 to 5, where 1 means “Strongly disagree”, 2 means “disagree”, 3 represents indecision or neutral, 4 denotes “agree” and 5 depicts “strongly agree”. Many scholars have used the Likert-scale for several decades of its simplicity and ease of use (Neuman, 2000). Neuman (2000) also added that the reliability of data conducted with this scale is highly valued.

3.7.1 Response Rate

In all, 350 questionnaires were administered to customs brokers who are users of SC technologies for export and import. Out of them, only 324 were successfully answered and returned. However, 21 of the 324 had incomplete responses. Hence, there was a follow up after which 9 were retrieved. Thus, a total of 312 of the administered questionnaires were found to be usable for analysis. The researcher used the recommendation by Lings and Greenly (2010) to assess the non-response bias in the study. Lings and Greenly recommend that the mean values of the questionnaire scale

items of those who submitted their questionnaire early be compared to those who submitted theirs late. The results of this test is presented in chapter four.

3.8 Validity and Reliability

3.8.1 Test of validity of constructs

Validity is a metric that gives a clear representation of what was meant to be calculated to what degree. There are two components of truth, systemic error and vector error (Hair, Black, Babin, Anderson, & Tatham, 2010). A systematic error, also referred to as bias, is a consistent process that happens during each calculation. An example of a skewed query is a question that any time the it was posed, will create a mistake in the same direction. When the question is posed, a predictor error appears spontaneously. An example of a variable error is a response that, due to a transient function, is less desirable than the true feeling, such as the respondent being in a bad mood. The mistake does not exist each time the person's attitude is calculated. Moreover, if the person is in a good mood, the same is true, then the mistake would be in the opposite direction and would be excessively favourable (Hocevar & Benson, 1985).

An instrument's validity is the degree to which the instrument measures what it is intended for (Polit & Hungler, 1993). The survey questionnaire was checked for both face and content validity. Face validity is when a test appears vacuously to test what it has to test. Validation of content is the premise that the test should sample the scope of conduct depicted by the theoretical concept being examined McBurney (1994). As a way of guaranteeing privacy and confidentiality, the physical and psychological environment was made conducive as much as possible. The simplest type of validity, first of all, is called face validity. It extends to whether an object will quantify an underlying construct or not. In this study, questions were constructed, based on the information gathered during the review of the literature to make sure they represent what people should know about SCT and its impact on operational performance. The questions were designed in plain language for clarity and easy comprehension. The respondents were given detailed instructions on how to answer the questions. All questions were answered in the presence

of the researcher to prevent respondents from submitting questionnaires to others to be answered on their behalf. To further enhance the validity of the instrument, the questionnaire was submitted to a Statistician at the Ghana Statistical Service. As such, additional questions were added to improve representativeness and some questions were rephrased to further improve clarity. Some of the response choices were also modified where necessary regarding close-ended questions.

The factor loadings (Table 1) indicate how much each item weights on each construct. The factor loadings are referred to as validity coefficients and the observed variable score can be used to indicate how much of the observed variable score variance is valid by multiplying the factor loading times (Schumacker & Lomax, 2016). The validity of the item is shown in this study with the factor loadings in the results of Chapter 4. The size of the loading factor is one significant consideration. High loadings on a factor would indicate that they converge on a common point, the latent construct, in the case of high convergent validity. Standardized estimates of loading should be above 0.50 or higher and 0.70 or higher, ideally.

Table 1: Convergent Validity

Construct	Initial, final number of scale items	Item code	Loading	t-values (Bootstrap)	Cronbach's Alpha	Composite Reliability	AVE
SC Utilisation	7,5	SCU2	0.785	10.046	0.795	0.852	0.539
		SCU3	0.848	15.372			
		SCU4	0.61	4.151			
		SCU6	0.679	3.325			
		SCU7	0.725	3.322			
Custom Response	5,5	CR1	0.789	4.853	0.818	0.867	0.569
		CR2	0.612	3.233			
		CR3	0.809	7.056			
		CR4	0.853	7.283			
		CR5	0.681	4.676			
Entrepreneurial Orientation	9,4	EO3	0.732	3.227	0.708	0.816	0.526
		EO4	0.78	6.991			
		EO5	0.679	6.369			
		EO7	0.707	4.429			
Operational Performance	4,4	OP1	0.867	7.639	0.89	0.924	0.754
		OP2	0.909	19.815			
		OP3	0.795	18.366			
		OP4	0.898	10.448			

Source: Field Test Data, (2020). Note: All t-values are significant at 0.01 level of significance

Convergent validity is a measurement to examine the proximity of two similar structures. It describes how two structures converge. Discriminant truth is the other calculation. It applies to how a concept discriminates against other constructs that should not be

evaluated by it. Usually, for a number of similar structures, convergent validity and discriminant validity are tested jointly. The Average Variance Extracted (AVE) (Bhattacherjee, 2012) is a convergent validity calculation and is measured as the mean variance extracted from the item loadings on the construct. It is a convergence description measure. For each item, AVE is determined by the sum of squared uniform factor loadings (squared multiple correlations) divided by the total number of items.

Hair et.al. (2010) defines it as: "average squared fully standardized factor loading or average community" and is calculated in the calculation model for all latent constructs. An AVE of less than 0.50 means that according to the algorithm, on average, more errors exist in the products than the variance explained by the calculated factor structure. The square root of the AVE from the construct should be greater for adequate discriminant validity than the association shared between the construct and other constructs in the model (Fornell & Larcker, 1981).

3.8.1.1 Convergent Validity

An examination of the initial results showed that some items had low loadings into the constructs they were intended to measure, thus, leading to low average variance extracted whereas some other constructs had significant cross loadings into other constructs, thus, affecting discriminant validity. The offending items were deleted sequentially until acceptable construct measures were obtained (Hair et al., 2016). Figure 1 and Table 1 present a summary of the reliability and convergence validity of the construct measures following purification of the model.

From Table 1, all factor loadings were higher than 0.6. Also, Cronbach's Alphas were higher than 0.7 which is acceptable for exploratory research. All composite reliabilities were above 0.7. Finally, all the average variance extracted estimates were above 50%. All these provide evidence of adequate convergent validity and reliability of the construct measures (Hair et al., 2016).

3.8.1.2 Discriminant Validity

Discriminant validity was assessed using both Fornell and Larcker Criterion, HTMT and item cross loadings as shown in tables 2 and 3 respectively. The findings show that the square root of the minimum average variance extracted is higher than the largest inter-construct correlation. Therefore, discriminant validity has been established (Fornell and Larcker, 1981). With regard to variance-based structural equation modelling, Henseler et al. (2015) argue that the Fornel and Lacker criterion alone is not conclusive on discriminant validity. They provide three Heterotrait-Monotrait Ratio (HTMT) criteria for determining discriminant validity: HTMT specificity ratio of 0.90, HTMT specificity ratio of 0.85 and HTMT inference score ranging from -1 to 1 (-1 < HTMT < 1) as an indication of distinctiveness. From Table 2, all the HTMT correlations fall were all below 0.85. Thus, discriminant validity has been established for the four-construct model.

Table 2: Discriminant Validity (Square root of AVEs in diagonal-bold)

Construct	Fornell-Larcker Criterion				HTMT Criterion			
	1	**2**	**3**	**4**	**1**	**2**	**3**	**4**
Custom Response	**0.754**							
EO	0.587	**0.725**			0.757			
Operational Performance	0.328	0.578	**0.868**		0.342	0.687		
SC Utilisation	0.365	0.26	0.542	**0.734**	0.38	0.359	0.585	

Source: Field Test Data, (2020)

3.8.2 Test of Reliability of Scale

Composite Reliability (CR) is evaluated to evaluate the internal consistency reliability of the construct measures. CR shows how well constructs are described by the indicators in the measurement model. Hey and Chin (1998) recommends a threshold of 0.7 and the indicators consider that values above this number are well described. To refer to the degree of variable error in a calculation, the term reliability is used. Reliability is the degree for which variable errors are free from a calculation. This is expressed as repetitive steps display minimal variance in the same consistent trait in the same objects (Edwards & Kenney, 1946; Bhattacherjee, 2012).

CR gives a more acceptable indicator of internal durability of accuracy than, for example, Cronbach for two reasons. First, unlike Cronbach's alpha CR, it does not presume that all indicator loadings in the population are equal, which is consistent with the working concept of the PLS-SEM algorithm that prioritizes indicators during model estimation based on their individual reliability. Second, Cronbach is susceptible to the number of objects on the scale and appears to neglect the durability of internal continuity (Hair, Black, Babin, Anderson, & Tatham, 2010; Hair, Hult, Ringle, & Sarstedt, 2014).

3.9 Pilot Study

A pilot test of the instrument was carried out with a sample of 50 firms. This was to find out how respondents would react to the questionnaire, whether items are easy to comprehend if the number of items on each section is adequate, in case some items are not likely to be responded, to ensure the workability of the proposed method of data analysis and to also assess the validity and reliability of the constructs. Analysis of the 47 out of 50 administered questionnaires collected indicates that all variables meet the minimum of 0.6, 0.7, and 0.50 for Cronbach’s alphas, composite reliabilities, and average variance respectively as suggested by Hair et al., (2016) for exploratory study. Therefore, convergent validity has been adequately met. The feedback from the pre-test indicates that the questionnaire was appropriate to be used to collect the desired information.

3.10 Data analytical procedure

The data collected was analysed after thorough cleansing and processing have been done. To analyse the close-ended questions, the Statistical Package for Social Sciences software was used. The data were summarized using frequency tables and then graphically represented using bar and pie graphs. To analyse the items of the questionnaire, statistical weights were added to the responses of the items. For the easiness of interpretation, the larger number is assigned the most positive weights. Thus, “Strongly agree” was assigned a score of “1”, “Disagree” a score of “2”, “Neutral” a weight of “3”, a weight of “4” was assigned to “agree” and finally, a point of “5” was given to “Strongly agree”. Mean was used as a measure of central tendency for that data and standard deviation to assess the variability in the data.

3.10.1 Step One: Data cleaning and Coding

Of the 350 questionnaires administered, 324 were returned. Upon receipt of the questionnaires, all incomplete filled questionnaires were eliminated as part of the data screening processes. The screened data were entered into IBM SPSS version 25 as part of the coding process. Coding and data cleaning were then conducted to remove all possible data entry errors and outliers from the data. This resulted in a usable total questionnaire of 312, representing 89% response rate. After this, the researcher proceeded to conduct the test for non-response bias.

3.10.2 Step Two: Test for Non-Response Bias

The researcher assessed the suitability of data for the analysis to be conducted. To test for non-response bias, the researcher compared the mean values of questionnaire responses received early with those which arrived late. The result of this test is presented in Chapter Four of this study. Exploratory Factor Analysis test was performed next.

3.10.3 Step Three: Test for Exploratory Factor Analysis

The data was subjected to exploratory factor analysis with Varimax rotations procedure to know the underlying factor structure covering SC utilization and operational performance. The exploratory factor analysis with the extraction of factors with Eigen values greater than one resulted in 5 initial factors following Varimax rotation. The results are therefore presented in Chapter Four.

3.10.4 Step Four: Test for Common Method Variance Bias (CMB)

Reio (2010) defines common method bias as the quantity of correlation existing among variables that may be generated through the use of the same procedure (survey) for measuring each variable. The problem of common method bias or common method variance has attracted attention in recent decades. According to Dosty and Glick (1998), common method bias does occur when the systematic variance is introduced into the measures by the measurement technique used by the researcher. This error could bias the estimated relationship existing among variables in a structured way such as inflating or deflating the estimated relationship existing among variables of interest (Jakobsen& Jensen, 2015). This error may lead to a false internal consistency which is a manifest correlation between the variables created by their source. It also tends towards being a threat to the validity of the data when respondents answer all survey items at a go (Burtons-jones, 2009). CMV is therefore a problem that researchers should control in all possible ways (Podsakoff et al.).

Even though this study used a single survey questionnaire instrument, some measures were taken to avoid CMV bias. First, a number of the statements in the questionnaire administered were worded negatively as a way of checking if respondents were indeed paying attention to questions before answering them. Besides, an exploratory factor analysis (EFA) with the extraction of only one factor was performed per the recommendation by Harman (1967). Only one factor is extracted to assess whether a single factor can account for most of the covariance. If no single factor surfaces to account

for most of the covariance, then CMV is not a prevalent issue in the study (Chang et al., 2010).

3.10.4 Step Five: Test for Normality

Additionally, test for normality of data distribution was undertaken. This study followed the approach adopted by Lings and Greenly (2010) and recommended by Hair et al. (2013) by conducting test for Skewness, Kurtosis, Komogorov-Smirnov test and Shapiro-Wilk test. For a data set to be normally distributed, Skewness and Kurtosis should be zero and Komogorov-Smirnov test and Shapiro-Wilk test should not be statistically significant. All the above analyses were conducted with the help of IBM SPSS version 20 software.

3.10.5 Partial Least Squares Structural Equation Modelling (PLS-SEM)

Partial Least Squares Structural equation modelling (PLS-SEM) is applied to this research to understand the causal relationship between SC utilization and firm performance with Entrepreneurial orientation and customs response serving as moderating variables. PLS-SEM allows researchers to model and estimate complex cause and effects relationships with both latent (blue circles from figure 3.1) and observed variables (yellow rectangles from figure 3.1). The observed variables such as questions on a questionnaire are used to measure and estimate latent variables that cannot be measured directly (e.g. Performance, satisfaction). PLS consist of the inner model or the structure model and the outer model or measurement model (Ringle et al., 2005). The structural model defines the correlation between latent variables whereas the measurement model identifies the relationship between latent and observed variables.

This multivariate technique for measuring relationships among latent variables is used in this study for the following reasons: (1) It places little demand with regard to the sampling distribution and size (Chin, 1998). (2) Normality diagnostics showed that the data is not normally distributed (Hair et al., 2016). (3) It is used for causal predictive analysis (Calvo-

Mora et al., 2005). (4) It assumes that the explanation of the observed measured variance is necessary and thus accounts for measuring error (Hair et al., 2016). It is applicable where existing theory is limited (Acedo& Jones, 2007; Hair et al., 2017). The technique of estimation for PLS-SEM is the ordinary least Squares (OLS) regression method. This is known to be variance based on Structural Equation Modelling (SEM). Smart PLS (3.3.2) software was used to analyse the reliability and validity of the measurement model and the structural model.

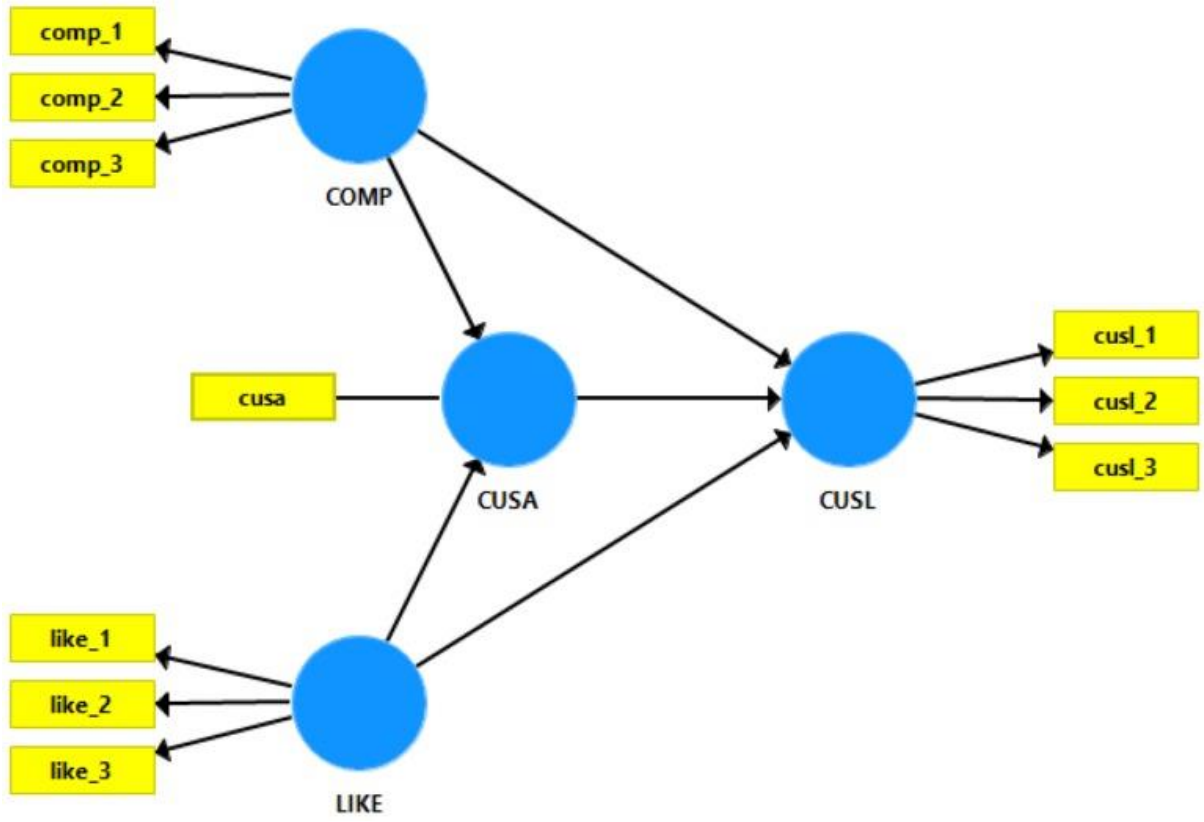


Figure 3.1: Structural model showing regressing weights (inner model) and factor loadings (outer model)

3.10.5.1 The Structural Model Theory

The structural model theory denotes the latent variables to be considered in the analysis of a certain phenomenon and their relationships. The positioning and the sequence of the constructs are usually based on theory and the experience of the researcher (Falk & Miller, 1992). The sequence usually goes from left to right when researchers develop PLS models. The latent variables on the left-hand side are the independent variables whereas the dependent latent variables are on the right-hand side. Latent variables could, however, be used in a model as both independent and dependent variable (Haenlein& Kaplan, 2004). A latent variable serving as a dependent variable or both dependent and independent variable (Endogenous latent variable) always has error terms accompanying it which reflect the sources of variances not captured by the respective antecedent construct(s) in the model (Diamantopoulos, 2011). In PLS-SEM, the latent variable that only serves as an independent variable also does have an error term. However, this error term is restricted to zero because of the way the method treats the (formative) measurement model of this construct. The strength of the relationships between latent variables is denoted by path coefficients, and the coefficients are the result of regressions of each endogenous latent variable on their direct predecessor constructs.

3.10.5.2 Assessment of structural model

The coefficient of determination (R2) for the endogenous latent variable is a relevant consideration for analysing the internal structural model. The remaining parameters in the PLS structural equation model are the evaluation of the predictive relevance of the model (Q2), mediating effects, multicollinearity, effective size (f2), and the significance of the path coefficients (β).

3.10.5.2.1 Measurement of the Coefficient of Determination

In the endogenous framework of the structural model, the coefficient of determination measures the overall effect size and variance and, therefore, measures the predictive

accuracy of the model. A coefficient of determination value of (R2) value of 0.75 is considered substantial. A value of 0.5 is considered moderate whereas a value of 0.25 is considered weak (Henseler et al., 2009; Hair et al., 2013).

Predictive relevance of the Model (Q2)

Q2 is a value used in statistics to serve as a measure of the quality of the PLS path model. Q2 values measured are expected to be either greater or equal to zero for a given endogenous latent construct.

Effective size (f2)

Hensler et al. (2009) define effective size as the "increase in R2 relative to the proportion of variance of the endogenous latent variable that remains unexplained". The effective size of the model (f2) measures the degree of the impact of each exogenous latent construct on the endogenous latent construct. The value of the coefficient of determination changes with a deletion of an exogenous latent variable from the path model and thus determines whether the removal of the independent construct has a significant influence on the value of the latent endogenous construct. According to Conhen (1998), the effect sizes of 0.02, 0.15, and 0.35 indicate small, medium and large effects, respectively.

Estimation of Path Coefficients (β)

The PLS structural model has individual path coefficients (β) analogous to standardized coefficients of ordinary least squares regression. The coefficient is a representation of the expected change in the dependent latent construct for a unit increase in the independent construct. The higher the path coefficient, the higher the magnitude of effect on the endogenous latent variable. However, the statistical significance of the value is as important as the value of the coefficient. Thus, a bootstrapping method with 5000 sub-

samples was employed to test the significance of the coefficient. The result of the test is presented in Chapter Four.

3.11 Ethical consideration

The researcher observed ethical considerations by obtaining a consent letter from the Nobel International Business School and ensuring that the respondents willingly accepted to respond to the interview. Thus, the consent of the respondents was sought. The researcher also ensured that the survey was conducted at the convenience of the respondents including the place desired by the respondents. Also, the researcher made sure the interviews did not pose any harm to respondents, respected the privacy of respondents and assured them of anonymity and confidentiality of the responses provided. The researcher also assured the respondents that their identities would not be disclosed. Full disclosure of the purpose of the research was made to respondents

3.12 Summary

This section of the study discussed the tools and techniques used in chieving the objectives of the study. This entails the methods used. It covered the philosophical basis of the study, the research design, source of data and the research approach. It also discussed the sample and sampling technique as well as the methods of data collection. The data management and analytical tools were also discussed. Research ethics were also considered.

Chapter 4

Analysis & Results

4.0 Introduction

This chapter presents the results of data analysed from questionnaires administered on the field. A final sample size of 312 managers/employees of foreign trade firms in Ghana was used to examine the effects of SC utilisation on operational performance. The chapter presents the results on background information of respondents, exploratory factor analysis and tests the developed conceptual framework using partial least squares structural equation modelling (PLS-SEM) in order to find answers to the study hypotheses. The structural equation modelling procedure involves confirmatory factor analysis and structural model and hypothesis testing.

4.1 Respondents' Background Information

This section presents the demographic characteristics of the respondents. Key background information discussed in this section include gender, age, and educational background as shown in **Table 3**.

4.1.1 Gender of Respondent

The majority (78%) of the respondents were males whereas the rest (22%) were females. The study reflects the fact that a majority of clearing agents at the ports are males (See Table 4.1 above).

4.1.2 Age Group of Respondents

More than half (53.5%) of the respondents were between the ages of 30 and 39 years as shown in **Table 3** This is followed by those who were between the ages of 20 and 29 years (25.3%), 40 and 49 years (20.5%) and 50 years and above (0.7%). The age

distribution of the respondents is reflective of the employees who are actively involved in foreign trade in Ghana.

4.1.3 Educational background

Two in five (42.3%) respondents had diplomas whereas a further one in three (33%) respondents had a degree. About twenty-two per cent (22.4%) of the respondents had secondary school education whereas the rest had primary education as shown in **Table 3** The findings show that the majority of the respondents were knowledgeable enough to comment on the experiences regarding SC utilisation and operational performance.

Table 3: Background Information

Variables	Frequency (n)	Percentage (%)
Gender		
Male	243	77.9
Female	69	22.1
Total	**312**	**100**
Age group		
20-29 yrs	79	25.3
30-39 yrs	167	53.5
40-49 yrs	64	20.5
50-59 yrs	2	0.7
Total	**312**	**100**
Educational Background		
Primary	5	1.6
Secondary	70	22.4
Diploma	132	42.3
First Degree	103	33
Masters	2	0.7
Total	**312**	**100**

Source: Field Data (2020)

4.2 Firm Characteristics

This section presents the information on the respondents' firm characteristics. The information gathered includes firm age, firm size, number of years of experience in foreign trade, job title of entrepreneurs as summarized in **Table 4** as well as name of company and location of interview presented in Appendices A1 and A2.

4.2.1 Job title

The various job designations of the respondents are presented in Table 4. The main positions of freight forwarding managers (22.8%), import/export coordinator (22.4%), transport/logistics manager (18.3%), GC-Net/GCMS coordinator (17.9%), and delivery clerks (17.3%) amongst others. See Table 4.

4.2.2 Firm Size

Four in five (85.3%) respondents worked with firms that were small-sized with employees ranging from 6 to 29. About 13.5% of the respondents worked with firms that were micro-sized with employees ranging from 1 to 5, whereas the rest (1.3%) of them indicated that their firms were medium-sized with employees ranging from 30 to 99 as shown in Table 4.

4.2.3 Firm Age

Seven in ten (70.2%) of the respondents indicated that their firms have been in existence for 6 to 10 years. About 15.1% of them indicated that their firms have been in existence for a period between 11 and 15 years (15.1%), 1 and 5 years (13.5%) and above 15 years (1.3%). This shows that most of the firms have been involved in foreign trade for a long time. See Table 4 for details.

4.2.4 Number of years of experience in foreign trade

Seven in ten (70.2%) of the respondents indicated that their firms have been involved in foreign trade for 6 to 10 years. The rest of them indicated that their firms have been involved in foreign trade for a period between 11 and 15 years (14.7%), 1 and 5 years (14.1%) and above 15 years (1%). This shows that most of the firms have been involved in foreign trade for a long time. See **Table 4** for details.

Table 4: Firm characteristics

Variables	Frequency (n)	Percentage (%)
Job title		
Delivery clerk	54	17.3
Transport and Logistics Manager	57	18.3
Import and Export Coordinator	70	22.4
GC-Net/GCMS Coordinator	56	17.9
Freight Forwarding Manager	71	22.8
Other	4	1.3
Total	**312**	**100**
Number of employees (Firm Size)		
01-May	42	13.5
Jun-29	266	85.3
30-99	4	1.3
Total	**312**	**100.1**
Length of time in business (Firm Age)		
1-5yrs	42	13.5
6-10 yrs	219	70.2
11-15 yrs	47	15.1
16-20 yrs	3	1
21+ yrs	1	0.3
Total	**312**	**100.1**

Table 4 cont'd: Firm charactersitics

Variables	Frequency (n)	Percentage (%)
Number of years of experience in foreign trade		
1-5yrs	44	14.1
6-10 yrs	219	70.2
11-15 yrs	46	14.7
16-20 yrs	3	1
Total	**312**	**100**

Source: Field Data (2020)

4.3 Preliminary Analysis

This section discusses data screening, non-response bias, common method variance bias, and sample size adequacy as necessary quality test before proceeding with actual data analysis. Details of these procedures are discussed as follows:

4.3.1 Data screening

Of the 350 questionnaires administered, 324 were returned of which 312 were found to be usable. Initially, there were 303 usable and completely filled questionnaires received. However, 22 of the incompletely filled questionnaires were returned to the entrepreneurs to complete the questionnaires but only 9 were returned. Thus, 312 of the administered questionnaires were found to be usable for analysis. This helps to eliminate missing values and to gain some critical insights about the data characteristics and analysis, according to Hair, Anderson, Tatham and Black (1998). Also, during recoding, some negatively worded statements were reverse coded.

4.3.2 Non-response Bias

It is important to establish that the opinions of the non-respondents to this survey research would not significantly differ from those who volunteered to participate. As a result, the researcher compared the mean values of the questionnaire scale items between respondents who answered the questionnaires within the first three days (early) and those who did so after follow-up and found no significant difference between the two categories as presented in Table 5 (Lings and Greenly, 2010). Therefore, non-response bias is not a problem with this data.

4.3.3 Common Method Variance Bias

It is important to establish that there is no bias resulting from the use of a single survey questionnaire instrument to test this study's conceptual model. First, some statements in the questionnaire administered were negatively worded (reverse direction) to check if respondents were actually paying attention to the statements before answering and as to whether or not answers provided would be honest. Next, this study followed recommendations by Harman (1967) to test for common method variance bias. The author recommends performing exploratory factor analysis (EFA) with the extraction of only one factor. The extracted 1 factor from this study had variance explained of 21.598% which is less than 50% variance; thus, showing absence of common method variance bias (Podsakoff et al., 2003; Harman, 1967).

Table 5: Independent Samples Test-Early and late respondents

Variables	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	**Sig.**	**t**	**df**	**Sig. (2-tailed)**
SCU1	0.091	0.764	-0.185	310	0.853
SCU2	2.134	0.145	1.08	310	0.281
SCU3	1.121	0.291	-0.177	310	0.86
SCU4	1.478	0.225	-1.587	310	0.114
SCU5	28.155	0	-2.314	310	0.021
SCU6	0.578	0.448	-0.878	310	0.381
SCU7	1.029	0.311	0.496	310	0.621
inn1	0.623	0.431	0.069	310	0.945
inn2	0.411	0.522	-0.419	310	0.676
inn3	2.966	0.086	-0.849	310	0.397
pro1	0.042	0.838	-0.464	310	0.643
pro2	0.611	0.435	-1.166	310	0.244
pro3	0.028	0.866	-0.222	310	0.824
rsk1	0.133	0.716	-1.298	310	0.195
rsk2	2.243	0.135	-1.783	310	0.076
rsk3	1.857	0.174	-0.978	310	0.329
aut1	0.354	0.552	-1.138	310	0.256
aut2	0.848	0.358	0.337	310	0.736
aut3	0	0.987	-1.3	310	0.195
CR1	0.176	0.675	-1.555	310	0.121
CR2	1.056	0.305	-1.946	310	0.053
CR3	0.505	0.478	-0.817	310	0.415
			-0.818	310	0.414
CR4	6.368	0.012	-1.09	310	0.276
CR5	0.96	0.328	-0.345	310	0.73
OP1	0.359	0.55	-1.61	310	0.108
OP2	0.006	0.939	-0.577	310	0.565
OP3	0.075	0.784	-0.591	310	0.555
OP4	2.199	0.139	0.318	310	0.751

Source: Field data (2020)

4.4 Descriptive statistics of all variables

The section provides the descriptive statistics of the seven main constructs of the study made up of dependent variable operational performance, independent variable SC utilisation, moderating variables of customs response and four dimensions of entrepreneurial orientation identified including innovativeness, proactiveness, risk-taking and autonomy. All the constructs had questions that were formulated on a 5-point Likert Scale ranging from (1=strongly disagree) to (5= strongly agree). The descriptive statistics results are presented in the form of means and standard deviations in **Table 6**.

Table 6: Descriptive Statistics for All Constructs (N=312)

Constructs	**Min.**	**Max.**	**Mean**	**S.D**
Operational Performance	3	5	3.82	0.448
SC Utilisation	2.1	5	3.941	0.521
Customs Response	3.4	5	4.006	0.385
Entrepreneurial Orientation				
Innovativeness	2	5	3.712	0.516
Proactiveness	2	5	3.589	0.583
Risk-taking	2.3	5	3.775	0.435
Autonomy	1.7	5	3.855	0.455

Source: Field Data (2020)

From **Table 6**, a mean average of 3.820 was obtained for operational performance. Since this value is approximately 4 (agreed), we could confidently deduce that the clearing agents rate their operational performance as highly effective. Similarly, there was high SC utilisation by the clearing agents. Customs response to the needs of clearing agents was also evidently high as indicated by the clearing agents surveyed. There was also a high degree of perceived entrepreneurial orientation practised by the clearing agents with

the most evident of the four dimensions being autonomy, followed by risk-taking, innovativeness, and proactiveness in descending order of importance.

4.5 Exploratory Factor Analysis (EFA)

In order to identify the underlying constructs measuring SC utilisation and operational performance, exploratory factor analysis was performed on the study data. All the twenty-eight (28) scale items (questions) on the questionnaire were subjected to principal component analysis followed by both Varimax and Direct Oblimin rotations. The original results containing all 28 items are presented in Appendix Table A3 for Varimax rotation, and Appendix Table A4 for Oblimin rotation. Following recommendations by Hair et al. (1998), Hair et al. (2013), Hair et al. (2016), items with low loadings (loadings <0.50) and significant cross loadings into constructs they were not intended for were eliminated sequentially. The final results of the principal component analysis with Varimax rotation following data purification/ cleaning are presented in **Tables 7** and **8**.

From **Table 7** a Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy value of 0.774 as well as a Bartlett's Test of Sphericity of approx. Chi-square=1009.259, df=105, p=0.000 were obtained. These results show that the sample is adequate for factor analysis and that variables correlate well. The analysis produced five (5) factors after purification/cleaning shown in **Table 7**. The five extracted factors account for 61.5% of the total variance explained.

From **Table 8**, three of the five factors had Cronbach's coefficient alpha (α) of approximately 0.60 or higher which is acceptable for exploratory study (Hair et al., 1998; Hair et al., 2016). As a result, the third and fifth factors were eliminated due to low internal consistency. The five items which loaded into factor 1 may be termed as "SC Utilisation". Also, the three items which loaded into factor two were mainly items related to "Operational Performance". Finally, the two items which loaded into factor four may be termed as "Proactiveness". Therefore, only the three retained factors namely SC utilisation, operational performance, and proactiveness were used for further analysis.

Table 7 EFA with Varimax rotation

	Factors				
Items	**1**	**2**	**3**	**4**	**5**
My company uses electronic data interchange (EDI) in trading operations	**0.679**	0.109	-0.02	0.2	0.07
My company uses enterprise resource planning (ERP) to facilitate trade among partners	**0.741**	0.008	-0.168	0.072	0.183
My company uses advanced planning and optimization (APO) in trading operations	**0.753**	0.103	0.072	0.065	-0.114
My company uses a customer relationship management system (CRM) to facilitate trade among partners	**0.81**	0.171	-0.08	0.035	-0.023
My company uses transportation management systems (TMS) to facilitate trade among partners	**0.714**	0.088	0.131	0.138	0.021
In the past 5 years, new lines of products or services has been marketed by my organisation	-0.068	-0.022	**0.801**	0.023	0.013
My organisation is very seldom the first business to introduce new products/services, administrative techniques, operational technologies etc	0.203	0.102	0.135	**0.806**	-0.045
My organisation typically seeks to avoid competitive classes, preferring a 'live-and-let-live' posture	0.153	0.083	-0.137	**0.804**	0.053

KMO=0.774; Barletts Test Chi-square=1009.259, df=105, p=0.000; Total variance explained=61.51%

Table 7 cont'd: EFA with Varimax rotation

Items	Factors				
	1	**2**	**3**	**4**	**5**
Top managers of my organisation believe that owing to the nature of the environment, it is best to explore it gradually via cautious, incremental behaviour	0.131	0.19	0.144	0.081	**0.668**
My organisation typically adopts a cautious 'wait-and-see' posture in order to minimize the probability of making costly decisions	-0.074	-0.233	0.148	-0.109	**0.659**
Individual attention, customized service and convenient trade transaction hours are provided by customs to my firm	0.051	0.162	**0.701**	-0.019	0.308
Customs officials are willing to help customers and provide prompt services	-0.001	0.339	-0.453	0.084	**0.525**
My firm provides on- time and accurate deliveries	0.12	**0.822**	0.025	0.042	-0.018
My firm has the best delivery speed and flexibility	0.081	**0.827**	0.037	0.08	-0.064
Our company can quickly respond to changes in service demand	0.231	**0.598**	0.006	0.112	0.292

KMO=0.774; Barletts Test Chi-square=1009.259, df=105, p=0.000; Total variance explained=61.51%

Source: Field Data (2020)

.

Table 8: Internal consistency of final revised structure

Factors and Items	**Loadings**	**α**	**Decision**
Factor 1 (SC Utilisation)		0.807	Retained
My company uses electronic data interchange (EDI) in trading operations	0.679		
My company uses enterprise resource planning (ERP) to facilitate trade among partners	0.741		
My company uses advanced planning and optimization (APO) in trading operations	0.753		
My company uses a customer relationship management system (CRM) to facilitate trade among partners	0.81		
My company uses transportation management systems (TMS) to facilitate trade among partners	0.714		
Factor 2 (Operational Performance)		0.7	Retained
My firm provides on- time and accurate deliveries	0.822		
My firm has the best delivery speed and flexibility	0.827		
Our company can quickly respond to changes in service demand	0.598		
Factor 3 (Innovativeness/Custom Response)		0.499	**Deleted due to low content validity**
In the past 5 years, new lines of products or services has been marketed by my organisation	0.801		
Individual attention, customized service and convenient trade transaction hours are provided by customs to my firm	0.701		

Source: Field Data (2020)

Table 8 cont'd: Internal consistency of final revised structure

Factors and Items	Loadings	α	Decision
Factor 4 (Proactiveness)		0.6	Retained
My organisation is very seldom the first business to introduce new products/services, administrative techniques, operational technologies etc	0.806		
My organisation typically seeks to avoid competitive classes, preferring a 'live-and-let-live' posture	0.804		
Factor 5 (Risk-taking)		0.303	**Deleted due to low content validity**
Top managers of my organisation believe that owing to the nature of the environment, it is best to explore it gradually via cautious, incremental behaviour	0.668		
My organisation typically adopts a cautious 'wait-and-see' posture in order to minimize the probability of making costly decisions	0.659		
Customs officials are willing to help customers and provide prompt services	0.525		

Source: Field Data (2020)

4.6 Correlation Matrix

The Pearson correlations between the three main constructs and control variables (firm age and firm size) are presented in **Table 9** This helps to determine whether there are possible multicollinearity or not in the data set after the exploratory factor analysis procedure.

Table 4.7: Correlation Matrix

Variables	**1**	**2**	**3**	**4**	**5**
Correlation values					
1. Operational Performance	1				
2. SC Utilisation	0.311**	1			
3. Proactiveness	0.25**	0.35**	1		
4. Firm Age	0.11*	-0.05	0.05	1	
5. Firm Size	-0.04	0.19**	0.29**	0.23**	1
Significance values(one-tail)					
1. Operational Performance					
2. SC Utilisation	0				
3. Proactiveness	0	0			
4. Firm Age	0.03	0.19	0.21		
5. Firm Size	0.25	0	0	0	

Note: ** and *Correlation is significant at $p<0.01$ and $p<0.05$ (one-tail)

Source: Field Data (2020)

From **Table 9**, a low to moderate correlation exists between the three main constructs and control variables. Specifically, all the correlation values were less than 0.4, with the highest being the positive correlation between proactiveness of entrepreneurs and SC utilisation of 0.35 ($p<0.01$). Also, a significant correlation exists between SC utilisation and operational performance ($r=0.31$, $p<0.01$), and proactiveness of entrepreneurs and operational performance ($r=0.25$, $p<0.01$).

4.7 Determining the Choice of Analysis/SEM

4.7.1 Normality diagnostics

Normality test was conducted by examining skewness, kurtosis, Komogorov-Smirnov test and Shapiro-Wilk test (Hair et al., 2013 p.71). The test of normality of the three main constructs as well as firm age and firm size are presented in **Table 10.** Analysis of the constructs showed that four of the five variables had kurtosis > ±1.0. More importantly, the Komogorov-Smirnov test of normality showed that $0.136<\alpha<0.496$; $p<0.01$ for all items. Similarly, the Shapiro-Wilk test of normality showed that $0.471<W< 0.940$; $p<0.01$ for all items. The implication of these results is that the data violates multivariate normality assumptions. Thus, the researcher utilised structural equation modelling technique of partial least squares (PLS-SEM) to test the study's conceptual framework. The alternative technique for conducting structural equation modelling is the use of the covariance method (AMOS and LISREL). However, these techniques require multivariate normality of data. Though, there is a weighted least square technique within AMOS or LISREL for testing a model whose data is non-normal, these techniques require very large sample size, usually above 1000. On the other hand, PLS-SEM is not affected by sample size nor distribution of data (Hair et al 2016; Hair et al., 2011; Chin and Newstead, 1999).

Table 10: Normality Diagnostics

Variables	**Mean**	**S.D.**	**Skewness**	**Kurtosis**	**Kolmogorov-Smirnov**			**Shapiro-Wilk**		
					Statistic	**df**	**p**	**Statistic**	**df**	**p**
Operational Performance	4.287	0.474	0.245	-1.04	**0.247**	312	0	**0.881**	312	0
SC Utilisation	4.044	0.526	-0.557	1.57	**0.136**	312	0	**0.94**	312	0
Proactiveness	3.514	0.734	-0.485	0.245	**0.175**	312	0	**0.94**	312	0
Firm Age	2.04	0.593	0.64	2.518	**0.367**	312	0	**0.732**	312	0
Firm Size	1.88	0.365	-1.489	2.783	**0.496**	312	0	**0.471**	312	0

Source: Field Data (2020)

4.7.2 Reasons for choice of PLS-SEM

There are two main approaches/methods in structural equation modelling. These include covariance-based method (using software such as Amos or LISREL) and variance-based method (using partial least squares). Partial least squares structural equation modelling (PLS-SEM) was adopted for this study for the following reasons:

1. Normality diagnostics showed that the data is not normally distributed (Hair et al 2016; Chin and Newstead, 1999; Wold, 1982).

2. PLS is suited for predictive models using much smaller or much larger samples (Chin, 1988; Hair et al., 2011).

3. PLS method is applicable where existing theory is limited (Acedo and Jones, 2007; Ainuddin et al. 2007; Tsang, 2002; Hair et al., 2017).

4. PLS is used for theory application (Hair et al., 2016; Hair et al., 2017).

4.8 Structural Equation Modelling-using PLS-SEM

Having examined the factor structure, the next stage is to validate the extracted factors through the process of confirmatory factor analysis then subsequently test the conceptual model using structural equation modelling. To perform confirmatory factor analysis and structural equation modelling, the researcher utilised PLS-SEM (SmartPLS Release: 3.2.7) (Ringle et al., 2015). The significance of each path was tested using bootstrap t-values (5000 sub-samples) (Efron and Gong, 1983; Tortosa et al., 2009), a procedure available in PLS.

4.8.1 Confirmatory Factor Analysis (CFA)

This process involves testing for convergent and discriminant validity of the extracted factors (Hair et al., 2016). PLS-SEM was applied to test the model involving SC utilisation, operational performance, and entrepreneurial proactiveness, as well as the control variables (firm age and firm size).

4.8.1.1 Convergent Validity

The results of Cronbach's alphas, composite reliabilities and average variance extracted estimates are presented in **Table 11**. The variables include operational performance, SC utilisation, proactiveness, firm age, firm size and the interaction between SC utilisation and proactiveness. All variables meet the minimum of 0.6, 0.7 and 0.50 for Cronbach's alphas, composite reliabilities and average variance, respectively, as suggested by Hair et al. (2016) for exploratory study. Therefore, convergent validity has been adequately met.

Table 11: Summary Convergent and Discriminant Validity (Square root of AVEs in diagonal-bold)

Construct	Convergence Validity			Fornell-Larcker Criterion						Heterotrait-Monotrait Ratio (HTMT) 0.85 Criterion					
	α	**CR**	**AVE**	**1**	**2**	**3**	**4**	**5**	**6**	**1**	**2**	**3**	**4**	**5**	**6**
1. Operational Performance	0.701	0.828	0.617	**0.785**											
2. SC Utilisation	0.811	0.868	0.569	0.329	**0.754**					0.414					
3. Proactiveness	0.6	0.821	0.696	0.251	0.352	**0.834**				0.393	0.521				
4. Firm Age	1	1	1	0.102	-0.048	0.047	**1**			0.128	0.054	0.062			
5. Firm Size	1	1	1	-0.054	0.189	0.289	0.233	**1**		0.095	0.211	0.385	0.233		
6. Pro*SCU	1	1	1	0.09	-0.242	-0.03	0.049	-0.109	**1**	0.119	0.264	0.04	0.049	0.109	

Source: Field Data (2020)

4.8.1.2 Discriminant Validity

Discriminant validity is met by the fact that the square root of the average variance extracted estimate for each of the five variables is greater than the inter-variable correlations between them (Fornell and Lacker, 1981; Hair et al., 2016) as presented in **Table 12**. Recent research on variance-based structural equation modelling has suggested that the Fornel and Lacker criterion alone is not conclusive on discriminant validity (Henseler et al 2015; Osei-Frimpong, 2017). As a result, the author performed the heterotrait-monotrait ratio (HTMT) of the correlations to be assessed using a specificity criterion rate of 0.85 (HTMT0.85). The results also presented in **Table 12** and Figure **4.1** show that none of the correlations exceeded 0.85. As a result, the model demonstrates discriminant.

Common Method Bias

It is important to establish that common method bias does not exist in the data. This study follows recommendations by (Kock, 2015, p.7) for testing CMB in partial least squares structural equation modelling. The author argues that CMB does not exists in the data if the variance inflation factors (VIFs) of the inner structural model are all less than 3.3 (or at worse less than 5). The VIF values of the structural model are presented in **table 12**.

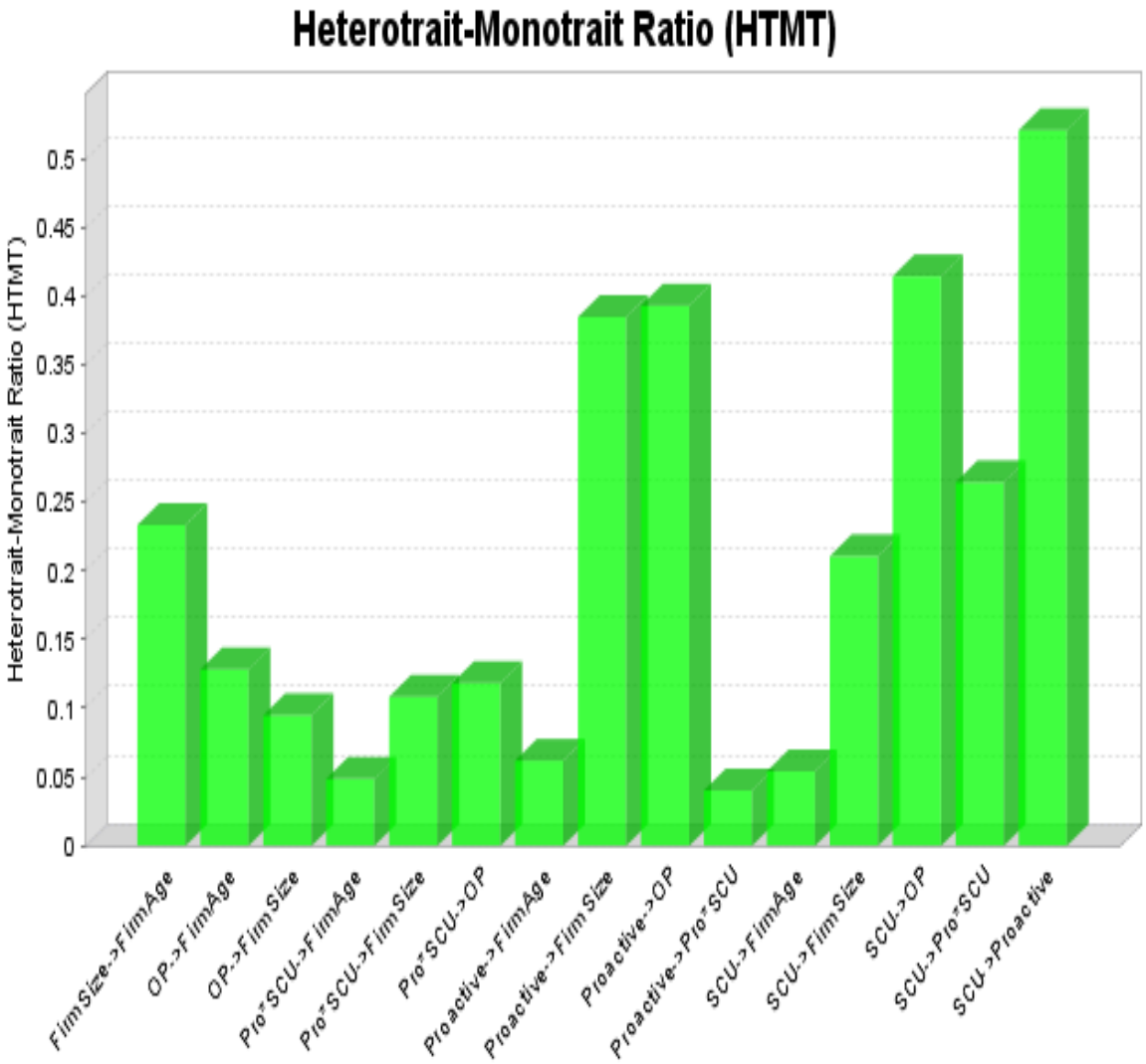


Figure 4.1: HTMT0.85 results

Table 12: CMB Test Showing VIFs

Constructs	OP (VIF)	SCU (VIF)	Proactive(VIF)	Firm Age(VIF)	Firm Size(VIF)
Operational Performance	_	1.1	1.16	1.12	1.07
SC Utilisation	1.16	_	1.19	1.19	1.2
Proactiveness	1.21	1.19	_	1.25	1.16
Firm Age	1.07	1.08	1.1	_	1.01
Firm Size	1.17	1.18	1.13	1.12	_

Source: Field Data (2020)

From **Table 12**, VIF values calculated for each of the five variables were below 0.33, showing strong evidence of the absence of CMB in the dataset.

4.8.2 Structural Model & Hypothesis testing

After confirmatory factor analysis, the next stage is to perform the actual structural equation modelling (path analysis) (Lings & Greenly, 2010). The structural model examines the relationship that exists between SC utilisation and operational performance and is moderated by proactiveness of entrepreneurs.

4.8.2.1 Structural Model

Figure 4.2 presents the results of the structural model for this study showing regression weights and factor loadings. All the model paths were statistically significant based on bootstrap t-values (5000 sub-samples) (Tortosa et al., 2009).

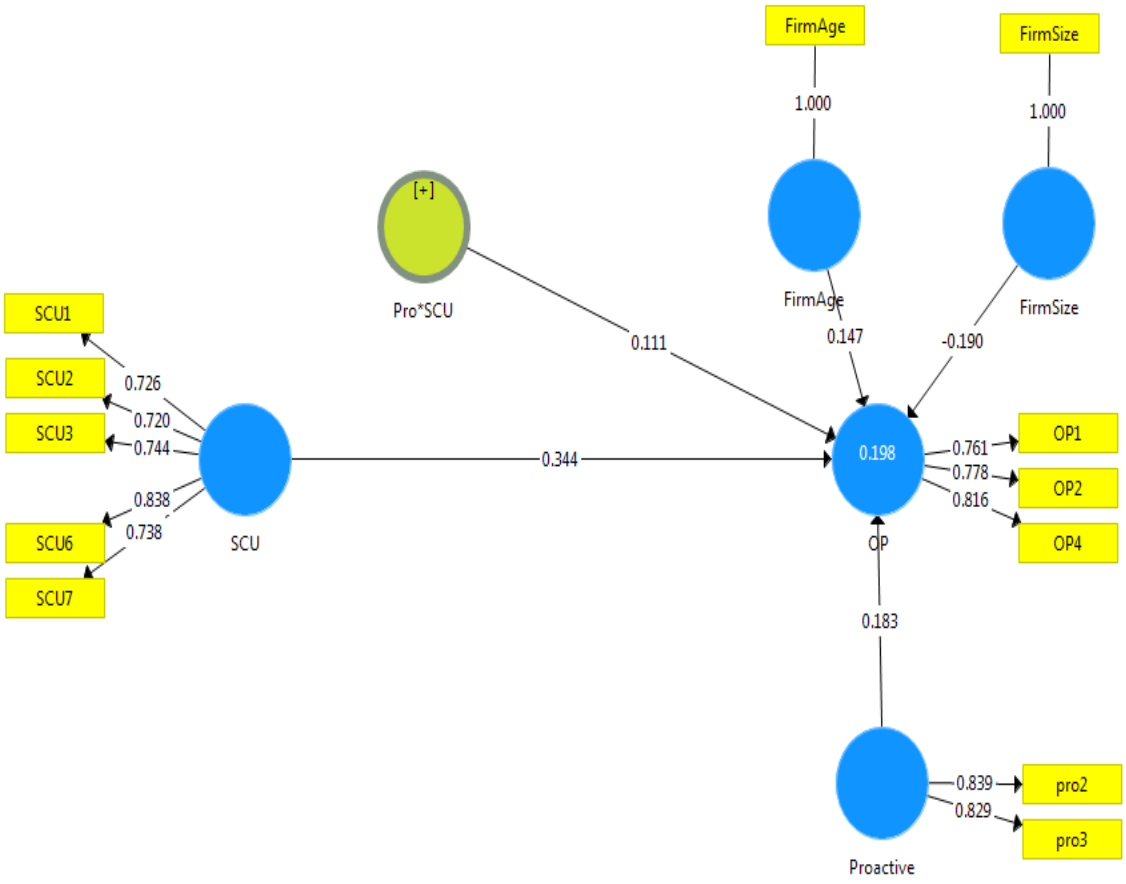


Figure 4.2: Structural model showing regression weights (inner model) and factor loadings (outer model)

Source: Field Data (2020)

4.8.2.2 Hypotheses testing

The study's hypotheses are as follows:

H1: There is a positive relationship between SC utilization and operational performance of firms in the Ghanaian foreign trade.

H2: The positive relationship between SC utilization and operational performance is higher when customs response is effective than when it is not effective.

H3: The positive relationship between SC utilization and operational performance is higher when risk taking is higher than when it is low.

H4: The positive relationship between SC utilization and operational performance is higher when Proactiveness is higher than when it is low.

H5: The positive relationship between SC utilization and operational performance is higher when innovativeness is higher than when it is low.

H6: The positive relationship between SC utilization and operational performance is higher when Autonomy of employees is higher than when it is low.

Since only three main constructs were retained following the application of EFA, the hypotheses test includes hypotheses 1 (H1) and 4 (H4). To test the hypotheses, four structural models were built. The first model involved the effects of the control variables (firm age and firm size) on operational performance. The second model involved a combination of the control variables and the independent variable, SC utilisation. The third model had the moderating variable, entrepreneurial proactiveness, added to the second model. The fourth model involved the effect of the interaction between SC utilisation and proactiveness added

to the third model to test for possible moderation. The results of the hypotheses test are presented in **Table 13** Full moderation results are presented in Appendix table A5.

Table 13: Hypotheses test results

Rival Models		**Control Variables: Model 1**	**CVs and IV: Model 2**	**CVs, IV and MVs: Model 3**	**Moderated effect Model 3**
Firm age performance	Operational	0.119*	0.157**	0.155**	0.147**
Firm size perfromance	Operational	-0.098	-0.162**	-0.192**	-0.190**
SC utilization	Operational performance		0.368**	-0.205**	0.344**
Proactiveness	Operational performance			0.195**	0.183**
SCU*PRO	Operational performance				0.111**
R^2	Operational performance	0.018	0.146	0.177	0.198
ΔR^2	Operational performance		0.128	0.031	0.021

Note: **Significant at p<0.01; *Significant at p<0.05 (one-tail)

Source: Field Data (2020)

The new model based on the output is given as

OperationalPerformance=0.157*FirmAge-
0.162*FirmSize+0.344*SCUtilization+0.195*Proactiveness+0.111*SCU*PRO

The hypotheses test results are explained as follows:

H1 – There is a positive relationship between SC utilization and operational performance of firms in the Ghanaian foreign trade.

A positive and significant relationship exists between SC utilisation and operational performance of firms in the Ghanaian foreign trade ($\beta=0.344$, $t=6.251$, $p<0.01$). This means a high SC utilisation in the Ghanaian foreign trade will subsequently lead to a high operational performance. Therefore, hypothesis H1 is supported in the present context.

H4 – The positive relationship between SC utilization and operational performance is higher when Proactiveness is higher than when it is low.

The interaction of entrepreneurial proactiveness with SC utilisation had a significant positive effect on operational performance ($\beta=0.111$, $t=3.315$, $p<0.01$). This implies that entrepreneurial proactiveness strengthens the relationship between SC utilisation and operational performance. Specifically, the positive relationship between SC utilization and operational performance is higher when Proactiveness is higher than when it is low, thus lending support to Hypothesis 4 (H4). The findings obtained for Hypotheses 4 is further explained in the moderation slope.

The green line represents high proactiveness whilst the red line represents low proactiveness, with the blue line being average (midpoint). Since the three lines are not parallel, there is evidence of moderation. Furthermore, since the green slope shows an increasing positive gradient unlike the red line, it can be concluded that the positive relationship between SC utilization and operational performance is higher when Proactiveness is higher than when it is low.

The green line represents high proactiveness whilst the red line represents low proactiveness, with the blue line being average or midpoint (**figure 4.3**). Since the three lines are not parallel, there is evidence of moderation. Furthermore, since the green slope shows an increasing positive gradient unlike the red line, it can be concluded that the positive relationship between SC utilization and operational performance is higher when Proactiveness is higher than when it is low.

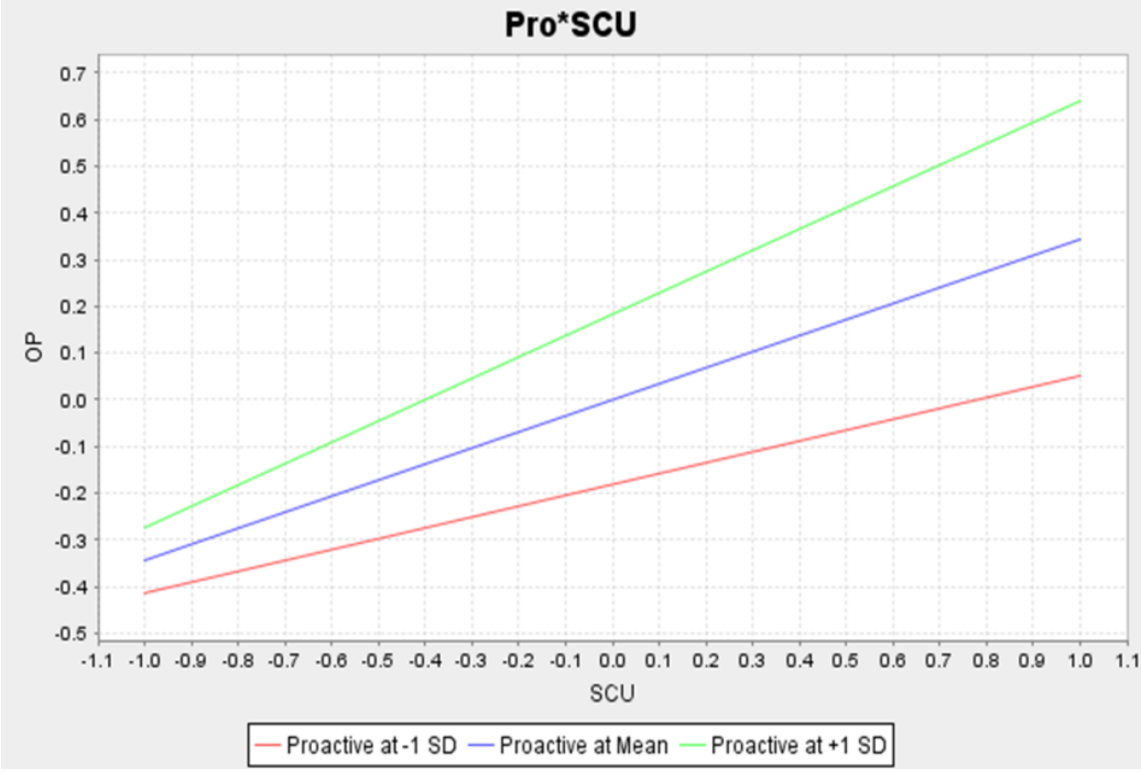


Figure 4.3: A moderation slope showing the moderation effect of proactiveness on SC utilisation and operational performance

Source: Field Data (2020)

4.8.2.3 Model Quality

Partial least squares structural equation modelling does not provide an overall model fitness information. The researcher assessed the structural model quality by examining the collinearity (VIF), coefficient of determination (R-square), effect sizes (f2), and Q2 (predictive relevance). The results are presented in Table 14.

Table 14: Predictive Accuracy (R2), Predictive Relevance (Q2) and Effect Sizes (f2)

Constructs	**R^2**	**Q^2**	**VIF(OP)**	**f^2(OP)**
Firm Age			1.07	0.03(Small)
Firm Size			1.18	0.04(Small)
SC Utilisation			1.23	0.12(Small)
Proactiveness			1.22	0.03(Small)
SCU*PRO			1.08	0.03(None)
Operational Performance (OP)	0.198	0.102		

Note: OP (Operational Performance)

Note: VIF<=5 is acceptable (Hair et al. 2014)

Source: Field Data (2020)

Multicollinearity

From **Table 14** multicollinearity statistics were calculated using VIFs for the inner structural model. All the variance inflation factors (VIFs) were lower than 5, which is recommended to prove absence of multicollinearity problems (Hair et. al. 2016). Therefore, the structural model does not present a collinearity problem.

Assessment of the level of R-Square

The coefficient of determination (R-square) is used to assess the amount of variance in the endogenous variable as explained by the exogenous variables used in the model. From Table 4.12, R-square of 0.198 was obtained for operational performance, implying that 20% of the variance in operational performance is explained by SC utilisation, entrepreneurial proactiveness, firm age and firm size.

Assessment of the effect sizes f-square

This study examined the effect sizes (f2) of each of the exogenous constructs in the model to determine the magnitude of their effect on the R2 values. The results are also presented in **Table 14** Just like traditional multiple regression, effect sizes (f2) values of 0.02, 0.15 and 0.35 show small, medium and large effects respectively (Cohen, 1988; Hair et al, 2016). In this study, small effect sizes were obtained for the effects of SC utilisation, proactiveness, firm age, firm size and interactions on operational performance.

Assessment of the predictive relevance Q-square

The Q2 (cross-validated redundancy) value for the model is also presented in **Table 14** (Hair et al., 2016; Chin, 2010). Q2 value of 0.102 was obtained for operational performance, which is greater than 0 showing predictive relevance (Hair et al., 2016; Chin, 2010).

Effects of the control variables - Additional contribution

Firm age and performance

This study deduced that a positive and significant relationship exists between the age of firm (or number of years in international trade) and operational performance (β=0.147, t=3.219, $p<0.01$). This implies that older firms, and for that matter firms that have been involved in international trade for longer periods of time, were significantly more likely to have better/high operational performance.

Firm size and performance

On the other hand, a significant negative relationship was obtained between firm size and operational performance (β=-0.190, t=2.973, $p<0.01$), implying that smaller firms were significantly more likely to have better/higher operational performance than larger firms.

4.9 Summary of hypotheses test results

Table 15 provides a summary of the hypotheses tested and conclusions made in this study. The two hypotheses tested were both supported in the present context.

Table 15: Summary of Hypotheses Assessment

Hypothesis	Definition	Standard Beta	Bootstrap t-value	Hypothesis results
H1	There is a positive relationship between SC utilization and operational performance of firms in the Ghanaian foreign trade	0.147**	3.219	Supported
H2	The positive relationship between SC utilization and operational performance is higher when customs response is effective than when it is not effective	_	_	not tested
H3	The positive relationship between SC utilization and operational performance is higher when risk taking is higher than when it is low	_	_	not tested
H4	The positive relationship between SC utilization and operational performance is higher when Proactiveness is higher than when it is low	0.111**	3.315	Supported
H5	The positive relationship between SC utilization and operational performance is higher when innovativeness is higher than when it is low	_	_	not tested
H6	The positive relationship between SC utilization and operational performance is higher when Autonomy of employees is higher than when it is low	_	_	not tested

Note: **p is significant at $p<0.01$

4.10 Chapter Summary

This chapter sought to find answers to the study's objectives and hypotheses. First original conceptual model examines the effect of SC utilisation on operational performance, moderated by customs response and entrepreneurial orientation. However, following the application of exploratory factor analysis, only SC utilisation, operational performance, and proactiveness dimension of entrepreneurial orientation had adequate content validity, and thus were used for hypothesis testing with structural equation modelling technique of partial least squares. The findings support the first hypothesis; thus, showing that a positive and significant relationship exists between SC utilisation and operational performance. Furthermore, entrepreneurial proactiveness was found to significantly moderate the positive relationship between SC utilisation and operational performance, thus lending support to the fourth hypothesis. These findings gave a new conceptual framework as shown in **Figure 4.4**.

NEW CONCEPTUAL MODEL BASED ON FINDINGS

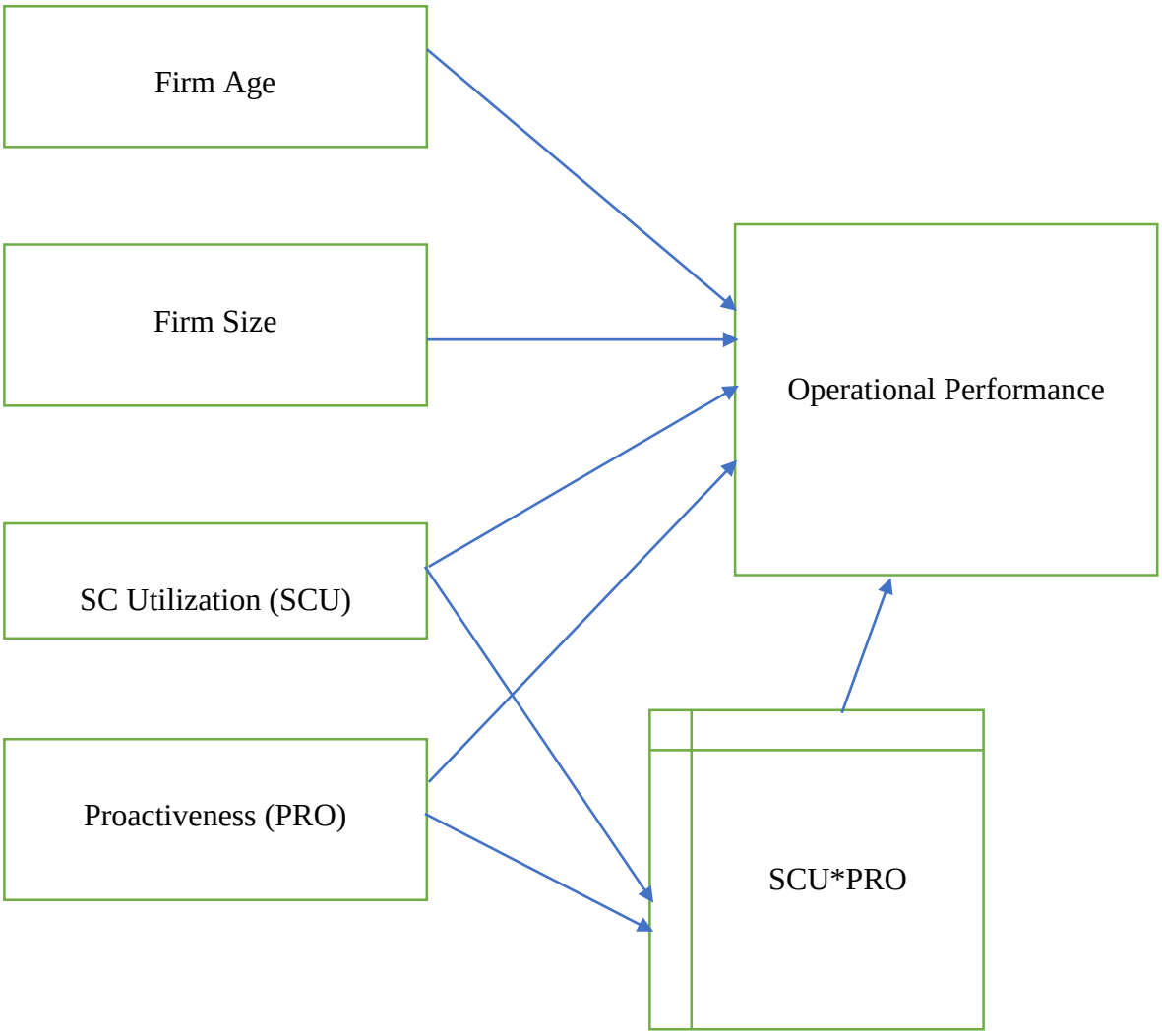


Figure 4.4: The new conceptual framework

Chapter 5

Summary, Discussions and Implication

5.0 Introduction

This section of the research is the concluding chapter; and it presents the summary of key findings, discussion of the findings in relation to prior literature and the implication of the study to practice and theory. The limitations, suggestion for future studies and the conclusions are also discussed in this section.

5.1 Summary of key findings

The main purpose of this study was to empirically test an integrated model to examine the effects of SCT utilization on Ghana's foreign trade firm performance, with entrepreneurial orientation and customs response as moderators. To do so, four key objectives were formulated to examine the direct relationship between SCT utilization of Ghana's foreign trade firm performance and the moderating role of entrepreneurial orientation and custom response SCT utilization and operational performance relationship.

5.1.1 Research Objectives

The research sought to achieve the following objectives:

1. To examine the relationship between SCT utilization and performance of customs brokers in the Ghanaian foreign trade sector;
2. To examine the moderating role of entrepreneurial orientation in the relationship between SC utilisation and performance

3. To examine the moderating role of customs response on the relationship between SC utilisation and performance

A gap in the literature showed that very little empirical attention had been given not only to the direct relationship between SCT utilization and operational performance, but also the moderating effect of entrepreneurial orientation and customs response in the relationship between chain technology utilization and operational performance particularly from Sub-Saharan Africa. To achieve these, six key hypotheses were formulated from the conceptual framework to examine the underlying relationships amongst the constructs as mentioned above. Following an extensive review of relevant literature, the various constructs as used in the proposed integrated framework were conceptualized following which subsequent hypotheses were developed. A total sample of 350 customs brokers working at both the airports and seaports in the Ghanaian foreign trade sector were selected to respond to the research instrument. Questionnaires were used as the data collection instrument to measure the variables for the hypotheses. The hypotheses were tested using PLS-SEM (Smart PLS-3). A total of six (6) hypotheses were stated, out of which four (4) were not tested due to low content validity. The remaining two tested were supported by the study.

5.2 Discussion of findings

This section of the research discusses the results of the study concerning the various research hypotheses tested. The discussions were based on the results obtained from PLS-SEM analysis. This section has two subsections. The first subsection discusses the research objective relating to the effect of the independent variables on the dependent while the second subsection explains the effects of the interaction on the dependent variable. From the SEM analysis, hypothesized relationships with p-value>0.05 were rejected while those with p-values<0.05 were accepted and discussed.

5.2.1 To examine the relationship between SCT utilization and the operational performance of customs brokers in the Ghanaian foreign trade sector

The first research objective and hypothesis examined the direct relationship between SCT utilization in Ghana's foreign trade firm performance. It was therefore hypothesized based on the literature that there is a positive relationship between SC utilization and operational performance of firms in the Ghanaian foreign trade. The empirical findings show that there is a positive and significant relationship between SC utilisation and operational performance of firms in the Ghanaian foreign trade space (β=0.147, t=3.219, $p<0.01$). Therefore, H1 is supported in the present context. This implies that high SC utilization in the Ghanaian foreign trade space will subsequently lead to a high operational performance. The findings of this study are consistent with the works of most of the researchers who have reported that there is a positive relationship between SCT utilization and firm performance (Liu et al., 2016; Ling & Ling, 2012; Ross et al., 2012). The results show that, all other things being equal, when there is a unit increase in SC utilisation, operational performance of firms in the Ghanaian foreign trade will increase by 14.7%.

The result is important and worthy to note because SCT utilization is believed to be very important to the performance of foreign trade firms. This result is in line with the concept of adoption and utilization of technology in SC management. It also draws inferences from the Technology Acceptance Model (TAM) and the Task-Technology Fit model (TTF). One of the many reasons for foreign trade firms to utilize SCT is that customers are becoming more competitive. They expect fast, timely delivery and simple return procedures for unnecessary shopping. This can be easily achieved when firms intentionally commit to the use of SCT. SCT tools, such as an integrated ERP solution that encompass all aspects of a business, provide cloud-based solutions, offer increased computing capacity, scalability and world-wide internet access are now being used by firms to enhance productivity.

The findings of Liu et al. (2016) corroborate the findings of this study. They found significant and positive relationship between the utilization of SCT and performance of firms with high levels of information sharing with their SC partners. For firms with lower levels of information sharing with their SC partners, the relationship between SCT utilization and delivery performance was barely significant.

Another study which is consistent with the current study's findings is from the works of Ross et al. (2012). Ross et al. contended that, when the infrastructure including technology in SC is implored well, firms tend to gain more returns and have good reputation. The researchers found that 33 out of the 89 countries used for the study had deficiencies in the issue of applying technology in their SC process whilst maintaining viable environment. They proceeded to conclude that firms and organisations must use technology in SC for increased financial and non-financial gains though these technologies must be environmentally friendly so that the environment is not depleted. Walker and Jones (2012) recommend that firms, especially global ones, must learn to embrace technology in their SC processes since it is the surest way of getting work done. However, care must also be taken to protect the environment by engaging in sustainable SC management since it is the only way the environment can be taken care of from the harsh realities of business operations.

Additionally, the findings from this study are in line with the study of Ling and Ling (2012). They also found significant and positive direct relationship between SC management practices, including technological innovation, and the performance of an organization. SCT has the tendency to improve performance of firms. However, the relationship is strengthened with innovation culture as a moderator (Amjad et al., 2020).

5.2.2 To examine the moderating role of custom response on the relationship between SC utilization and operational performance

The Hypothesis 2 which stated that the positive relationship between SC utilization and operational performance is higher when customs response is more effective than when it is not effective was not tested due to low content validity. The reason for not testing the hypothesis is because the variable did not meet the requirement of the Confirmatory Factor Analysis. This result is in contrast with prior research (e.g. Ramos, 2012; Loungani et al., 2002) which have attested that, if customs officials provide error free service and secure online transactions to their customers in a timely manner, firm performance will be high.

5.2.3 To examine the moderating role of entrepreneurial risk taking on the relationship between SC utilization and operational performance

Hypothesis 3 which states that the positive relationship between SC utilization and operational performance is higher when the level of risk taking is higher than when it is not low was also not tested due to low content validity. The decision not to test the hypothesis was as a result of the variable's inability to meet the requirement for the Confirmatory Factor Analysis. This result is in contrast to prior research (e.g., Shalley& Gilson, 2004; Lumpkin &Dess, 1996) which opine that, from an SCT utilization perspective, the risk-taking behaviour of organizations may foster creativity in how such technologies are employed in achieving the needs of the customer. This contrasting result was not expected. This is because, if there is a low level of risk-taking propensity in the utilization of an SCT, the use of the technology may be reactional in nature and not beneficial for unpredictable events. On the other hand, an organization with a high risk-taking propensity is likely to favour and exhibit behaviours that culminate in process enhancements particularly in SCT use and ultimately achieve higher levels of foreign trade firm performance (Gilley et al., 2002).

5.2.4 To examine the moderating role of entrepreneurial proactiveness on the relationship between SC utilization and performance.

The interaction of entrepreneurial proactiveness with SC utilisation had a significant positive effect on operational performance (β=0.111, t=3.315, p<0.01). This implies that entrepreneurial proactiveness strengthens the relationship between SC utilisation and operational performance. Specifically, the positive relationship between SC utilization and operational performance is higher when Proactiveness is higher than when it is low, thus lending support to Hypothesis 4. This result is in line with prior research which concluded that proactive organizations usually quickly respond to changes in the market and to new emerging opportunities and trends, and then convert such opportunities into organisational performance (Lumpkin & Dess, 2001). An organization that is proactive tends to hold high levels of commitment and performance (Caruana et al., 2002). Consequently, in the utilisation of SC Technologies, a proactive organisation is likely to employ the full use to ensure firm performance. Some empirical studies (e.g., Morris & Jones, 1999; Lumpkin & Dess, 2001; Venkataraman & Van de Ven, 1998) corroborate this finding establishing the need for entrepreneurial proactiveness on operational performance.

5.2.5 The moderating role of entrepreneurial innovativeness on the relationship between SC utilization and operational performance

Hypothesis 5 which states that the positive relationship between SC utilization and operational performance is higher when entrepreneurial innovativeness is higher than when it is low was not significant. This means that Hypothesis 5 was rejected accordingly. This rejection is because the variable did not meet the requirement for the Confirmatory Factor Analysis. This result is in contrast to prior research which have revealed that innovative behaviour of organizations is critical for their survival and growth. Handfield et al. (1999) suggest that a thorough assessment of the situation of an organization allows for innovative

ways of making the prevailing situation better. In the context of this study, it is opined that SCT utilization will have a positive relationship with the foreign trade firm performance of an organization. This study rejects the notion that the positive relationship may be further enhanced or may become stronger if the innovative behaviour of the organization in using the SCT is high. Some prior studies (e.g., Hurt et al., 1977; Garcia et al., 2003; Parsons, 1991; Azadegan & Dooley, 2010) do not support the current finding.

5.2.6 The moderating role of entrepreneurial autonomy on the relationship between SC utilization and operational performance

Hypothesis 6 which states that the positive relationship between SC utilization and operational performance is higher when entrepreneurial autonomy is higher than when it is low was not tested on grounds of low content. This means that Hypothesis 6 was dropped accordingly. This decision was taken since the requirement for the Confirmatory Factor Analysis was not met. This result is in contrast with prior research which reveal that, considering the role of autonomy in the relationship between SCT utilization and foreign trade firm performance, if an organization or its employees do have the freedom to decide how to utilize technology, the operational performance of the organization may decline. Some researchers (e.g., Das & Joshi, 2007; Lumpkin & Dess, 1996) have asserted that there is a positive relationship between organizational autonomy and their innovative behaviour, though this is dependent on the level where strategic decisions are taken, such as presidential or ministerial level. In the context of this study, that was not the case, and therefore not surprising that the hypothesis was not supported.

5.3 Implication of the study

Based on the positive relationship between SC utilisation and operational performance, the following implications are deduced from the study. Firstly, organisations in the foreign trade

industry are encouraged to use Electronic Data Exchange in their work. This is because of its ability to help organisations in their cost reduction objectives and volume of transactions between SC partners.

Secondly, companies should make use of Enterprise Resource Planning (ERP) to facilitate trade among partners. ERP in the planning stages of trade facilitation encourage the smooth transmission of IS and optimal distribution of resources in companies, as well as a host of additional processes within SCs. The adoption of ERP will therefore help in the integration of the necessary systems to facilitate higher levels of operational performance for the company.

Also, organisations should endeavour to use Advanced Planning and Optimization (APO) in trading operations to enhance their level of operational performance. APO has the ability of helping to achieve constant optimisation and evaluation of the SC efficiency and to perform the coordination between partners at all stages of the SC process. With APO, organisations can perform collaboration on operational, tactical and strategic levels. The efficiency of APO in enhancing operational performance emanates from helping organisations to improve upon product shipping, scheduling, pricing and product planning.

Moreover, organisations are entreated to use data capture systems (like barcode scanners) in trading operations. The use of the data capture systems has the potential of improving customer service. This is because automation reduces the level of errors and makes customers happy due to more on time shipmen. Data capture also increases visibility, enabling the ability to see available inventory and making informed decision with real-time data. Data capture could also increase worker productivity, decrease human errors and reduce paperwork. This leads to a lot of cost saving.

The study further reveals the need for companies to use warehouse management systems (WMS) in trading operations in order to enhance their operational performance. This is because, organisations with full time employees working with inventories and production of goods/services need a system to automate the warehouse operations. Warehouse management systems help in the streamlining billing processes by taking out the sluggish and outdated billing systems. WMS also helps in scalability to grow the business and the generation of automatic reports as and when they are needed. The need for WMS arises from the fact that it eliminates the need for regular inventory counts and provides accurate inventory counts and tracking.

The study also proposes that companies should strive to use a customer relationship management system (CRM) and transportation management systems (TMS) to facilitate trade among partners. These SC utilisation techniques will invariably lead to higher operational performance for firms which adopt them.

Based on the positive moderating relationship between entrepreneurial proactiveness and SC utilisation on operational performance, the research posits that organisations should constantly introduce new products/services, administrative techniques and operational technologies. The introduction of new products/services/systems make them very competitive in relation to their peers and they are able to get huge market share. For example, in Ghana, Mobile Telecommunication Network (MTN) has the biggest market share of subscribers due to their level of proactiveness in the introduction of cheaper sim card for users in a period in time when sim cards were uncommon.

5.4 Contributions to Knowledge

This study contributes to the extant literature in two main ways. In the first place, it contributes to knowledge by establishing the effects of SCT utilization on the operational performance of firms. Prior to this study, little was known about how SCT utilization leads to the operational performance of firms. Thus, prior studies have largely been skewed towards establishing the antecedent factors that contribute to the adoption of SCT (see for example Autry, et al., 2010; Lin, 2014; Zailani et al., 2015; Mani & Gunasekaran, 2018; Nkrumah et al., 2020; Iddris, 2012; Ujakpa et al., 2016).

Specifically, some of the antecedent factors that have been investigated in the past from a global perspective include how technology turbulence and breadth leads to the acceptance and adoption of SC technologies (Autry, et al., 2010); understanding the determinants of e-SC management system adoption (Lin, 2014); antecedents of green innovation adoption (Zailani et al., 2015); and the forces of SC social sustainability adoption (Mani & Gunasekaran, 2018). In the Ghanaian context, however, studies that have focused on SC have considered how green capabilities lead to green SC management adoption (Nkrumah et al., 2020); the adoption of e-commerce solution in SMEs; (Iddris, 2012) and the challenges of adoption and acceptance of e-procurement practices.

To this effect, it can be deduced that though there are several studies that have investigated the antecedent factors of SCT adoption, knowledge about the consequences of SCT adoption is limited particularly in the Ghanaian foreign trade sector. Thus, this study fills this knowledge gap by establishing the consequences of SCT utilization by establishing a significant positive relationship with the operational performance of firms. This finding to the best of the researcher's knowledge about the SC literature was non-existent. This

contribution, informed by the technology acceptance model, emphasizes the importance SCT utilization towards the operational performance of firms.

Secondly, the study contributes to knowledge by establishing the conditions under which SCT utilization will have an increased effect on the operational performance of firms. A major insight that this study contributes to knowledge is the fact that though it has been established that SCT utilization leads to operational performance, this relationship might not always be direct but may be contingent on other factors. Because of the interconnected nature of the supply value chain, the usage of SCT does not happen in a vacuum and as such, it is important to consider the role of other stakeholders along the supply value chain in the utilization of SC technologies towards the achievement of operational performance. This suggest that, though the establishment of a direct positive relationship between SCT utilization and operational performance is profound, the overall prediction of operational performance may be more complete when other stakeholders along the supply value chain are considered. Thus, from a stakeholder theory point of view, this study further contributes to knowledge by establishing a significant contingent effect of the entrepreneurial orientation of customs brokers (otherwise also known as clearing agents or freight forwarders). The custom brokers act as intermediaries between customers on the one hand and importers and/or exporters on the other hand. The need to consider the role of the entrepreneurial orientation of these custom brokers in the utilization of SC technologies provides a more complete understanding of how SCT utilization leads to operational performance because the utilization process is an interphase process and not used in isolation by stakeholders along the SC.

The technology task fit theory provides a lens of technology usage and how it creates value to firms. The theory indicates that for a firm to achieve competitive advantage, it must have a fit with technology. In other words, firms make strategic use of technology as an enabler

to achieve operational efficiency and effectiveness. In doing so, the theory explains how technology enhances task performance within a system.

The study also contributes to the stakeholder theory by indicating how the various stakeholders, namely: shareholders, employees, customers, management and the general public, interact and apply ethics in the adoption of technology and strategy.

The stakeholder theory integrates stakeholder relationships within a firm's resource base, industry setting, and socio-political arena into a single analytical framework. Thus, the theory helps to integrate all the differing aspects of system automation into one coherent procedure.

5.5 Contribution to Practice

The study has revealed a positive relationship between SC utilisation and operational performance. This indicates that organisations in the foreign trade industry should use Electronic Data Exchange in their work. This will help organisations in cost reduction objectives as well as increasing the volume of transactions between SC partners. Again, when companies use Enterprise Resource Planning (ERP) to facilitate trade among partners it will facilitate trade and encourage smooth transmission of IS and optimal distribution of resources in companies, as well as a host of additional processes within SCs. The adoption of ERP will also help in the integration of the necessary systems to facilitate higher levels of operational performance for companies.

Additionally, when organisations use Advanced Planning and Optimization (APO) in trading operations, it will enhance their level of operational performance. This is because, APO has the ability of helping to achieve constant optimisation and evaluation of the SC efficiency and to perform the coordination between partners at all stages of the SC process. When APO is implemented, organisations will perform well through collaboration on operational,

tactical and strategic levels. This will also improve the efficiency of shipping, scheduling, pricing and product planning.

Also, when organisations use data capture systems (like barcode scanners) in trading operations, it hastens the services. The use of the data capture systems has the potential of improving customer service. This is because automation reduces the level of errors and makes customers happy due to more on time shipment. Data capture also increases visibility enabling the ability to see available inventory and making informed decision with real-time data. Data capture also increases worker productivity, decreases human errors and reduces paperwork as well as saving cost.

5.6 Recommendations for Customs Administrations

Based on the findings of the study, Customs administrations should use Electronic Data Interchange in their work. This will help the organisation in cost reduction as well as increasing the volume of their daily services. Also, the use of Enterprise Resource Planning (ERP) will help to facilitate transactions among partners. It will as well facilite the services and encourage smooth transmission of IS and optimal distribution of resources. The adoption of ERP will also help in the integration of the necessary systems to facilitate higher levels of operational performance for customs in the provision of services to their partners.

To add to the above, the use of Advanced Planning and Optimization (APO) in customs services will enhance their level of operational performance. This will help the institution to achieve constant optimisation and evaluation of the SC efficiency and to perform the coordination between clients/partners at all stages of the SC process. The institute will perform well through collaboration on operational, tactical and strategic levels when the APO is implemented. This will also improve the efficiency of their operations, scheduling, pricing and service planning. Additionally, the use of data capture systems in their operations will

fasten the services. The use of the data capture systems will improve customer service. The automation system will reduce the level of errors and make clients happy. The data capture will increase visibility and enable the ability to see available inventory and make informed decision with real-time data. Data capture will also increase worker productivity, decrease human errors and reduces paperwork as well as saving cost.

Customs administrations will further improve and enhance their operations by using warehouse management system (WWS) in their provision of services (warehousing and freezones) to their partners. This is because, organisations with full time employees working with inventories and production of goods/services need a system to automate the warehousing/freezone operations. Warehouse management systems will help the institute to streamline the billing processes by taking out the sluggish and outdated billing systems. WWS also will help in scalability to improve the performance of the organization through the generation of automatic reports as and when it is needed.

5.7 Limitations and Suggestions for future studies

This study used customs brokers as respondents to the survey. However, there are other stakeholders in the foreign trade industry like shipping lines, Ghana Exporters Association, GPHA, etc. It is, therefore, recommended that future studies will take into consideration the views of these other stakeholders.

Secondly, the researcher had a sample population of about 790 out of which only 312 were used. This showed that there was a difficulty in getting maximum responses from the respondents. This is because the employees were very busy people and operate in an information-sensitive and competitive environment. This limited the sample sizes despite the enormous support received from the HR officers and some selected staff who assisted as points of contact for the data collection. A higher response could have provided additional

perspectives. The scope of study and time constraint did not also enable the researcher to source for more data when the initial number was obtained. It is, therefore, suggested that future studies should find strategies for expanding the scope of the sample to help generalisation to be effective. This is because when the size of the sample is small, it discourages generalisation.

Another limitation which is worthy to mention is that, in the current study, quantitative approach was used in the data collection and analysis. The use of close ended questionnaire did not make it possible to get the subjective viewpoint of respondent. Only the objective viewpoint of respondents was considered for the research. It is, therefore, suggested that future studies should consider a blend of both quantitative and qualitative in order to understand the perceptions, views and thoughts of respondents. This will also help to understand the practical insights and perspective of respondents which will advance the course of the literature and contribute to knowledge and practice.

The operational performance construct should be re-looked again. This is because the researcher adopted validated scale which, although had been tested already, is not contextual to emerging and developing economies considering the differences that exist in industries across the various emerging economies. Future researchers could, therefore, concentrate on developing a contextual scale for emerging economies like Ghana. This will then give a clearer picture of the relationship between SC utilisation on operational performance regarding firms in the foreign trade sector.

In this study, custom response, risk taking, innovativeness and autonomy did not support the hypotheses as moderating variables. Future research should delve more into these variables, either as predictors or moderators and find out the reason for the result. This is important because, prior research identified inconclusive results and it is therefore worthy to do a further investigation on the truism or otherwise the claim of the prior research. This could

also be done by using other sector or industries to test the findings of the study. This will help in making generalisation possible.

5.8 Conclusion

The study sought to find answers to three main research questions:

1. What is the relationship between SCT utilisation and performance of customs brokers in the Ghanaian foreign trade sector?
2. To what extent does the moderating role of entrepreneurial orientation impact on the relationship between SCT utilization and performance?
3. To what extent does the moderating role of customs response impact on the relationship between SCT utilization and performance?

With respect to the specific research questions emanating from the quantitative study, the following were revealed:

- The study was able to find out the effect of SC utilisation on foreign trade firms' operational performance. The result revealed a positive and significant relationship ($\beta=0.147$, $t=3.219$, $p<0.01$) between SC utilisation and operational performance.
- The moderating role of custom response in the relationship between SC utilisation and operational performance did not support the hypothesis as the reliability for customs response was low.
- Entrepreneurial proactiveness had a positive and significant moderating effect on the relationship between SC utilisation and operational performance (($\beta=0.111$, $t=3.315$, $p<0.01$).

- Entrepreneurial risk taking did not have a positive and significant moderating effect on the relationship between SC utilisation and operational performance because the reliability of risk taking was low.
- Entrepreneurial innovativeness did not have a positive and significant moderating effect on the relationship between SC utilisation and operational performance because the reliability of innovativeness was low.
- Entrepreneurial autonomy did not have a positive and significant moderating effect on the relationship between SC utilisation and operational performance because the reliability of autonomy was low.
- The quantitative study revealed that, out of the 6 hypothesised relationships, 2 of them were supportive of the hypotheses.

It is important to highlight that this study invariably offer both theoretical and practical implications that are useful for research and for practicing leaders of organizations in designing management practices and formulating human resource policies. It must be emphasized that these implications have been thoroughly discussed in this chapter. It is the hope of the researcher that future researchers and practitioners find the content of the study useful as a strategic tool for effecting change in the management literature and in practice. These findings gave a new conceptual framework as shown in Figure 5.1.

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Appendix A

Table A1: Company

	Frequency	Percent (%)
ACF Travel Consult	2	0.6
Afiboa Clearing Cargo Services	15	4.8
Asona Freight Services	10	3.2
Atlas Freight Broker. Export and import	12	3.8
Banner Services	13	4.2
Britana Freight Services	1	0.3
Britiana Freight Service	11	3.5
cato Shipping Company	11	3.5
De-Preme Gate Travel and Tour	1	0.3
Freight Agency	15	4.8
Global Cargo Commodities Ltd	12	3.8
Global Lines Ltd	14	4.5
Greenline Logistics	11	3.5
Jabel Motors	2	0.6
Kentas Logistics ltd	13	4.2
KG Shipping Agencies	14	4.5
Maclogistics	12	3.8
Mc Dan Shipping Company Ltd	14	4.5
MDS	6	1.9
Mojoson Agencies	10	3.2
Nanaba Transport	1	0.3
Noble Shipping Agency	10	3.2
Rescue Express Shipping	15	4.8
Royal Check Fort	11	3.5
Safety Marine International	13	4.2
SantashieCAfrica Ltd	7	2.2
Seacom Logistics	11	3.5
Shara Shipping agency	15	4.8
Tesco Agencies	15	4.8
Trans-Atlantic Services	15	4.8
Total	**312**	**100**

Table A2: Location

	Frequency	Percent (%)
Airport	37	11.9
Blackstar line	79	25.3
Divine Plaza	69	22.1
Divine Tower	20	6.4
Global Tower	26	8.3
Institute Of Freight Forwarders	75	24
Lapaz	6	1.9
Total	**312**	**100**

Table A3: Initial EFA of All Items with Varimax Rotation

	Factors						
Items	**1**	**2**	**3**	**4**	**5**	**6**	**7**
SCU1	0.13	0.664	-0.002	0.175	0.044	0.125	-0.055
SCU2	0.062	0.768	-0.12	-0.003	0.101	0.024	0.08
SCU3	0.064	0.709	0.104	0.082	-0.036	0.188	0.098
SCU4	0.456	0.546	-0.071	0.24	-0.017	0.103	-0.052
SCU5	0.148	0.406	-0.036	0.084	0.074	0.565	0.048
SCU6	0.148	0.786	-0.068	0.057	0	0.034	0.028
SCU7	0.113	0.684	0.028	0.138	0.056	-0.171	0.058
inn1	0.281	0.347	0.087	0	0.102	-0.433	-0.07
inn2	-0.034	-0.029	0.73	0.034	-0.06	-0.147	-0.087
inn3	-0.218	-0.112	0.383	-0.022	0.221	-0.255	-0.133
pro1	0.318	0.193	0.136	0.446	-0.083	-0.44	-0.097

Table A3 cont'd: Initial EFA of All Items with Varimax Rotation

	Factors						
Items	**1**	**2**	**3**	**4**	**5**	**6**	**7**
pro2	0.124	0.223	0.166	0.679	0.02	0.136	0.036
pro3	0.103	0.169	-0.158	0.68	0.148	-0.004	0.247
rsk1	0.063	0.082	-0.03	0.441	0.602	0.063	0.152
rsk2	0.149	0.101	0.161	0.065	0.756	0.066	-0.121
rsk3	-0.081	-0.015	0.157	-0.372	0.487	-0.299	0.273
aut1	0.103	0.138	-0.215	0.184	0.102	0.005	0.721
aut2	-0.076	-0.056	0.572	-0.052	-0.209	0.078	0.598
aut3	0.753	0.152	0.055	-0.02	0.093	-0.076	0.081
CR1	0.471	0.097	-0.094	0.197	-0.032	-0.098	0.402
CR2	0.654	0.011	-0.214	0.171	0.003	-0.164	0.16
CR3	0.149	0.037	0.691	0.001	0.248	-0.016	-0.038
CR4	0.448	0.005	-0.318	-0.084	0.399	0.063	-0.029
CR5	0.628	0.258	-0.14	0.069	0.175	0.128	0.061
OP1	0.692	0.111	0.152	0.019	-0.003	0.266	-0.034
OP2	0.711	0.07	0.089	0.099	-0.068	0.133	-0.06
OP3	0.127	0.28	-0.208	0.156	0.068	0.54	-0.158
OP4	0.646	0.227	0.032	0.134	0.192	-0.27	-0.05

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

A Rotation converged in 9 iterations.

Loadings above 0.5 highlighted

Table A4: Initial EFA of ALL Items with Direct Oblimin Rotation

Items	Factors						
	1	**2**	**3**	**4**	**5**	**6**	**7**
SCU1	0.013	-0.654	0.006	0.022	-0.077	0.08	-0.122
SCU2	-0.078	-0.807	-0.108	0.051	0.063	0.005	0.093
SCU3	-0.028	-0.727	0.137	-0.066	0.067	0.166	-0.024
SCU4	0.359	-0.477	-0.059	-0.043	-0.07	0.028	-0.186
SCU5	0.14	-0.364	0.019	0.072	0.02	0.545	-0.063
SCU6	0.014	-0.808	-0.056	-0.047	0.006	-0.004	0.024
SCU7	-0.042	-0.701	0.023	0.018	0.043	-0.203	-0.058
inn1	0.178	-0.352	0.045	0.059	-0.072	-0.46	0.07
inn2	0.011	0.022	0.714	-0.039	-0.112	-0.131	-0.059
inn3	-0.223	0.083	0.338	0.239	-0.135	-0.22	0.013
pro1	0.195	-0.12	0.097	-0.081	-0.095	-0.516	-0.425
pro2	0.022	-0.105	0.184	0.069	0.023	0.07	-0.69
pro3	-0.048	-0.056	-0.137	0.184	0.255	-0.057	-0.659
rsk1	-0.054	0.018	-0.031	0.637	0.157	0.06	-0.399
rsk2	0.095	-0.039	0.129	0.768	-0.127	0.085	-0.011
rsk3	-0.093	-0.053	0.142	0.451	0.279	-0.21	0.45
aut1	0.025	-0.108	-0.142	0.084	0.73	0.026	-0.112
aut2	0.005	0.031	0.65	-0.207	0.575	0.141	0.056
aut3	0.749	-0.065	0.063	0.051	0.072	-0.118	0.089
CR1	0.424	-0.021	-0.054	-0.055	0.406	-0.128	-0.14
CR2	0.613	0.092	-0.206	-0.024	0.171	-0.222	-0.12
CR3	0.186	-0.009	0.683	0.261	-0.065	0.008	0.011
CR4	0.431	0.063	-0.327	0.374	-0.019	0.048	0.142
CR5	0.593	-0.166	-0.122	0.143	0.053	0.08	-0.003
OP1	0.748	-0.007	0.18	-0.02	-0.056	0.217	0.006
OP2	0.746	0.042	0.105	-0.083	-0.075	0.068	-0.079
OP3	0.113	-0.221	-0.179	0.08	-0.174	0.497	-0.161
OP4	0.569	-0.141	0.005	0.16	-0.052	-0.326	-0.063

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

Rotation converged in 20 iterations.

Loadings above 0.5 highlighted

Full Moderation (Model 4) results

Table A5: Mean, STDEV, T-Values, P-Values

	Original Sample (O)	**Sample Mean (M)**	**Standard Deviation (STDEV)**	**T Statistics (|O/STDEV|)**	**P Values**
FirmAge -> OP	0.147	0.149	0.046	3.219	0.001
FirmSize -> OP	-0.19	-0.191	0.064	2.973	0.001
Pro*SCU -> OP	0.111	0.112	0.034	3.315	0
Proactive -> OP	0.183	0.188	0.057	3.201	0.001
SCU -> OP	0.344	0.35	0.055	6.251	0

APPENDIX B

QUESTIONNAIRE SURVEY

INFORMATION SHEET

Supply Chain Utilization and Foreign Trade Firm Performance: The moderating role of Entrepreneurial Orientation and Customs Response.

Dear Respondent

I am a Doctoral Researcher at the Nobel International Business School and currently conducting a research project titled "Factors affecting Supply Chain Utilization and Performance: The moderating role of Entrepreneurial Orientation and Customs Response" under the supervision of Dr. Theodora Asiamah

The objectives of the research are to assess the factors affecting supply chain utilization i.e. (organizational, environmental and technological related factors) and how these affect the performance of firms in the Ghanaian foreign trade sector; examine the moderating role of entrepreneurial orientation and customs response on the relationship between the utilization of supply chain technology and Performance.

In your role as a low, middle or senior management member of your firm, you are humbly invited to participate in this research survey through the completion of the enclosed questionnaire, which will provide a unique source of information on Supply Chain Utilization and Performance. The anonymity and confidentiality of your responses are guaranteed

because you are not required to provide your name nor any other information that can be used to identify you.

Please accept my profound gratitude for your invaluable support.

Yours faithfully,

Nana Akoto

Doctoral Researcher

Part 1

Demographic Profile of Respondent **Please circle your response**

1. Age

i.20-29 years ii. 30-39 years iii. 40-49 years iv50-59 years v. 60-70 years

2. Gender

i. Male ii. Female

3. Educational Background

i. Primary education ii. Secondary education iii. Diploma iv. First Degree v. Master Degree vi. PhD vii. Other (specify)

4. Job Title

1. Delivery Clerk 2. Transport & Logistics Manager 3. Import & export coordinator
4. GC-Net/GCMS Coordinator 5. Freight Forwarding Manager 6. Other (specify)

5. Number of employees

1. 1-5 2. 6-29 3. 30-99 4. 100+

6. How long have you been in business?

1. 1-5 2. 6-10 years 3. 11-15 years 4.16-20 years 5. 21+ years

7. Number of years of experience in foreign trade

1. 1-5 years 2. 6-10 years 3. 11-15 years 4.16-20 years 5. 21+ years

In the following questions, please indicate the extent to which you agree or disagree with each statement by circling the corresponding numeric value on a scale of 1 to 5 that is closest to your response. Please use the following key to understand the scale.

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

Part 2

Section A. Supply Chain Utilization **Please circle your response**

- My company uses electronic data interchange (EDI) in trading operations.

1 2 3 4 5

- My company uses enterprise resource planning (ERP) to facilitate trade among partners.

  1 2 3 4 5

- My company uses advanced planning and optimization (APO) in trading operations.

  1 2 3 4 5

- My company uses data capture systems (like barcode scanners) in trading operations.

  1 2 3 4 5

- My company uses a warehouse management system (WWS) in trading operations.

  1 2 3 4 5

- My company uses a customer relationship management system (CRM) to facilitate trade among partners.

  1 2 3 4 5

- My company uses transportation management systems (TMS) to facilitate trade among partners.

  1 2 3 4 5

SECTION B

Entrepreneurial Orientation **Please circle your response**

1. In general, the top managers of this organisaiton favour a strong emphasis on the marketing of tried and true products or services

   1 2 3 4 5

2. In the past 5 years, new lines of products or services has been marketed by my organisaiton

   1 2 3 4 5

3. Changes in product or service lines have been mostly of a minor nature

   1 2 3 4 5

4. My organisation typically responds to actions which competitors initiate

   1 2 3 4 5

5. My organisation is very seldom the first business to introduce new products/services, administrative techniques, operational technologies etc.

   1 2 3 4 5

6. My organisation typically seeks to avoid competitive classes, preferring a ‘live-and-let-live’ posture

   1 2 3 4 5

7. Top managers of my organisation have a strong proclivity for low risk projects with normal and certain rates of return

   1 2 3 4 5

8. Top managers of my organisaiton believe that owing to the nature of the environment, it is best to explore it gradually via cautious, incremental behavior

   1 2 3 4 5

9. My organisaiton typically adopts a cautious ‘wait-and-see’ posture in order to minimize the probability of making costly decisions

   1 2 3 4 5

10. My organisaiton allows its employees the freedom and independence to decide on their own, how to go about their work.

    1 2 3 4 5

11. My organization gives authority and responsibility to act alone if it is the best interest of the organisaiton.

    1 2 3 4 5

12. In the performance of my duties, I am allowed to act and think without interference.

1 2 3 4 5

Part 4

Customs Response

21. Customs officials provide error free service and secure online transactions to make customers feel comfortable

1 2 3 4 5

22. I see the operations of customs as secured and the behaviour of the employees as encouraging

1 2 3 4 5

23. Individual attention, customized service and convenient trade transaction hours are provided by customs to my firm

1 2 3 4 5

24. Customs officials are willing to help customers and provide prompt services.

1 2 3 4 5

25. The physical facilities, equipment and appearance of custom personnel are appealing to customers.

1 2 3 4 5

Part 5

Operational Performance

26. My firm provides on- time and accurate deliveries

1 2 3 4 5

27. My firm has the best delivery speed and flexibility

1 2 3 4 5

29. The lead-time for fulfilling customers' orders is short.

1 2 3 4 5

30. Our company can quickly respond to changes in service demand

1 2 3 4 5