

Evaluation of Socio-Cultural Impact on Supply Chain Integration: the role of trust and leadership among grocery supplies in Ghana

By

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A thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy at the University of Central Lancashire UK

SEPTEMBER 2023



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ABSTRACT

While prior studies on the link between cultural factors and supply chain integration produce conflicting outcomes, this study set out to explore the indirect (moderating) role of trust and leadership in the quest to clear the confusion in extant literature. To the best of the researchers' knowledge, limited or no study so far has been conducted to explore the moderating role of trust and leadership in the relationship between socio-cultural factors and integration in the supply chain. Thus, it is necessary to understand how trust and leadership could moderate the relationship between socio-cultural factors such as national culture, cross-cultural differences, organizational culture, and openness to diversity as a determinant of SCI. A review of existing literature was conducted to achieve this objective, and gaps were identified. A conceptual framework with six main hypotheses was developed based on the gaps identified. To validate the model, a well-structured questionnaire was designed and piloted, and data was gathered from 511 senior managers of grocery businesses in Ghana. The hypothesized model was validated with PLS-SEM. The study concludes that all the socio-cultural factors (organizational culture, national culture, cross-culture, and openness to diversity) are important in the quest to improve supply chain integration. Trust and Leadership do not just support integration but serve as an avenue to reap superior integration along the supply chain. Based on the findings, this study concludes that socio-cultural factors, trust, and leadership are inevitable in achieving supply chain integration, particularly in the grocery industry in emerging markets like Ghana. The study contributes to the extant literature by examining the drivers of SCI in the context of the food manufacturing sector. This study contributes

to understanding the effect of socio-cultural dimensions on SCI while inspiring a small amount of academic research in food manufacturing. The study contributes to filling the gap by combining Dynamic Capability Theory (DCT) and Relational View theories (RVT) to understand the phenomena under study.

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ACKNOWLEDGEMENT

A PhD thesis is a lonely journey along a long, unpaved path that often appears to lead nowhere. However, I was fortunate to receive different forms of support. I can't list everyone who supported me on this journey in this acknowledgment. But first, I thank God for providing much-needed guidance, protection, and good health during this project. I need you more going into the future.

I express my most tremendous appreciation to Mrs. Suzie Baffoe Effah, my wife. Also, my daughter and son, Naa Akaabi Effah and Nana Gyasi Effah, for their love, support, and immeasurable sacrifices to keep up with my absences during my scholarly pursuits.

Secondly, to my gentle, patient, and humble Director of Studies (Supervisor), Professor Yahaya Yusuf, may Almighty Allah bless you and your family for the goodness shown to me. Prof's constant reminders of my timelines and rich and valuable suggestions have brought me this far. My Second Supervisor, Dr. Alina Petrescu, displayed professionalism and ensured I got things right throughout my study, especially during the application for ethical approval. God bless your home.

I also appreciate Dr. Stephen George Willcocks, my research degree tutor, for his encouragement. Finally, I thank WISER, Uclan skills training center, The School of Business, and Dr. Simon Watts, PGR Training coordinator from the University of East Anglia, for the numerous training programmes and seminars that strengthened my work.

LIST OF ABBREVIATIONS

ACRONYMS	MEANING
AVE	Average Variance Extracted
CCC	Cross Cultural Communication
CI	Customer Integration
DCT	Dynamic Capability Theory
ECR	Efficient Consumer Response
EMPS	Environmental Management Practices
EI	External Integration
GMRG	Global Manufacturing Research Group
HLM	Hierarchical Linear Model
HTMTR	Hetrotrait-Monotrait Ratio
II	Internal Integration
LPI	Logistics Performance Index
MCMC	Marcov Chain Monte Carlo
NC	National Culture
OC	Organisational Culture
OP	Operational Performance
PLS	Partial Least Square
PLS-SEM	Partial Least Square-Structural Equation Model
R&D	Research and Development
RVB	Resource- Based View
RVT	Relational View Theory
SC	Supply Chain
SCF	Socio Cultural Factors
SCI	Supply Chain Integration
SCM	Supply Chain Management
SCMP	
SI	Supplier Integration
TMS	Top Management Support
TQM	Total Quality Management

CHAPTER ONE

INTRODUCTION TO THE STUDY

1.0 Introduction

Chapter one provides an overarching perspective on the study, including the background, the problem being investigated, aims, objectives, and research questions. The chapter also captures the study's hypotheses, significance, and contribution. The key terms glossary and the organisation of the study are also featured in this chapter.

1.1 Background to the Study

The dynamic nature of the business competition implies that firms that embark on supply chain management (SCM) and thus integrate their resources, capabilities, and strategies with collaborating partners can perform better than those that compete as individual entities. There is empirical evidence regarding the benefit of SCM to competitiveness and financial and operational performance (Agus, 2011; Chung et al., 2016; Lu et al., 2018). Supply chain management faces an array of risks that have emerged only in recent years, spurred by twin factors of globalization and the rapid development of technology (Ritchie and Brindley, 2004; Scannell et al., 2013). Globalization has led to cultural diversity and sourcing materials and inputs from diverse cultural backgrounds in international business (Trent and Monczka, 2003). Supply chain integration (SCI) is considered a key element in SCM (Stevens and Johnson, 2016). According to Sweeney (2012), SCI is the development of interconnected approaches to eliminate the inefficiencies created by supply chain fragmentation. SCI can assist firms in responding effectively to strategic, operational,

and technological challenges (Liu et al., 2010, 2013). SCI improves both financial and operational performance by allowing firms to integrate resources and capabilities with trusted supply chain (SC) partners to compete as a chain rather than as individual firms (Flynn et al., 2010; Huo, 2012; Shou et al., 2017a; Lu et al., 2018). This is why SCI has gained considerable attention from professionals and scholars from both developed and emerging markets concerning its relationship and effects on SC and the financial performance of firms (Flynn et al., 2010; Liu et al., 2013).

It is argued that the socio-cultural and economic environment within which firms interact plays an essential role in the collaborative process, such as SCI. This is known to vary significantly across geographical borders (Cai et al., 2010; Liu et al., 2013; Lu et al., 2018). Beth et al. (2003, p. 64) noted that "despite years of technological and process advancements, an agile, adaptive supply chain remains an elusive goal," implying that the difficulty is embedded within the structure and culture of individual organizations as well as supply chains (Daugherty et al., 2006; Fawcett et al., 2007).

It is, therefore, apparent that cultural differences from various geographical locations and the fragmented nature of supply chain management, as indicated in prior studies by Sweeney (2012) and Ross (1998), have the potential to render the supply chain system inefficient if attempts are not made to develop an innovative framework or models for integrating the supply chain management activities (Capaldo et al., 2015; Shahzad et al., 2018). In the SCM context, trust has been defined as "one's belief that one's supply chain partner will act consistently and do what he /she says will do" (Spekman et al. 1998, pp. 56). Studies have found that trust shown by a supplier to the buying firm brings benefits in the SC activities, such as encouraging suppliers' involvement, investment, collaboration, information

sharing, and sustainability practices, as well as improvement in the performance of the supplier (Zaefarian et al., 2016; Ramon Jeronimo et al., 2017; Kim et al., 2018; Zhao et al., 2018). Recent studies on leadership have been extended to inter-organizational settings (MüllerSeitz and Sydow, 2012).

Leadership is the ability to influence one's own organization and the suppliers' organizations to establish and accomplish common goals and objectives (Lockstrom et al., 2010:275). The explanation offered by Lockstrom et al. (2010) is that the leadership style of a buying firm could improve a firm's relational capital, including suppliers' commitment and supply chain relationships. This definition implies that leadership has the potential to moderate SCI relationships. Therefore, examining the moderating effects of trust and leadership on the relationship in SCI activities is imperative. The subject, SCI, is a complex and broad phenomenon with various theoretical lenses (Halldosson et al., 2015; Soosay & Hyland, 2015). In addition, different theories have focused on four other value-creating mechanisms leading to varying forms of integration, which some authors call integration elements (Simatupang & Sridharan, 2008; Ahmed et al., 2017). To gain a better perspective on supply chain integration, Lee, 2000 mentioned three dimensions of integration. The three dimensions constitute supply chain integration and determine the level of supply chain integration. These dimensions are information sharing, coordination and resource sharing, and organisational relationship linkage. Based on Lee's study, Simatupang et al., 2002 extend this framework by offering different modes of coordination required to integrate the supply chain processes of other partners.

In developing economies like Ghana, the food manufacturing sector plays a crucial role in converting raw materials, components, or parts and work-in-progress into a

finished product to meet consumer needs (Opoku et al., 2020; Bawa et al., 2018). Food manufacturing firms undertake many activities, including acquiring raw materials, inventory control, and distribution of goods. However, in today's dynamic environment, firms can no longer continue to undertake these activities within the walls of their establishment. Hence modern firms have advanced to the supply chain level. In addition, many firms now acknowledge that they cannot solely operate on their own; as such, they need the participation and collaboration of all members (i.e., Suppliers and customers) along the supply chain (Bavarsad et al., 2017).

Again, food manufacturing firms cannot operate successfully without their stakeholders (Sitienei et al., 2015). This indicates that stakeholders play a vital role in the survival of food manufacturing firms. Over the past decade, the grocery sector has been very competitive. In their quest to remain competitive in the dynamic business environment, firms employ innovative strategies to integrate and manage their stakeholders. Huo et al. (2014) further argue that effective stakeholder management remains a critical driver of organisational success. Hence, it remains imperative for firms to note that their survival in the dynamic business environment is linked to how they can integrate with suppliers and customers and have healthy collaboration with them (Rosa and Saei, 2020). Kumar et al. (2017) opine that members in the SC work together and collaborate to enhance performance, thus translating into improved profitability and meeting customer needs. SCI has universally been acknowledged as an important factor influencing a firm's competitiveness (Devaraj et al., 2007). However, using SCI remains challenging, especially in a globalised and multicultural environment. SCI in one national culture

(e.g., individualism) may be ineffective in another (e.g., Collectivism) and, thus, may not achieve the expected targets.

While previous studies have also provided empirical support for the positive effect of SCI on the organizational performance of firms (Mohammad et al. I., 2014; Van der Vaart and Van Donk, 2008), others (Flynn et al. I., 2010; Huo et al., 2014; Kim, 2009; Kumar et al. 2017; Rosa et al., 2020) found a direct effect of SCI on firm performance. Rosenzweig et al., 2003) also argue that SCI can indirectly enable firms to identify and eliminate activities that do not add value to the supply chain. By doing this, product quality could be enhanced, decreasing production costs and improving value creation and customer satisfaction. Other studies have also looked at the organizational culture as an essential driver of SCI (Leisen *et al.*, 2002; McDermott and Stock, 1999; Nahm *et al.*, 2004; Prajogo and McDermott, 2005; Stock *et al.*, 2007; Zu *et al.*, 2010; Zhi *et al.*, 2015) in some sectors and not the manufacturing industry, especially the grocery sector. Thus, this study examines how socio-culture impacts Supply Chain Integration. In addition, trust and leadership will be investigated as moderators that enable the socio-cultural factors to influence the integration of supply chain partners. Though there exists a large body of literature on the drivers of supply chain integration (Hanf, 2008; Mustafa Kamal & Irani, 2014; Fazli & Afshar, 2014; Yunus & Tadisina, 2016; Manuel Maqueira et al., 2019; Tarifa-Fernández et al., 2023; Lee, 2023), there is a paltry of studies on how socio-cultural factors such as national culture, cross-culture differences, organisational culture, and openness to diversity could drive integration. Though cultural issues have been cited as avenues for integration, existing literature remains scarce on how different cultural dimensions could drive integration at the supply chain level. Hence examining how

integration may occur via cultural dimensions could make important contribution to integration discourse. Given these conceptualisations and the abovementioned gaps, this study proposes socio-cultural factors such as national culture, cross-culture differences, organizational culture, and openness to diversity as a determinant of SCI. This current study also determines how trust and leadership moderate the relationship between socio-cultural factors and SCI.

1.2 Problem Statement

Ghanaian grocery is among the fastest-growing industries across the region. Ghana is Africa's 11th-largest grocery retail market and the second largest in West Africa - after Nigeria. The grocery market share data shows the Ghanaian grocery market continued to grow steadily. Household spending in Ghana is projected to grow by 4.7% in 2022, in line with an expected increase in GDP to 4.9%. This presents a positive outlook for mass grocery retail in West Africa. As is the case in many countries in Sub-Saharan Africa (SSA), large portions of household spending in Ghana go towards purchasing food and drinks. And in line with the country's growing urban population, there has been increasing patronage of mass grocery retail outlets in the country. Available statistics expect this trend to continue over the coming years. And this will present a positive outlook for malls and supermarkets in the West African country. Over the past decade, the grocery market has experienced unprecedented change as the forces of regulation, retail concentration, internationalisation, retail brand development, new distribution practices, and industry initiatives, such as Efficient Consumer Response (ECR), have impacted the business environment (O'Reilly et al., 2001). The implications for food manufacturers are considerable. However, while all food manufacturers are likely to experience significant change,

there is evidence to suggest that the impact of the changing retail structure on grocery manufacturers is unlikely to be symmetric (Collins and Burt 1999). Grocery manufacturers will likely experience new demands for which many may be unprepared. Therefore, it is imperative to develop a new framework to assess focal organisations' ability to adapt to changing retailer requirements. Amidst the ever-changing environment characterized by its stiff competition and complex nature, where customers remain volatile, better quality, there is the need for higher reliability and prompt delivery (Ganbold and Matsui, 2017). To mitigate such an uncertain environment, the firm employs fewer resources and capabilities and instead increases its integration with supply chain partners (Wong and Boo- IH, 2008; Ganbold and Matsui, 2017). In this regard, it is not surprising that manufacturing firms across the globe feel challenged by environmental uncertainty. The question usually asked is how firms can cope with uncertainty in the business environment. Drawing from the relational point of view, the involvement of suppliers, which deals with close collaboration among customers and key suppliers in product design/improvement and process modification, is crucial for supply chain integration (Takeishi, 2001; Menguc et al., 2014; Yan and Nair, 2016; Cheng and Krumwiede, 2018; Xiao et al., 2019). SCI has therefore received significant attention as a potentially effective strategy for coping with the uncertain business environment. SCI remains a critical concern for operational managers (Rai et al., 2006; Weingarten et al., 2014; Liu et al., 2021). Firms often leverage SCI to achieve superior performance through cross-function collaboration, joint decision-making, and information sharing with stakeholders (Chaudhurri et al., 2018). Despite the relevance of SCI to managers, the use of SCI remains challenging, especially in a

globalized and multicultural environment. SCI in one culture (Individualism) may be ineffective in another (e.g., Collectivism) and, thus, may not achieve the expected outcomes (Liu et al., 2021). It is, therefore, essential to note that national cultural factors drive the effectiveness of SCI. However, various drivers of supply chain integration have been identified.

Despite the rich literature (Fazli and Afshar, 2014; Yunus et al., 2016; Wang et al., 2018; Manuel Maqueira et al., 2019; Shukor et al., 2020) on the drivers of supply chain integration, it is logical to study how socio-cultural factors including organisational culture, national culture, cross-culture, and openness to diversity influences SCI (Braunscheidel et al., 2010; Cao et al., 2015; Yunus and Tadisina, 2016; Wong et al., 2017; Porter, 2019; Liu et al., 2021; Aćimović et al., 2021). However, SCI is planned, executed, and controlled by people (Cao et al., 2015). Individuals do not act purely rationally since they care about others and are influenced by their relationships with others and their cultural background (Cai et al., 2017; Schorsch et al., 2017; Sweeney, 2013). Therefore, it is necessary to study the link between socio-cultural factors, such as organisational culture, national culture, cross-culture, and openness to diversity, to understand SCI comprehensively.

Though prior studies have examined the link between organisational culture (Braunscheidel et al., 2010; Cao et al., 2015; Yunus and Tadisina, 2016; Porter, 2019; Aćimović et al., 2021; Taha et al., 2021; Afshar and Fazli, 2022), national culture (Hamri et al., 2016; Wong et al., 2017; Durach and Weingarten, 2020; Liu et al., 2021) and supply chain integration.

In spite of several benefits of the food industry in Ghana's economy, the performance of firms in the domestic supply chain in the industry in sub-Saharan

Africa, especially Ghana, has been facing a myriad, mainly due to globalisation and the influx of different cultures of supply chain partners. The sector, by far, is also challenged by the lack of robust supply chain management practices (SCMPs), resulting in slow performance growth in this sector (Memia, 2018). This may add value to and improve these organisations. However, professionals and academicians have paid little attention to supply chain integration in the food industry. Moenga (2016) argued that organisations in the supply chain continue to appreciate SCMPs, but putting them into practice is a myriad.

Earlier literature on the relationship between socio-cultural factors and supply chain integration produces conflicting outcomes for multiple reasons. First, different dimensions of organisational and national cultures have been used in different studies. Secondly, while some studies explored the link using the various dimensions of culture, others relied on the composite organisational and national culture constructs, resulting in conflicting outcomes. This creates a gap in the literature that requires attention, especially in the face of globalization, where integration remains a strategic tool to achieve competitive advantage. This study seeks to close the gap by examining how socio-cultural factors such as organisational culture, national culture, cross-culture, and openness to diversity may independently drive supply chain integration. Again existing literature on the link between socio-cultural factors and supply chain integration papers focused on developed economies, neglecting the perspective of developing economies like Ghana; this creates a contextual gap. It is imperative to conduct this study since cultural issues in the western world vary from those in Sub Sahara Africa. Therefore, it is essential to understand how supply

chain integration may be driven by socio-cultural factors, particularly in the grocery sector in emerging countries.

Additionally, prior studies have called on the need to explore further the role of socio-cultural factors in achieving supply chain integration (Erlinda et al., 2015; Vermeulen et al., 2016; Yu et al., 2016; Porter, 2016; Benerjee and Mishra, 2017; Prajojo et al., 2018; Wang et al., 2018; Wang et al., 2018). Lui (2021) further advanced that cultural differences within organisational and national cultures remain underexplored and require attention. This study responds to these calls by examining how supply chain integration could be achieved through socio-cultural factors such as national culture, cross-cultural differences, organisational culture, and openness to diversity. This will, therefore, aid in closing the gap in the literature regarding the socio-cultural perspective of integration.

Adding to the limited knowledge of socio-cultural factors such as national culture, cross-cultural differences, organisational culture, and openness to diversity as a determinant of SCI, trust and leadership are two important drivers of integration that cannot be left out. Though prior studies have demonstrated that trust (Yeung et al., 2009; Zhang, M. and Huo, 2013; Mora-Monge et al., 2019; Ramirez et al., 2020) and leadership (Chen et al., 2018; Bui et al., 2021; Wang and Feng, 2022) plays essential support to supply chain integration. Extant literature agrees that long-term stakeholder relationship depends on trust (Limayem et al., 2007; Osah and Kyobe, 2017). Recent studies on leadership and its impact on SC focus more on sustainability practices within SC activities (Gosling et al., 2017), with most of them emphasizing performance improvement. While prior studies on the link between organisational culture (Braunscheidel et al., 2010; Cao et al., 2015; Yunus and Tadisina, 2016;

Porter, 2019; Aćimović et al., 2021; Taha et al., 2021; Afshar and Fazli, 2022), national culture (Hamri et al., 2016; Wong et al., 2017; Durach and Wiengarten, 2020; Liu et al., 20210) and supply chain integration produces conflicting outcomes, this study set out to explore the indirect (moderating) role of trust and leadership in the quest to clear the confusion in extant literature. To the best of the researchers' knowledge, limited or no study so far has been conducted to explore the moderating role of trust and leadership in the relationship between socio-cultural factors and integration in the supply chain. This has created a vacuum in understanding the moderating role of leadership and trust in SCM relationships. Therefore, This study constitutes a contemporary attempt to fill the gap by exploring the moderating role of leadership and trust in SCM relationships. This could make a significant theoretical contribution to existing literature. The theoretical gaps this study seeks to address are important because no empirical research simultaneously investigates socio-cultural effects on SCI and the moderating effects of trust and leadership on the relationship between socio-cultural factors and SCI. Thus, it is necessary to understand how trust could moderate the relationship between socio-cultural factors such as national culture, cross-cultural differences, organizational culture, and openness to diversity as a determinant of SCI. The study contributes to the extant literature by examining the drivers of SCI in the context of the food manufacturing sector. The findings would help advance research and practice in the grocery industry. Thus, an expanded model (antecedents of SCI) is needed to study the grocery sector. This study contributes to understanding the effect of socio-cultural dimensions on SCI while inspiring a small amount of academic research in food manufacturing. The study fills

the gap by combining Dynamic Capability Theory (DCT) and Relational View theories (RVT) to understand the phenomena under study.

1.3 Contributions of the study

This research would make significant practical and theoretical contributions. Theoretically, the study also adds to the literature in academia, especially in SSA Region, by providing direction on SCI among players of diverse cultural orientations. This study further considered trust and leadership as moderating effects on the above relationship to examine the extent of integration among supply chain partners, which is uncommon in SC literature. This study is an attempt to fill the chasm. Theories such as Dynamic Capability Theory and Relational View Theory were combined to examine the factors that could enhance SCI in the Ghanaian context. The study increases the generalizability of research through the appropriate use of a random sampling procedure which provides equal chances of respondents to be selected, making generalising results more reliable (Creswell & Creswell, 2017). Also, applying Partial Least Squares Structural Equation Modelling (SEM-PLS) to test the hypothesis in the model in a context that has been minimally used stands to gain significant contribution to the methodology. Similarly, using the moderated mediation to determine the conditional effect of the mediator on the dependent variable (Hair et al. 2017) has been less applied in the grocery industry, particularly in the Ghanaian context, hence making another significant contribution.

Based on the findings, the research has suggested how the grocery industry stakeholders could improve their SC system to meet customers' needs. The study has presented recommendations to help mitigate the identified challenges associated with SCI in the Ghana grocery industry. Firms considering Cross Culture a

critical SCI driver will benefit from the study's findings. The study has also identified the most influential socio-cultural factors that could enhance the food supply chain integration process, especially in SSA. Changes in organisational processes and interactions accompany the implementation of SCI; thus, the various actors may not feel comfortable with it. The outcome of the study will help stakeholders to identify and implement a comprehensive road map that will heighten SCI among players in the food industry in Ghana.

The study would be significant to organisations in general as it has highlighted the current Supply Chain Management Practices (SCMPs) that the major companies are adopting in the grocery industry in Ghana. The study provides preliminary information on the benefits and challenges of adopting world-class SCMPs and might be a starting point for future benchmarking and learning. The study further promotes the development of SCM in grocery and other sector organisations and management in general.

The study's findings will be instrumental in guiding the government, regulatory authorities, professional bodies, and policymakers in improving and addressing gaps in the law. If amended, it may reduce lacuna and promote governance and implementation of best practices in SCM. In addition, the government would use the findings of this study in formulating new policies that will address the challenges that are being faced by the industry

The study will help the grocery industry in Ghana and beyond to make informed decisions to improve the SCI of the industry and help in the growth of Ghana's economy. In addition, supply chain associates in the grocery industry could also gain

by enhancing their business operations to improve performance. Lastly, the main findings and recommendations will also help the Ghana government and the international community set the framework for boosting growth in the grocery industry through support, good governance, and transparency.

1.4 Methodology

Considering the nature of the study and the hypothesis, the researcher employed quantitative research techniques. The method was effective in assisting the researcher in examining the socio-cultural factors as essential enablers in supply chain integration. In association with quantitative research, the study employed a cross-sectional (Goran, 2010) and survey design. The cross-sectional design aided the researcher in gathering important primary data from respondents within a specific time frame which assisted in the correct prediction and interpretation of the data. The survey method is convenient when collecting data from a sample to make inferences (Collis and Hussey, 2003). In this method, the sample responded to questions posed by the researcher (Polit and Hungler, 1993; Mouton, 1996). A structured questionnaire was used to collect primary data for the study. The items were extracted from existing literature. The study population included all downstream players of sampled focal organisations in the food industry in the Ghanaian grocery industry. A second-generation statistical method, Partial Least Squares Structural Equation Modelling (PLS-SEM), was employed for data analysis. The technique combines linear regression and validation factor analysis (Yeop et al., 2019) and fits a model to incomplete data (Kline, 1998).

1.5 Organisation of the Thesis

The thesis consists of six (6) chapters. The first chapter includes the background to the study, Statement of the problem, Objectives of the study, Significance of the study, Scope of the study, and Organisation of the thesis. The succeeding chapter covers the conceptual literature review supporting the study. The research framework and discussion of the various hypotheses are presented in Chapter three (3). The theories discussed in the previous chapter underpin the framework and present the hypothesis for testing the model. The next chapter (4) elaborates on the research methodology including the sampling techniques, instruments, and data analysis method. Chapter five (5) contains a report on the study, a survey, and a presentation of the descriptive analysis. Chapter six (6) presents a discussion of the key findings of the study, a summary of the findings, limitations, and conclusions.

1.6 Chapter Summary

Chapter one, which is the introductory chapter, focuses on the background of the study. It stated the research problem, objectives of the study, significance and organisation of the study. It provided the study's motivation, rationale, and basis for the remaining chapters.

CHAPTER TWO

CONCEPTUAL LITERATURE REVIEW

2.0 Introduction

This Chapter provides a review of the main concepts of the study, which include supply chain, supply chain management, and socio-cultural factors, including national culture, organisational culture, openness to diversity, and cross-culture. It also has supply chain integration, including internal, supplier, and customer integration. Additionally, the chapter captures leadership and trust.

2.1 Evolution of Supply Chain (SC)

The current global business market in the production and service industries does not function on individual bases due to competition. This has become so because of competition and the volatile global trend in supply chains. A supply chain is a system of firms' connections (Carter *et al.*, 2015; Choi *et al.*, 2015) comprising various associated groups like producers, distributors, sub-distributors, service providers, and clients (Bellamy *et al.*, 2014). The present global market conditions have increasingly become more challenging and reduced the economic impact on organizations to single-handedly produce their wants (Lambert and Cooper, 2000). Collaboration and cooperation are what some organizations are pursuing since, with other organizations coming on board, clients' needs would be met without any challenges. In view of this, there must be quality management direction by infusing and coordinating the linking of other businesses' relationships among other supply chain partners (Lambert and Cooper, 2000). A supply chain, therefore, comes with various activities connecting suppliers, warehouses or storage facilities, operations, and retail outlets where the final product is finally disposed of (Stevenson, 1990).

According to Ayers (2001), SC is a succession that begins with acquiring raw materials and delivering the finished product to the end user. Chopra and Meindl (2010) also brought a different dimension into the definition of Supply Chain by defining it as consisting of all bodies taking part, directly or indirectly, to meet a client's objective. According to Chopra and Meindl (2014), the supply chain is also seen as the interactions between different organizations involved in their top-bottom linkages in managing their various activities and operations that produce products and services for the customer's well-being. In all these definitions, a clear process is involved in the meaning of the supply chain. The descriptions start with acquiring raw materials, which are sent to the production unit, converted to a semi-processed state, then to the finished state, and finally supplied to clients.

It can be realised that, for an effective supply chain, there must be effective management of information flow within the supply chain networks (Zhou and Benton, 2007). Since there are different processes related to SC networks, from sourcing raw materials to converting and supplying the final product to the client's satisfaction, one has to deal with a complex and challenging network (Dudek, 2009). This calls for proper management of the supply chain network, which will look at the various processes involved in managing the SC. The following section discusses supply chain management.

2.2 Evolution of Supply Chain Management (SCM)

Supply Chain Management is a caption that initially surfaced in literature in the 1980s (Oliver and Weber, 1982), which linked logistics with other processes in the organization (Houlihan, 1988) with the view to explaining the inter-relationships

involving logistics and other external institutions and stakeholders which were put down by some consultants (Stevens, 1989; Houlihan, 1988). In 1990, some academics then gave a clearer picture of SCM from a theoretical view as the management of the flow of materials to information flow which has made understanding the concept of SCM challenging (Lambert, 1992; Lee and Billington, 1992). This then brought to the wake whether SCM can be classified as a movement, regulation, ideology, or a government framework after a lot of researchers have reviewed some extant literature (Kache and Seuring, 2013) which gave greater insight into the concept of SCM. After all these exciting reviews, academic debates worldwide continued so that the true answers to some SCM questions could be unrivaled. The main objective of SCM is looking into and taking care of supply chain networks where the various concepts can be understood and coordinated. However, the supply chain (SC) and SCM definitions are mixed up with some intersections (Baben, 2013). There have been extensive and rigorous debates between researchers and publishers about the actual definition of Supply Chain Management (SCM) for the past decade. Mentzer *et al.* (2001) agree with Chicksand *et al.* (2012), who presently argue that there has not been an accepted definition of SCM.

Supply Chain Management (SCM) outlines and administers all actions from searching and purchasing production, including the handling of material programs. However, there are varying definitions that have come up for SCM. The Supply Chain Management Professionals Council (SCMPC) argues that SCM involves the plotting and administering of all actions in the acquisition and procuring, conversion, and all logistics administration actions. There must be seen that SCM is being operationalised in all the sections, units, or departments and operational areas of

businesses (Baben, 2013). Table 2.1 further gives other definitions of SCM by other researchers.

Table 2. 1: Supply Chain Management Definitions

Author (s)	Definition
Ellram (1996).	A link of organisations collaborating to supply products or services to the end user, an adjoining movement starting with the supply of natural ingredients to the distribution notch.
Hugos (2011).	Focuses on enhancing the search for raw materials, converting, and conveying the goods/services to clients.
Ayers (2001).	It is the upkeep, outlining, and supply chain operation to relieve end users' needs.
Ganeshan and Harrison Terry (1995).	It is a linkage of materials and the supply strategies that undertake the roles of purchasing materials, converting them into semi-processed and processed products, and the supply of the processed materials to clients.
Lee Hau and Corey (1995).	The mixing of activities occurs among a group of interlinked facilities that purchase raw materials, convert them to semi-processed and then processed products, and supply them to clients through a supply system.
http://www.cscmp.org accessed on 21-11-2017	The outlining and administration of all actions from searching and purchasing products which include the entire handling of material programs.
Christopher (1998).	SCM is the administration of upstream and downstream affiliation with suppliers and clients to give out higher client value at a minimal cost to the distribution network.
Banerjee and Mishra (2017)	A group of actions is pursued in an organization to advance adequate supply chain administration.
APICS (2015)	It is "an intertwined business process that involves the "design, planning, execution, control and monitoring of supply chain activities to create a net value, building a competitive infrastructure, leveraging worldwide logistics, synchronizing supply with demand, and measuring performance globally."
Li <i>et al.</i> (2005).	It is explained to be the execution of processes by any entity to create awareness of good management of its up and downstream systems.

This study adopts the definition of Ganeshan and Harrison Terry (1995), who viewed SCM as a linkage of materials and the supply strategies that undertake the roles of purchasing materials, converting them into semi-processed and processed products, and the supply of processed materials to the client (final consumer). It must, however, be noted that the definition of SCM encompasses the sourcing of raw materials, turning them into processed products, and transporting them to the client with the ultimate aim of the client's satisfaction (quality) which is found in all the definitions though slightly different in their wording.

This involves acquiring raw materials, converting them into semi-processed or finished products, adding value to the products to make them competitive, and transporting and distributing them reasonably to the end users in the appropriate state to the required destination and at the right time. Collaboration and cooperation are vital principles that many organizations are implementing with other organizations to provide for the needs of their clients. This has made supply chains become systems of connections between firms and customers since they depend on each other for their livelihoods (Choi *et al.*, 2015). According to Kamal and Irani (2014), aligning the needs and aspirations of various clients within and outside the firm is seen as an essential tool for the firms in practicing potent supply chain practices to come up with the integration of supply chains, which will augment effective operations. When integrated well, these supply chain management practices will help produce high-quality products/ services to clients' satisfaction (Tsai and Hung, 2016).

Boon-itt (2011) posited that supply chain management practices with some characteristics increased the understanding of supply chain integration applications

and, with the level of integration goes to improve the performance levels of the firms. Veera *et al.* (2016), in their studies on the electronic industries in Malaysia, found the performance of the manufacturing industries to be partially mediated by supply chain integration. The study saw that supply chain management practices were drivers of supply chain integration. For needs to be responded to promptly (just in time), effective management practices must be put in place coupled with the integration of suppliers, and customers expect to receive products or services that they order with the supplier keeping minimal orders (Wang and Liu, 2007).

SCM practices have been a good facilitator of SCI and have been investigated and justified by some researchers (Alfalla-Luque *et al.*, 2015; Flynn *et al.*, 2010). According to Sundram *et al.* (2018), SC information management and information system infrastructure significantly affect supply chain integration. Moreover, Xu *et al.* (2014) found inter-organisational resources to influence customer and supplier integration. Again, Lockstrom *et al.* (2010) in their study found top management support to influence supplier and internal integration significantly. Knowledge acquisition and dissemination are significantly related to supply chain integration. From the study of Vickery *et al.* (2003), for effective actions of SCM, there should be the integration of movements and structures all over the supply chain.

This involves suppliers and customers (Chopra and Meindl, 2007); therefore, the extent of integration is an essential determinant of the application's fruitful. This is to say that SC is applicable in the upstream and downstream routes that need critical attention (Van der Vaart and Van Donk, 2008). Due to the complicated nature of SCM, researchers have challenged that it needs some level of integration to establish its strength (Chopra and Meindl, 2007; Ellram and Cooper, 2014). It is further argued

that SCI requires some form of improvement in the SC (Steven, 1989; Christopher, 1998) as a condition for it to work as a handler for outstanding application of SCM. Accordingly, the efficient development of SCM practices requires critical consideration of SCI (Kim, 2009). From the deliberations above, extant studies show that the integration of SC is made up of internal as in the firm or external with suppliers or clients. Internal integration signifies "the strategic system of cross-functioning and collective responsibility across functions" (Wong *et al.*, 2011, p. 605), while external integration signifies the level of an organization's system and linkages with associates in the supply chain (upstream and downstream). There is a view to communicate among themselves and plan together to attain collective targets (Saeed *et al.*, 2005). Internal integration comprises teamwork and assistance in the firm's purchasing, manufacturing, delivery, and selling activities (Wong *et al.*, 2011; Zhao *et al.*, 2011). When strong internal integration activities exist, operational idleness is eliminated, and operational levels are improved (Flynn *et al.*, 2010; Wong *et al.*, 2011).

With external integration, organisations are positioned to cooperatively advance techniques to take dominion in the business atmosphere with their supply chain associates (Zhao *et al.*, 2011). This invariably helps in solving challenges that might have been built. External integration, therefore, allows precise and speedy communication and merchandise over the firms' confines with a reduced allocation of resources, enhancing the organisations' performance (Flynn *et al.*, 2010). Therefore, SCI requires some attention in the formulation of efficient SCM practices. The sharing of information amongst SC members has been considered critical if shared efficiently (Li *et al.*, 2006; Mentzer *et al.*, 2001). Many researchers argue that

when information is shared and understood well within the supply chain systems, people apply it to improve the firms' competitive edge (Fiala, 2005; Lee *et al.*, 2000; Li *et al.*, 2006). This further argued that members within the SC (internal and external) could get the drift of the communication better and respond positively to the needs of the clients promptly (Collin *et al.*, 2009). According to Moberg *et al.* (2002), firms are able to get an ambitious preference over others when sufficient and valuable information is shared amongst supply chain partners inside and outside the organization.

Lofti *et al.* (2013) posit that unpredictability may come up if other supply chain members in a firm are denied concrete information, which may cause the bullwhip effect. Thus, sharing information amongst supply chain partners will enable individual SC partners to give concise forecasts established on actual requests (Fiala, 2005; Lee and Whang, 2004), which will help planning purposes. Lofti *et al.* (2013) further argued that firms are encouraged to implement good scientific information tools to disseminate information within the supply chain to enhance their competitive edge by reducing unpredictability, cost reduction, prompt delivery, and remaining in the present international business. It is further argued that information technology acts as a decisive facilitator of SCI amidst taking, regulating, and sharing crucial communication concerning critical business procedures inside and outside a firm's confines (Frohlich and Westbrook). Information technology has also been viewed as a huge benefit to promoting integration and planning between supply chain associates over information shared on request estimates and management itineraries (Karoway, 1997). Fawcett and Magnan (2002) posit that very few firms have attained in-house integration of their actions in a more excellent elementary

plan. The proposition is that quality sharing of information and information shared appropriately and on time helps to change storerooms and firms' operations to efficient integrated work procedures (Sundram *et al.*, 2018). For instance, organisations engage in requests and stock information with suppliers, which enables suppliers to make room for superior goods and services promptly (Sundram *et al.*, 2016). When this is done effectively, supply chain integration involving conversation, shared information on stock data, and linking up with suppliers could minimise suppliers' complicatedness (Lee *et al.*, 1997; Das *et al.*, 2006). This can be achieved if organisations are made to perform their jobs as a group and share ideas concerning management records, and request estimates involving their suppliers that could minimize the "bullwhip effect" (Lee *et al.*, 1997). With SCI in existence, the coordination of information transmission within the SC networks could be established with communication tools and shared information (Sundram *et al.*, 2017). So, information sharing improves SCI, enhancing significant transformational activities to affect performance (Kang and Moon, 2016).

Global SC has become so relevant for competition, but the minimal integration of the SCs between firms or amongst local and global firms interferes with the capabilities of international SCM (Liu *et al.*, 2015). Business practices are well facilitated when there is proper integration with suppliers and clients in controlling relationships (Frohlich and Westbrook, 2001; Weingarten *et al.*, 2016). When the integration is done well, there is effective communication, stock flow, and services over the SC at the SCM height (Schoenherr and Swink, 2012; Weingarten *et al.*, 2016). It is widely believed in SCM literature that complete integration involving critical suppliers and clients is uncommon and challenging to arrive at (Huo *et al.*,

2016) due to setbacks like administrative, legislative, and capital (Cao *et al.*, 2015). Academicians trust that organizations could depend on top managers' critical roles to expand and maintain SC links (Shou *et al.*, 2016; Wang *et al.*, 2016). In the study of Thai and Jie (2018) in the container packet sailing industry, there was a positive relationship between Total Quality Management (TQM) and SCI. It was further revealed that SCI must be the target of TQM if the industry is to thrive on greater performance successes.

The SC is a foundation for acquiring raw materials, turning them to finish and semi-finish products, and delivering them to the final user. It is a system of connections between firms comprising various associated groups like producers, distributors, sub-distributors, service providers, and clients (Carter et al. 2015; Choi et al. 2015). Granted by Chopra and Meindl (2014), SC is also seen as the interactions between different organisations involved in their top-bottom linkages in the management of their different activities and operations that produce products and services for the well-being of the customer. It consists of all bodies taking part, directly or indirectly, to meet a client's objective. From the above definitions, there is a clear process involved in defining SC which starts with the acquisition of raw materials, which are sent to the production unit, converted to a semi-processed state and then to the finished state, and finally supplied to the final consumers.

It can be realised that, for effective SC, there must be effective management of information flow within the SC networks (Zhou and Benton, 2007). Since there are different processes related to SC networks, from sourcing raw materials to converting and supplying the final product to satisfy customers, one must deal with

a complex and challenging network. This calls for proper management of the SC network, which will look at the various processes involved in managing the whole process.

Therefore, SCM is not just a chain of business on a one-to-one, business-to-business relationship; it is a network of multiple business relationships to gain synergy of intra-company and inter-company integration and management (Zhang et al., 2020). It is a business practice aiming to improve how a business sources its raw materials and delivers its final products to the final consumers. It is managing material, funds, services, and information within and across the supply chain to maximise customer satisfaction and get an edge over competitors. It also involves suppliers, logistic providers, customers, and other members that deal with complex demand and supply networks (Shahbaz et al., 2017). It can also be classified as an organizational network that connects every segment of the organization and adds value at each stage of strategic operations (Kucukkocaoglu and Bozkurt, 2018; Maldonado-Guzman et al., 2018). For any product or service offered by any business, some business entities are usually involved in the SC's various stages, including manufacturers, wholesalers, distributors, retailers, and consumers. SCM is important for modern businesses because it coordinates and synchronises the activities of partner businesses, giving higher efficiency (Moenga, 2016).

SCM is a concept that has gained lots of interest lately among scholars and professionals (Kamalahmadi and Parast, 2016; Sweeney et al., 2015; Chicksand et al., 2012). It has been the focus of attention from practitioners and academics alike in

operations management over the last few decades. It has brought different functional areas under one umbrella, such as procurement, operations, and distribution (Carter et al., 2015). Similarly, SCM literature cuts across several disciplines, including marketing, logistics, manufacturing, and information technology (Cooper et al. 2019).

SCM has grown to become a leading philosophy in managing organisations. The growing prominence of the field over the years has seen functions and departments in organisations being renamed from purchasing and supply to SCM. Among them include professional bodies such as the Council for Logistics Management, which has rebranded to the Council for Supply Chain Management Professionals (SCMPs) to accommodate the popularity of SCM. Despite such growing popularity, there is a general lack of consensus in the literature and among scholars and practitioners in defining SCM (Sweeney et al. 2015). In view of its interdisciplinary and complex nature, the domain of SCM means different things to different people according to the functional disciplines with which they identify.

Ellram and Cooper (2014) reviewed the top 100 cited articles from published scholarly articles on SCM and related areas and discovered five major perspectives of SCM in the literature. They are SCM as a process, a discipline, a philosophy, a functional area, and a governance structure. First, SCM is a process that links value-creating activities from raw material sources to end customers (Ellram and Cooper, 2014; Stock et al., 2010). It represents one of the dominant themes in the literature and has been used to demonstrate how SCM can be implemented within and across

firms (Chen et al. 2009; Croxton et al. 2001; Lambert et al. 1998; Mentzer et al. 2001). Secondly, SCM as a discipline is considered a standalone area of academic study, just like marketing or mathematics. However, there are reservations about this perspective, with some arguing that SCM is yet to mature into a standalone discipline. For example, Burgess et al. (2006) contended that SCM is not well developed from a conceptual and methodological viewpoint.

The view of SCM as a philosophy emphasises two distinct schools of thought. First, SCM is premised on the customer satisfaction philosophy that calls upon the entire SC to adopt a service-dominant logic (Lusch, 2011). Second, SCM as a philosophy emphasises the integrated systems approach to managing the various links across SC as a single unit rather than parts of a whole (Cooper et al., 1997; Mentzer et al., 2001). This philosophical view of SCM is summed up in the concept of Supply Chain Integration, which underscores the importance of close collaboration with key SC partners to ensure the efficient flow of materials, information, funds, and products from suppliers to the end customer (Fabbe-Costes and Jahre, 2007).

Again, the functional area perspective of SCM considers the concept as one of the many functions in organisations alongside marketing, finance, and others, which is the least popular in literature. Finally, SCM as a governance structure concerns itself with how SCs are managed, controlled, and directed (Ellram and Cooper, 2014). This governance structure perspective focuses on a wide range of issues, for example, SC relationships, collaboration, and how parties in the SC use their connections and networks to obtain access to resources as well as dependencies and interdependencies among firms.

SCM has emerged as one of the critical strategies for operational success. It has also emerged as a universal strategy integrating all stakeholders, such as sellers, buyers, and consumers, in a chain structure through partnership, shared planning, and information sharing. The effectiveness of any SCM is entirely based on its cost reduction ability, improving production flexibility, bringing innovation, strengthening the relation, and satisfying the buyer (Luna-Maldonado et al. 2016; 2018; Wang et al. 2016; Le et al. 2018).

Crainic and Laporte (2016) argued that SCM is a coordinated set of activities, from procurement to production and ending with consumers. For them, an effective SC helps firms make informed decisions at every link of this chained network. Many prior authors discussed the SC as a function of the flow of information to and from the organisation and argued that this efficient flow of information optimises the flow of material and lessens the cost because of efficient flow of information (Maldonado-Guzman et al., 2018; Kucukkocaoglu and Bozkurt, 2018).

Also, Belay (2019) underlined that SCM is a tool firms use to create, distribute, and sell products and services. As a result, it has become a powerful weapon organisations use to gain a competitive advantage over their rivals or competitors. This indicates that firms pursue SCM as the current methodology to reduce costs, increase profits, reduce lead time, and give satisfaction to their numerous customers, helping them utilise assets and build more revenues effectively.

According to Umutoni (2019), the concept of SCM has gained significant attention from various practitioners and academicians. The practice of SC is guided by some

underlying concepts which have not changed much over the centuries. The practice of SCM has been widely researched in numerous application domains during the last decade, and a number of definitions of SCM have been proposed in the literature (Felea and Albăstroiu, 2013). Various definitions of SCM from different authors have been shown in Table 2.2 below.

Author/Year	Concepts of supply chain management	Different Conceptual Dimensions
Ahmed (2014)	SCM is the coordination of a network of facilities and distribution options that performs procurement of materials, processing the materials into finished products, and distributing the products to customers	<ul style="list-style-type: none"> • Coordination facilities and processes
Künstler (2014)	The term 'supply chain' refers to a network of organisations involved in generating value for the end customer in the form of products and services via upstream or downstream links in different processes and activities.	<ul style="list-style-type: none"> • Creation of net value for the end customer
Lambert, Cooper & Pagh (1998)	SCM is the integration of key business processes from the original suppliers to the end user, which provides products, services, and information that add value for customers and stakeholders.	<ul style="list-style-type: none"> • Integration of key business processes from original suppliers to end user. • Value addition at each stage
Blackstone & Jonah (2013)	SCM is the design, planning, execution, control, and monitoring of supply chain activities with the objective of creating net value, building a competitive infrastructure, leveraging worldwide logistics, synchronizing supply with demand, and measuring performance globally	<ul style="list-style-type: none"> • Design, planning, execution, control, and monitoring of supply chain activities. • Creation of net value
Mittar & Deep (2015)	SCM is a set of synchronized activities. With its implementation of SCM, it is recognized that coordination among partners within the supply chain is a key factor to success. To operate a supply chain efficiently in a cooperative manner, all related functions across the supply chain must operate in an integrated manner.	<ul style="list-style-type: none"> • Set of coordinated activities • Coordination among SC partners. • Operate the whole supply chain in an integrated manner.

Author/Year	Concepts of supply chain management definitions	Differences in Conceptual Dimensions
The Council of Supply Chain Management Professionals (CSCMP), (2017)	SCM encompasses the planning and management of all activities involved in sourcing, procurement conversion, and logistics management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third parties, service providers, and customers. In essence, a supply chain management chain integrates supply and demand management within and across an organization.	<ul style="list-style-type: none"> • Planning and management of all activities • Coordination and collaboration with channel partners • Integration of supply and demand management within and across an organization
Hugos (2011)	The coordination of production inventory, location, and transportation among the participants in the supply chain to achieve a mix of responsiveness and efficiency for the market being served	<ul style="list-style-type: none"> • Coordination among the participants in the supply chain • Attainment of mix responsiveness and efficiency for the market being served

Table 2.2: Key concepts of supply chain management

The idea behind the concepts of SCM is generated from the various definitions. The researcher defines SCM as the management of activities and processes coordinated for the delivery of goods or services from the original supplier to the final consumer with the objective of adding value to the product or services. It includes coordinating activities, processes, and supply chain partners to improve and manage the efficiency and performance of supply chains through information sharing between supply chain partners.

2.3 Definitions of Supply Chain Integration (SCI)

According to Vikas *et al.* (2017), SCI has served as a link between the system and operation within an organisation. However, there are challenges in how the kinds of integration can be used to impact performance in the supply chains. Other authors have also given different views about SCI in terms of its definitions and defined SCI as the amount to which all movement inside a firm and the actions of distributors, clients, and other partners within the supply chain are combined (Flynn *et al.*, 2010; Rai *et al.*, 2006).

Moreover, Lambert and Cooper (2000) also defined SCI as integrating major work actions from customers over rightful distributors that administer products, assistance, and messages that improve the lot for clients and shareholders. In contrast, SCI's varying definitions and meanings have generated different results on the link between SCI and operational performance (Germain and Iyer, 2006). Businesses, therefore, strive best when they integrate inside and beyond the firm's confines as relevant in SCM, and so, SCM activities are seen as centralising in essence (Ellram and Cooper, 2014).

From the above definitions, it can be noticed that integration thrives well when firms integrate their functions within and across their working borders. Researchers, therefore, have seen the essence of a coordinated integration accord between operators and their supply chain associates (Hulten, 2016; Vermuelen *et al.*, 2016), which will enable firms to

remain competitive in the increasingly uncertain environment (Danese and Romano, 2010)

which gave rise to the approach of SCI (Palma-Mendoza *et al.*, 2014)

Table 2. 3: Supply Chain Integration Definitions

Author (s)	Definition
Tiwari (2021)	Supply chain integration basically refers to the ability of all partners' communications and information technology systems to convey a message in a seamless manner during the planning, execution, and conclusion of all transport and logistical activities during the course of a project's lifecycle.
Novais et al. (2019)	Supply chain integration is a significant business tactic that aims to improve communication and cooperation amongst all chain nodes.
Alzoubi et al. (2022)	A group of suppliers and customers that collaborate to maximize their overall performance in the design, production, and after-sales care of a final product is known as an integrated supply chain.
Munir et al. (2020)	Supply chain integration (SCI) is largely focused with the creation of more integrated methodologies that provide the possibility of eradicating a large number of the disadvantages directly linked to supply chain divergence.
Saragih et al. (2020)	Integration of the supply chain is crucial since it guarantees that all outputs, inputs, and materials are delivered on schedule and in accordance with specifications. By eliminating delays in the production, distribution, and logistics operations, this convergence saves so much time.
Khan and Wisner (2019)	The outlining and administration of all actions from searching and purchasing products which include the entire handling of material programs.
Ganbold et al. (2021)	SCM is the administration of upstream and downstream affiliation with suppliers and clients to give out higher client value at a minimal cost to the distribution network.

This study adopts the definition of Tiwari (2021), which states that supply chain integration basically refers to the ability of all partners' communications and information technology

systems to convey a message in a seamless manner during the planning, execution, and conclusion of all transport and logistical activities during the course of a project's lifecycle.

2.3.1 Measures of Supply Chain Integration (SCI)

Researchers have identified several SCI measures that aim to influence Supply Chain Performance (SCP). However, it has emerged that the achievement of any business entity depends mainly on the level of integration with the SC associates (Simon *et al.*, 2014). Even though SCI is the largest contributing factor to the success of any business, not all SCI are favorable (Vickery *et al.*, 2003). The various measures of SCI are thus significant in comprehending how they function as single measures or as an aggregate or whole. However, Bagheri *et al.* (2014) identified information flow, physical flow, and fiscal flow as measures of supply chain integration.

Past studies have identified measures of SCI into a one-dimensional construct (Huang *et al.*, 2014; Williams *et al.*, 2013; Lai *et al.*, 2014), while others put the measures into multiple dimensions, internal or external, supplier or customer (Demister *et al.*, 2016; Abdallah *et al.*, 2014; Droge *et al.* 2012; Cheung *et al.*, 2010; Alfalla-Luque *et al.*, 2013). Interestingly, some additional researchers also studied SCI as an aggregate which basically was used as a moderator (Kim, 2006) or as a mediator (Veera *et al.*, 2016; Kim, 2009; Huo, 2012). Previous studies have dwelt a lot on the direct links between SCI and performance in varying performance measures (Huo, 2012; Danese and Romano, 2010; Huang *et al.*, 2014; Kim, 2013). However, the relationships have been inconsistent due to the areas of study, the sample sizes used, and the type of performance measure. On the other hand, Lofti *et al.* (2013) found a reliable and valid relationship between the constructs in their study on the product quality – SCI relationship. Furthermore, in the study of Boom-Itt (2011), the direct effect of SCI on product quality was supported by only internal integration, which turned out

to be highly significant. More so, Vikas *et al.* (2017), in their study of "the impact of SCI on performance in the UK food sector," all the dimensions of SCI positively and significantly corresponded to supply chain performance. This is partly due to the one-dimensional nature of the SCI dimensions. Besides these, in the study by Ipek *et al.* (2011) on SCI on Supply Chain Performance (SCP) being mediated by information sharing, the direct effect of SCI on SCP was empirically found that SCI had a positive effect on SCP. This was partly due to the unified, centralizing, interdependent supply chain framework.

Additionally, in the study by Ni (2015) on the impact of SCI on operation performance, although the direct impact of SCI on operation performance was moderated by Information Technology (IT) competence, the direct effect of SCI on operation performance found only internal and product integration to correlate with the dependent variable positively and significantly, operation performance. Other researchers have also expressed diverse results on the correlation between SCI and working performance (Liu *et al.*, 2013; Swink *et al.*, 2007; Flynn *et al.*, 2010; Koufteros *et al.*, 2010), which could be due to the meager figure of investigation examining internal and external integration in one theoretical framework. The different dimensions of SCI have been studied along different parameters of endogenous constructs, giving different results.

A great number of researchers empirically found that SCI hinges on a strong pillar used to oversee SCs, which enhances performance (Weingarten *et al.*, 2016; Ataseven and Nair, 2017; Flynn *et al.*, 2010; Swink *et al.*, 2007) while some studies, a negative relationship is deduced (Narasimhan *et al.*, 2010; Vickery *et al.*, 2003). For instance, in the study of Wong *et al.* (2013) on "the direct and synergy effects of internal and external integration on product" modernisation, it was empirically deduced that internal integration positively influenced product innovation but was insignificant for balanced integration. This indicated

the critical role internal integration plays in realising workable SCI and the effect on the effort of firms to gain from external integration. It has been learned from the review of the literature that; most studies highlighted external integration, with a few on internal integration.

Currently, firms go beyond developing in-house systems and facilities within an organisation to have the edge over other competitors in the retail business (Frohlich and Westbrook, 2001). Thus, for effective SCM systems to function well, the supply chain members seek to outwit their competitors in the SCM by utilising the main drivers in SCI, networking the activities that go on inside the firms with the outside suppliers, clients, and other stakeholders within the network (Flynn *et al.*, 2010; Vickery *et al.*, 2003; Frohlich and Westbrook, 2001). This has been viewed by other researchers that SCI has become more of a process than a philosophy that comprises allocating assets and knowledge across in-house departments and outside firms (Swink *et al.*, 2007; Frohlich and Westbrook, 2001).

SCI has therefore been seen as an aspect that ought to be explored due to its various roles in strengthening operational performance if the organisations want to remain in business and have an advantage over its competitors (Danese and Romano, 2010). Researchers like Fawcett and Magnan (2002), who came after them which are new have developed a thought that integration dwells on supplier integration, customer integration, and internal integration (Veera *et al.*, 2016; Zhao *et al.*, 2011; Schoenherr and Swink, 2012; Flynn *et al.*, 2010). However, other researchers have categorised SCI into only two constructs: internal integration and external integration (Narayanan *et al.*, 2011; Droge *et al.*, (2004).

The concept of SCI is generally defined as the extent to which companies are strategically interconnected with their supply chain partners in collectively managing processes (Huo *et al.*, 2015; Alfalla-Luque *et al.*, 2015; Flynn *et al.*, 2010). It is the process of aligning internal

and external supply chain flows through cooperation, collaboration, and coordination to generate value for the end customer (Arantes et al., 2018). Byun et al. (2015) also defined SCI as an integration process across organisations and suppliers as well as customers based on long-term mutual relationships among them.

According to Kwamega (2018), SCI is the extent to which an organisation cooperates with supply chain partners and supportively regulates internal and external organisational practices to accomplish proficient movements of products, services, data, finance, and decisions to render paramount value to its customer. It can also be termed as the aptitudes of a firm in making strategic alliances, sharing information, process coordination, and integrating resources.

SCI has been studied from different perspectives, highlighting different aspects of the concept. For example, managing the production and transportation of physical goods has long presented the challenge of ensuring that products reach their destination on time and in the right quantities. The integration of these activities across actors ensures that inventory can be monitored to avoid stock-outs while decreasing the need for safety stocks. It is considered the powerful weapon an organisation can use to gain competitive advantages and link performance measurement systems, which can lead to increased success of supply chain initiatives (Kinya, 2016)

Zhang et al. (2015) posited that the main objective of every organisation in the supply chain is to function as a corporate entity to achieve effective and efficient flows of goods and services, sound financial flows, and provide maximum value to customers. To achieve this,

cooperative partners in the supply chain must adopt efficient SCI by integrating essential resources and connecting all functional processes to use these resources effectively. Studies conducted around the globe observed that an increase in SCI results in an improvement in product quality, innovations, firm performance, competitiveness, and OP of organisations. It also enhances information and materials flow and significantly affects OP (Roldan et al., 2017).

Osei et al. (2017) also confirmed mixed reactions to the relationship between SCI and firm performance in the service industry in Turkey. In the same way, Bahrami and Sabetfar (2015) inspected the impact of SCI on competitive capabilities in the Automobile Parts Manufacturing Industry in Qazvin Province. They concluded that the aspects of an integrated supply chain (internal and external integrations) greatly impact competitive capabilities. This demonstrated that a higher integration in the supply chain improves competitive capabilities. Similarly, Gizaw (2016) posited a mixed reaction to the relationship between SCI (internal, suppliers, customers, and information integration) and OP in a study conducted on Ethiopian trading enterprises.

In a study to examine SCI and its effects on lead times for the retail industry in Ghana, Fekpe et al. (2015) confirmed a significant reduction of lead times in the relationship. The benefits of reduced lead times include improved product availability, customer satisfaction, supply chain performance, and efficiency. Tsegaye (2018) also examined the effects of SCI on OP at Dashen Brewery Share Company in Ethiopia and eluded a significant positive impact on OP. To improve OP, the three variables of SCI (i.e., internal, customer, and supplier integration) need to be enhanced. Also, Syakibe et al. (2017) investigated SCI in the grocery supply chain in Indonesia, and the result revealed that sharing information between traders and input

suppliers is an important factor in implementing SCI in the supply chain, leading to improved competitive advantage. Therefore, specialization is essential if firms can succeed in this dynamic environment. A business's internal and external functions must become integrated for the enterprise to stand a chance to compete among the supply chain members (Chad and Mark, 2016). Therefore, SCI is regarded as one of the pivotal factors that affect OP as well as business performance (Saleh, 2015)

Businesses should look beyond the initial price for implementing SCI and recognize that integrating supply chain systems and tools can build a strong and unrelenting relationship with suppliers, which can pay greater dividends in the long run (Chimwani et al., 2014; Otchere et al., 2013). Furthermore, SCI will significantly impact OP should the processes be streamlined and efforts made to discard indolence and improve concerted efforts within the supply chains to give value to productivity.

SCI can be categorised into two variables, namely internal and external integration, but the external can further be classified as customer and supplier integration (Flynn et al. 2010; Zhao et al. 2011). Similarly, Mose (2015) declared that SCI could again be divided into two categories; internal integration, which involves multiple functions within companies, while external integration involves customers and suppliers within the supply chain.

2.3.2 Internal Integration

Internal integration is a coordinated effort of management in a company's operations. Various companies have the same functions, such as accounting, finance, procurement, human resources, and operations, but each should be well integrated to achieve their goals and objectives. Internal integration is related to easy access to key operational data from integrated databases. For example, information systems are integrated to connect to

various internal departments within an organization, access inventory information throughout the supply chain, and take inventory status in real-time, using computer-based systems planning between marketing and operations and with a high level of integration of information systems for the production process, Internal integration is the first step in achieving supply chain integration (Hamid and Sukati, 2011).

Theoretically, studies show that better internal integration can lead to enhanced supply chain management. According to Otchere et al. (2013), internal integration is a prerequisite for SCM. In addition, companies with a low internal integration strategy will achieve a low level of external integration, and companies implementing the full internal integration strategy will have the highest levels of external integration (Song & Song, 2020; Huo et al., 2015). Generally, it is believed that firms achieve a relatively high degree of internal integration before they attempt to develop a higher degree of external integration. Internal integration can be accomplished through automation and standardization of each internal logistics function, the introduction of new technology, and continuous performance control under the formalised and centralized organisational structure.

2.3.3 External Integration

External integration is the process by which a firm transacts business with its suppliers and customers to gain mutual benefit from each other (Stank et al. 2017; Huo et al. 2015). External integration can further be divided into supplier and customer integration (Kanyoma et al., 2018). Supplier Integration can be described as the creation of long-term business relationships involving the introduction of communication interfaces, the simplification of order processes, the standardization of operations, and the streamlining of joint work (Arantes et al., 2018; Ebrahimi, 2015). It also enables partners to match their business approaches to complement the suppliers' capabilities and buyers' demands. On the other

hand, customer integration identifies mutual coordination and interaction between a given company and its customers to ensure the effective flow of goods and services to customers (Stank et al., 2017). It involves the requisition of information from customers, providing better particulars to producers to understand customers' demands, and collaborating and cooperating with customers to design quality products, resulting in cost reduction. Customer integration is directly related to operational performance (Tavana et al., 2019; Otchere et al., 2013).

2.3.4 Conceptualising Supply Chain Integration

Past studies have shown varying results on the relationship between SCI and performance using different constructs. For example, Flynn et al. (2010) study explored the impact of SCI using internal, supplier, and customer integration as constructs on operational and business performance. The results identified a positive relationship between internal and customer integration and OP but no significant relationship between supplier integration and OP. Zahra et al. (2013) used three constructs of SCI, namely internal, customer, and supplier integration, in the study between SCI and product quality. They believed that if firms concentrated on supplier and customer integration, they could improve and increase their quality system. Ni (2015) also used three dimensions of SCI internal integration, process integration, and product integration, on performance. The author contended that SCI improves supply chain performance.

The study of Abate (2018) also used three constructs of SCI, namely internal integration, customer integration, and supplier integration, on the operational performance of the food manufacturing industry in Ethiopia. The study concluded that all three SCI dimensions significantly affect operational performance. In the same manner, Mose (2015)

operationalized SCI into internal, supplier, and customer on OP, which showed a significant positive relationship in the pork industry in Rwanda.

The study of Lu et al. (2017) used SCI as a single measure of OP and concluded that SCI was not highly influential on OP. Similarly, Dametew et al. (2016) also used SCI as a single measure of quality performance in manufacturing companies. They concluded that SCI has positively brought about a linkage among production, knowledge, technology, and resource integration to improve quality performance in the SC.

Furthermore, Vikas et al. (2017) examined the impact of SCI on performance in the UK food sector. All the dimensions of SCI positively and significantly corresponded to supply chain performance and are partly due to the one-dimensional nature of the SCI. Additionally, the relationship between SCI and supply chain performance (SCP), conducted by Ipek et al. (2011), which was mediated by information sharing, empirically found that SCI had a direct positive effect on SCP. It was partly due to the unified, centralising, interdependent supply chain framework.

The study of Seo et al. (2014) concluded that internal and supplier integrations mediated innovativeness-supply chain performance relationships, while on the contrary, customer integration did not mediate such relationships. The customers were seen to be redundant contributors to the partnership. In addition, Tarifa- Fernandez and De Burgos- Jimenez (2017), found a direct positive link between SCI and performance but varying inconsistencies when viewed with the moderating construct due to the measurements used.

Zhang et al. (2015) again used eight dimensions of integration constructs in their model strategic, planning and control, organizational, process, finance, knowledge, information,

and material. In their estimation, these dimensions were the exhaustive framework that could be used to measure performance.

Past studies have identified measures of SCI into a one-dimensional construct (e. g. Lu et al., 2017; Damatew et al., 2016; Huang et al., 2014; Danese and Romano, 2013; Narayanan et al., 2015; Liu et al., 2013;). While others put the measures into multiple dimensions, internal or external, supplier or customer (e.g., Zhang et al., 2015; Vikas et al., 2017; Mose, 2015; Abate, 2018, Nii, 2015; Cao et al., 2015; Zahra et al., 2013; Abdallah et al., 2014; Alfalla-Luque et al., 2013; Flynn et al., 2010; Hu et al., 2014; Zhao et al., 2013; Lofti et al., 2013), interestingly, some additional researchers also studied SCI as an aggregate which is basically used as a moderator (Luu, 2017; Kim, 2006) or as a mediator (Huo, 2012; Kim, 2009).

It can be observed from the above discussions that although scholars agree on single multidimensionality of SCI, literature is inconclusive on the exact conceptualisation of the construct. In line with the discussions above, the study conceptualises SCI as a multidimensional measure adopted from (e.g., Abate, 2018; Vikas et al., 2017; Zhang et al., 2015; Nii, 2015). The study, therefore, suggests that SCI must be studied as a multiple dimension to serve as a mediating variable on OP so that more generalised results can be realised.

2.4 Socio-Cultural Factors

There is limited literature on how socio-cultural factors, including organisational culture, national culture, cross-culture, and openness to diversity, influence SCI (Braunscheidel et al., 2010; Cao et al., 2015; Yunus and Tadisina, 2016; Wong et al., 2017; Porter, 2019; Liu et al., 2021; Aćimović et al., 2021). However, SCI is planned, executed, and controlled by people (Cao et al., 2015). Individuals do not act purely rationally since they care about others and are influenced by their relationships with others and their cultural background (Cai et al.,

2017; Schorsch et al., 2017; Sweeney, 2013). Therefore, it is necessary to study the link between socio-cultural factors, such as organisational culture, national culture, cross-culture, and openness to diversity, to understand SCI comprehensively. Though prior studies have examined the link between organisational culture (Braunscheidel et al., 2010; Cao et al., 2015; Yunus and Tadisina, 2016; Porter, 2019; Aćimović et al., 2021; Taha et al., 2021; Afshar and Fazli, 2022), national culture (Hamri et al., 2016; Wong et al., 2017; Durach and Weingarten, 2020; Liu et al., 2021) and supply chain integration. Recent studies have called on the need to explore further the role of socio-cultural factors in achieving supply chain integration (Erlinda et al., 2015; Vermeulen et al., 2016; Yu et al., 2016; Porter, 2016; Benerjee and Mishra, 2017; Prajojo et al., 2018; Wang et al., 2018; Wang et al., 2018). Lui (2021) further advanced that cultural differences within organisational and national cultures remain underexplored and require attention. This study responds to these calls by examining how supply chain integration could be achieved through socio-cultural factors such as national culture, cross-cultural differences, organisational culture, and openness to diversity. This will therefore aid in closing the gap in literature regarding the socio-cultural perspective of integration. This study, therefore, aims to examine how socio-cultural factors such as national culture, cross-cultural differences, organisational culture, and openness to diversity as determinants of SCI.

2.4.1 Organisational Culture

Organisational culture has long been an important theoretical factor in organisation theory (Allaire and Firsirotu, 1984; Denison and Mishra, 1995; Peterson, 2010). However, the extant literature still has no consistent definition of organisational culture (Detert et al., 2000; Schein, 2004). Hofstede (2001) regards organization culture as “the differences in the collective mental programming” found among people in different organisations. Schein

(2004) argues that culture includes underlying assumptions, espoused values, beliefs, and artifacts. He defines organisational culture as:

[. . .] a pattern of shared basic assumptions that a group learned as it solved its problems of external adaptation and II, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems (Schein, 2004, p. 17).

Although these definitions are insightful, they are difficult to operationalise further or to examine empirically. Scholars commonly focus on the value or belief aspects of organisational culture rather than the underlying assumptions or the artifact aspects (Nahm et al., 2004; Schein, 2004). Schein (2004) argues that values are less invisible and less preconscious than basic assumptions and are more decipherable than artifacts so that values are easier to study (Gregory et al., 2009; Hofstede, 2001; Leidner and Kayworth, 2006; McDermott and Stock, 1999; Naor et al., 2008). Following previous studies, the researcher defines organisational culture as the values or beliefs shared by all members of a firm.

Among the various operationalisations of organisational culture as a system of values, the CVF is among the most popular (Braunscheidel and Suresh, 2009; Gregory et al., 2009; Hartnell et al., 2011; Zu et al., 2010). The CVF involves two axes: the flexibility – control and internal – external axes. These axes divide organisational culture into four dimensions, namely, the development, group, hierarchical and rational dimensions (Denison and Spreitzer, 1991; Gregory et al., 2009; Stock et al., 2007; Quinn and Rohrbaugh, 1983; Zu et al., 2010). These dimensions of culture reflect various values, such as long- or short-term orientation (development culture), cooperation and team spirit (group culture), reward systems (rational culture), and centralised or decentralised control (hierarchical culture)

(Gregory et al., 2009; Hartnell et al., 2011; Stock et al., 2007; Zu et al., 2010). Following previous studies, this study uses the CVF to represent organisational culture.

2.4.2 Cross-Culture

Cross-cultural management refers to the recognition of diverse cultures and the significance of overcoming them among several entrepreneurs from various countries, experiences, and nationalities (Han et al., 2018). Cross-cultural education is now of utmost importance to business's economic globalization. Cultural traits give some perspective on how activities should be interpreted in being involved in supply chain performance improvement (Pang, 2020). A company's culture is known as the mix of common characteristics that influence how a group will react to its surroundings (Luo, 2021). Different diameters levels are present in both corporate culture and country culture. The standards of corporate conduct are based on national culture, which supports the culture of the organisation (Nguyen et al., 2021). Cultural disputes are common in the modern economy since certain nations and ethnicities often have their own distinctive cultures. According to several authors (Li and Zhang, 2018), a "cultural gap" in business relationships can result in radically divergent organisational behaviour, management choices, and corporate ethics. In light of this, it is further suggested that culture may have an effect on company performance. Despite the partnership's growing appeal as a business strategy, scholarly analysis is deficient in a number of areas. Zhao and Chen (2018) are a few studies that have been published on supply chain effectiveness that address the roughly comparable proficiencies of achievement. Nevertheless, only Rahim et al. (2020) have examined cultural differences through the lens of a thorough and trustworthy knowledge of supply chain integration assessment methods for supplier evaluation by cross-cultural firms is based on empirical evidence, which can only be obtained via further study, according to the varied outcomes.

2.4.3 Openness to Diversity

According to Murshed (2020), openness to variety is defined as "an awareness and possible tolerance of both commonalities and contrasts in others," and it may be shown via one's ideas, sentiments, and actions (Basheer et al., 2019). Diversity includes but is not limited to, the spectrum of similarities and distinctions that every person contributes to the business world. Individuals must be "open to variety," which is described as having an open mind regarding diverse values and beliefs, in order to adapt to various cultural environments or acquire various cultural orientations (Murshed, 2020). Studies looking at the benefits of tolerance for cultural variety consistently come to good conclusions. A detailed investigation of how diverse experience affects receptivity to difficulty and diversity produced clear findings demonstrating the link among these factors. The openness to diversity scale by Telukdarie et al. (2018), which measures an entrepreneur's level of familiarity with diversity and awareness of diverse viewpoints, concepts, and viewpoints, was one of three separate assessments used in the investigation, which would include businessmen (Ivanov and Dolgui, 2021). The findings indicated that entrepreneurs who had previously encountered greater cultural variety were more receptive to diversity as well as to both personal and cognitive pressure. It has been shown that direct or indirect exposure to many ethnic groups and beliefs helps people develop a good perspective toward diversity (Kumar et al., 2020). It follows that tolerance for diversity has an evolutionary purpose in situations with various cultural influences. Openness to variety and psychological well-being at work was revealed to be positively correlated (Nweke et al., 2019). Businessmen at their corporate places who were exposed to diverse surroundings showed similar outcomes (Gölgeci and Kuivalainen, 2020). It is reasonable to assume that adolescents exposed to various socio-cultural contexts in various socializing situations will adapt better if they are open-minded to variety.

2.4.4 National Culture

National cultural differences can influence the elements of refugee supply chain management and the types of integrative and collaborative processes considered effective in a society (Pagell et al., 2005). The literature suggests that socio-cultural forces can influence the elements of supply chain management; these cultural factors also play an important role in humanitarian supply chains (Oloruntoba and Banomyong, 2018). Empirical work comparing supply chain management across nations has found that country-level differences impact inter-organisational relationships, business outcomes, and the amount of trust that others place on the supply chain partnerships, as well as teamwork, information sharing, and risk-taking (e.g., Cao et al., 2015; Lioukas and Reuer, 2015; Özer and Zheng, 2017; Ueltschy et al., 2007).

This study uses Hofstede's (Hofstede, 1993; Hofstede et al., 2010) cultural value dimensions to examine the elements of supply chain management and integrative and collaborative processes. Hofstede (1980) describes culture as mental programming that is developed through socialization in early childhood and reinforced throughout life through various shared experiences in organisations and society. Because of the shared common experiences of people within countries, these mental programs are articulated as dimensions of national cultural values that dominate among people from a country (Hofstede, 1980). Hofstede's work was originally based on data collected from a large organisation in 66 countries (see Hofstede (1980) for an extended discussion on the methodology used) and has since been replicated by numerous researchers in several countries and cited by many more on the Social Science citation index. Although the researcher believe that Hofstede's findings are relevant to the supply chain context, there are certain limitations of his research that this study has to keep in mind, such as the time

at which the original study was conducted, the original sample which consisted of mostly white-collar employees of a company and the emphasis between culture variations (Hofstede has stated that within-culture variations can be as important as between culture variations).

Hofstede's dimensions have been used to explain a number of intercultural phenomena and complexity related to work-related culture. These five dimensions have been empirically tested across cultures and offer a generalisable framework within which to examine the impact of culture (Clark, 1990; Özer and Zheng, 2017). In addition, the suitability of Hofstede's work in examining supply chain relationships has been suggested in the literature (Kale and McIntyre, 1991; Williams et al., 1998). Although Hofstede's cultural dimensions are meant to examine cultural values at the national level, the values of an organization or Non-Governmental Organisation (NGO) are often influenced by the nationality of its home country through its founders and significant leaders; these values serve as a frame of reference for organisational activities (Hofstede et al., 2010). Similarly, the values of municipalities along a supply chain will be influenced by the cultural values of the countries of those municipalities.

2.5 Trust

Trust has been indicated as a critical variable in supplier-buyer relationships within the business milieu. The critical role of trust underpins the complex business network contributing to organisational success. A number of significant actors has defined the term trust. According to sociologists, trust is regarded as the readiness to depend on an exchange partner in whom one has confidence (Moorman et al, 1992, p.10; Cook et al., 2009, p.15). Within the business environment, trust exists when a party has the belief that the other will

act in their interest in the business transactions (Brown et al., 2010). Within the global culture, trust is seen from two dimensions, namely, the personal and organisational levels. Cultures in Africa and China cultivate trust at the personal level, while Western countries cultivate it at the organisational level. Trust indicates "a person's reputation for trustworthiness on both a professional and personal level as well as credibility in a business situation" (Hsiao et al., 2009). The study by Ganesan (2004), discovered that fairness on the part of a supplier exerts a significant effect on business credibility and the satisfaction of the buyer. Liu and Wang (2000) reported that trust leads to lower transaction costs, reduced opportunistic behaviour risk, long-term relationship building, and increased investment. Within supply chain management, Brown et al. (2010) conveyed that the higher the level of trust, the higher the chance of a positive attitude to development in an organisation. The study by Dyer and Chu (2003), reported that trust fosters supply chain collaboration.

2.5.1 Relational Trust

Relational trust is built via connections based on respect for one another and a sincere willingness to learn from one another and collaborate to tackle challenging issues (Edwards-Groves and Grootenboer, 2021). Trust grows when partnerships are defined by dependability and integrity (Miesner et al., 2022). In diverse social systems, trust may take on numerous forms, one of which is referred to as "relational trust." According to Bryk and Schneider, relationship trust is the "connective tissue that connects people to enhance pupils' well-being and learning (Li et al., 2019). It is created by the shared understandings that result from long-term relationships between people, in this example, the team and the professional leader, all of whom are required to act in a professional manner. Due to the intimate physical working relationships instructors have with one another, developing relational trust is very important in the ECE sector (Parra-Requena et al., 2022).

Since Rodd stated that developing trust stimulates a cooperative team spirit, it is the Professional Leader's responsibility to actively seek ways to foster team camaraderie. Teachers are motivated to strive for their best performance individually and as a team when they have a trusting relationship (Weinstein et al., 2020). Results from Opie et al. (2023) confirm this since this set of case studies on what constitutes successful leadership was infused with ideas of relational connectivity and trust building (Baxter and Ehren, 2023).

Moreover, studies have shown that an environment of transparency and trust between a Professional Leader and the team fosters an excellent teaching and learning environment for both instructors and students (Bennett, 2019). Sustaining trust within the group is crucial because the effectiveness of adult relationships not only affects the teaching team's confidence but also has a big impact on the growth and accomplishment of children (Jacobsen et al., 2021).

A substantial failure on any one criterion can be sufficient to impair a judgment of trust for the total connection," according to Law (2020) discussion of the leadership attributes that foster relational trust. The most fundamental of these virtues is respect, which is largely shown through paying attention to and appreciating the opinions of others. Genuine listening during discourse and awareness of the other person's viewpoints in subsequent actions are characteristics of respectful interactions. People can and should still feel appreciated even when disagreeing if others honour their perspectives (Kim and Kim, 2021). The second trait is a genuine concern for others, and it shows that a leader is interested in the welfare of their team members' personal and professional lives. This results from individuals' desire to go above and beyond what is specified in their contracts or job descriptions, for example, out of a genuine concern for the welfare of others. A sense of concern and "a social association of personal significance and worth" then come over the

team (OlaREWaju and Tamvada, 2022). Following such activities, others are more likely to reciprocate, deepening the relationship between them. The third factor that guides trust judgments is called role competency, and it refers to how successfully leaders perform their assigned roles. Although each circumstance will call for a particular style or level of leadership competency, it can be challenging to gauge exactly how the trust will be established. Nonetheless, it is "extreme ineptitude is toxic to trust relationships," according to the author (CabRilo et al., 2020).

Honesty and integrity, which depends on whether a Professional Leader's actions and words are consistent, are the fourth factor in determining trust. The advancement of the main instrumental goals of any group activity depends on this dependability (Walker, 2022). Integrity also suggests that one's actions are guided by moral and ethical principles. This means that, in spite of interpersonal conflict occurring within a community, a dedication to the education and welfare of children must continue to be the top priority (Nyamrunda and Freeman, 2021).

2.6 Leadership /Top Management Support

Top management team may be explained to mean a "group of the most influential senior members, made up of Managing Director (MD), Operations Manager, Human Resource Manager (HRM) and Director of Finance, with an overall responsibility for the organization" (Lee et al., 2014).

Human resources in organizations have various roles that they perform to enhance the organisations' performance (Chen and Huang, 2009). The knowledge, skill, leadership, and compatibility of the human resource at the managerial level are valuable to the organization (Sanchez *et al.*, 2015; Jiang *et al.*, 2013). Leadership is the level of agreement of quality commitment by top management (TM) and attendance in quality enhancement activities

and observing the practice (A1-Damen, 2017). The real involvement in the day-to-day running of the organisation largely lies in the purview of the TM and their leadership style to make the necessary impact on the works and process management activities so that the performance activities will be met and the outcome levels improved for quality products

Top Management support (TMS) is explained to mean the level to which the Chief Executive Officer (CEO), Managing Director (MD), and other managers or directors of the organisations comprehend the consequence of SCM activities on the quality outcomes of the organization and how best they can provide good leadership and prepared to administer financial, material and motivational assistance for successful work output. That is, TMS is expressed as the recognized backing from the highest executive for the alliance, both within and outside of the organization (Vermeulen *et al.*, 2016). The impact of good leadership traits by top management in the fruitful execution of quality intention has been explained as necessary in the literature (Sanchez *et al.*, 2015).

Top management support and loyalty are changing the face of organisations by playing critical roles for achieving critical operational performance standards (Tari *et al.*, 2007). Suppose management's commitment is focused on involving employees (Yeung *et al.*, 2005) and customers (Robinson and Malhotra, 2005). In that case, there can be real change in the operations of the organisation (Kaynak, 2003). Management support can be in various forms, such as financial, quality communication, motivation, recognition, and strategic decisions (Kaynak, 2003; Tari *et al.*, 2007).

Other researchers have also posited that top management commitment must be put in place for effective quality performance (Salaheldin, 2009; Zehir *et al.*, 2012). Ou *et al.* (2007) were of the view that the role of top management and the style of leadership traits embedded in them influence the performance outcome of the employee, and as such, teamwork will be needed (Truong *et al.*, 2017). The motivation given by the top management team goes to accomplish stakeholder expenses, so their commitment cannot be brushed aside (Sanchez *et al.*, 2015). The decisions from organizations to achieve the goals do not come from an individual person but a team from the management (Lo and Fu, 2016) which feels the variations in the competitive business environment and lends their backing along that blueprint (Raman *et al.*, 2013).

The various firm's control is directional decisions, game plan, and composition which ultimately improves performance for quality improvement and standards (Rau, 2006). In majority of organizations, top management work hard to satisfy the customers' needs and requirements (Lakhal *et al.*, 2006) and so strives to accomplish (Kaynak, 2003), which explains the performance level of the organisation to the market. Therefore, top management explores the environment and makes concrete decisions and preferences, which invariably goes to enhance the strategic goal and performance of the organization. These choices and preferences confide in the knowledge and leadership skills they possess of the task hence improved performance (Hambrick, 2007).

In the study of Lo & Fu (2016), they found that the results back that synergy of CEOs and top management team boost organisational performance. Furthermore, Truong *et al.* (2017) posit that "top management support and process control/improvement" just have indirect and direct authority on operational performance. Though top management support

significantly influences the operational performance of organisations (Lo & Fu, 2016; Truong *et al.*, 2017), the joint efforts of the CEOs and the other team members is very relevant to influence the employees to maximise their efforts to improve their performance levels (Rivas, 2012). Hitherto, CEOs and top management can work together to encourage the workforce to put up their best if their leadership traits are general towards proper alignments in their decisions. This is why Camelo-Ordaz *et al.* (2008) argue that, in spite of innovation being afflicted within and outside the organisation, top management is a force that impacts the organisation's support for innovation which is characterised by good leadership.

2.7 Research Gaps

Various studies have been conducted to assess the impact of SCI on OP (e.g., Phan *et al.*, 2020; Memia, 2018; Veera *et al.*, 2016; Pati *et al.*, 2016). However, most of these studies have investigated the specific dimensions of integration and how they impact firm performance. As a result, it remains unclear what drives the integration. This leaves a gap in the relationship; therefore, the study aims to fill this gap by determining the combined impact of these relationships in the Ghana grocery industry.

Further, most studies reviewed focused on the effect of individual practices on performance without analysing how socio-cultural factors may drive SCI as well as the moderating effects of trust and leadership on the relationships. This, therefore, creates a gap that this research intends to fulfil. Furthermore, the introduction of moderating variables produces a different dimension that was absent in other studies, making this research unique and distant from all other studies on supply chain integration. Additionally, most of the studies reviewed identified positive relationships among the various constructs. In contrast, others showed

some inconsistencies in the relationships between the constructs used, creating gaps that this current research intends to fulfil.

The study also noted that most previous studies in Ghana focused on service industries and manufacturing industries. However, focusing on only one or two sectors leaves a research gap that this study wishes to fill. Therefore, the study based its findings on the grocery sector to corroborate its findings with those of the service and manufacturing sectors. This has provided a different view on the impact of SCF and SCI. Table 2.4 shows a summary of research gaps identified in the literature.

Table 2.4 Summary of Gaps in Literature

Gaps	Source
1. There is a need to study whether Supply Chain integration and the outlook to information sharing between carriers' associates are steadily suited to non-food class and other retailers in other terrestrial points.	Benerjee and Mishra (2017)
2. Despite the extensive amount of studies examining the integration within a supply chain, practices from developing countries were continually overlooked	Erlinda et al (2015)
3. There must be consideration of the specialized side of both information and process Management.	Prajojo et al. (2018)
4. Top management outlook on Supply Chain Integration should be considered precisely.	Vermeulen et al. (2016)
5. Practical aspect of supply chain integration can be mandatory by applying new variables of supply chain integration in the link of suppliers and customers in future factual studies	Yu et al. (2018)
6. Future studies should also consider triangulating the findings with different methods to investigate the relationships between SCI, its drivers, and firm performance	Erlinda et al (2015)
7. Strategic technology and knowledge integration which are some dimensions of SCI that may affect firm performance, must be looked at in future studies	Porter, (2016).
8. Pagell (2004) called for more research on the factors that enable and inhibit supply chain integration	
9. The influence of environmental factors such as culture and technology in SCI must be considered in future studies	Wang, (2018)
10. Further exploration is also needed into the question of why the moderating impact of barriers to supply chain integration had so little impact on the driver of supply chain integration, the desire to improve	Glenn et al (2009) ¹
11. It is necessary to study the link between IORs and IPRs in order to achieve a comprehensive understanding of SCI	Wang et al. (2018)
A longitudinal study would be preferred for a more in-depth study on how the factors drawn from both interpersonal and inter-organizational levels co-evolve and interact with each other, jointly influencing SCI.	Wang et al. (2018)
Future studies could adopt alternative research approaches, such as survey research, such that a more extensive and diverse firm population can be included to quantitatively test the interactions between IPRs and IORs and their joint influence in enabling SCI.	Wang et al. (2018)

Source: Compiled from Literature

2.8 Chapter Summary

The chapter reviewed the main concepts of the study, which include supply chain, supply chain management, and socio-cultural factors, including national culture, organisational culture, and openness to diversity and cross-culture. It also has supply chain integration, including internal, supplier, and customer integration. Additionally, the chapter captures leadership and trust as the two moderating factors in the relationship between the dependent and the independent variables. The chapter also highlights gaps in literature. The next section discusses the relationships among the variables.

CHAPTER THREE

THEORETICAL AND CONCEPTUAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

3.0 Introduction

The main theories used in the study and the conceptual framework are presented in this chapter. The developed hypotheses will be tested in chapter 5. The first part of the chapter presents the theories, while the conceptual framework and hypotheses follow.

3.1 Theoretical Foundation of the Research

Denzin (2017) defines theory as a natural or broad explanation of a phenomenon that has been observed and altered over a period of time. Grounding research on existing theory identifies the direction of the study and the variables that are deemed fit for the research. It has been widely acclaimed that since SCMPs are complicated, a multi-theoretical perspective is better placed to offer rich insight than a single theory (Nandi & Kaynak, 2020). Therefore, this study on the influence of socio-culture on SCI in the grocery sector is rooted in Dynamic Capability Theory (DCT) and Relational View Theory (RVT). These theories were used in the discussion to explain various relationships in the framework which are discussed below.

3.1.1 Dynamic Capabilities Theory (DCT)

The concept of dynamic capabilities theory (DCT) proposed by Teece and Pisano (1994) has evolved from the resource-based view (RBV) of the firm propounded by (Barney, 1986, 1991) and serves as one of the leading theories in recent years (Forkmann et al.

2018). The resource-based view (RBV) argues that resources that are valuable, rare, imperfectly imitable, and non-substitutable (VRIN) are a source of competitive advantage, but it does not explain how these resources evolve over time and how they can be adapted to quickly changes the environments (Barney, 1986, 1991). Although RBV is the most popular theory in previous research, it has its limitations, especially in explaining the dynamic development process (Khan and Lew, 2018). Global business is facing a dynamic and unpredictable environment; hence for the firm to sustain and be competitive and relevant in the market, the firm needs to be proactive towards the changing environment (Efrat et al., 2018).

The DCT, therefore, addresses some of these shortcomings by focusing on a firm's capacity to renew and reconfigure its resource toward changing business environments (Ambrosini et al., 2009; Eisenhardt and Martin, 2000; Teece et al., 1997). It refers to the continual renewal of an organisation's business processes or operational capabilities that must be aligned with its resources through modification to meet the changing needs of the business environment to gain a competitive advantage (Zaefarian et al. 2017). Helfat et al. (2007) define DC as a firm's capacity to purposefully create, extend, and modify its resource base. This indicates that capabilities cannot be bought in the market but can be repeatedly built and embedded in the firm.

Previous research has provided a significant definition of dynamic capabilities (Teece et al., 1997) as the ability of the firm to combine, develop and reconfigure external and internal expertise in order to respond to a speedily changing environment. Eisenhardt and

Martin (2000) also define it as the process of use of resources to create new resources that can create market change. It also involves altering resources that have been acquired, integrated and recombined to develop new creation of strategies (Grant, 1996; Pisano, 1994). Hence, dynamic capabilities are the factor in the creation of new sources of competitive advantage (Henderson & Coclburn, 1994; Teece et al., 1997).

Again, DCT argues that firms must transform their resources by improving and reconfiguring the current bundles of resources and capabilities (Kabongo and Boiral, 2017; Zahra et al., 2006). For a firm to achieve operational excellence, dynamic capability plays a significant role in enabling a firm to adopt and apply changes to its operations. The propositions made by earlier researchers posited that dynamic capability has a direct relationship with a firm's performance (Teece et al., 1997). Also, Zollo and Winter (2002) explored the direct relationship between firm performance and dynamic capabilities and continue to emphasize that if the firm has no dynamic capability in the changing environment, the firm's superiority and survival will remain temporal. This has been supported by Teece (2007), whereby the development of dynamic capabilities is to identify the sources of a firm's competitive advantage at the enterprise level, and the firm success or failure determines it.

Other researchers have also debated the direct link between dynamic capabilities and firm performance. For example, Eisenhardt and Martin (2000) argue that dynamic capabilities alone do not guarantee the firm's competitive advantage, but rather the arrangement and the positioning of the firm's resources created by dynamic capabilities are more skillful than the competition. This was also supported by Zott (2003), who

mentioned that modification and the alteration of the firm's resources through dynamic capabilities do not stand alone but are rather influenced by the firm performance. Additionally, Eisenhardt and Martin (2000) proposed that a firm that has dynamic capabilities will have an advantage over its competitor who does not have those capabilities, while Zott (2003) claims that a firm that has distinguished dynamic capabilities may develop a different kind of resources and as a result produce excellent performance level.

In the field of strategic management, there has been a focus on DCT, and a firm's success does not only depend on the resources and capabilities the firm has but rather on how the firm can adjust itself with the market (Rua et al., 2018). Therefore, the display of dynamic capability is paramount to firms to avoid exploiting shareholders' value. Additionally, in the turbulent and fast-growing market, the firm resources must be dynamic, and the managers need to know how to adjust the strategy to the environment to create new skills that can meet the market dynamics (Monteiro et al., 2017).

In other related development, Xu et al. (2018) identified another component of dynamic capabilities: dynamic marketing capabilities from the perspective of the inter-organisational relationship and entrepreneurial orientation factors. The study explores the dynamic marketing capabilities in the domestic and overseas markets. The implementation of dynamic capabilities from the international business perspective can also be used to develop a model of export capabilities such as adaptability,

innovativeness, unpredictability, and task-flexibility to achieve competitive advantage and export performance (Efrat et al., 2018).

The study of Fischer et al. (2010) examined the impact of sensing, seizing, and reconfiguration on service business development in capital goods industries and described dynamic capabilities as resources to distinguish between exploration and exploitation as two different options for growing service business. It came up that those dynamic capabilities are necessary for a move towards a service-oriented business model and further call for qualitative and quantitative research in this area, highlighting the opportunity to study the effect of dynamic capabilities on the success of the service business. Similarly, Kanninen et al. (2017) identify 14 capabilities within multiple cases in the process industry and link them to servitization steps. The importance of dynamic capabilities was highlighted to transform operating capabilities to quantify and communicate the value for the customer as well as sales and marketing capabilities. The study calls for an assessment of the effects of the identified capabilities on performance in a quantitative setting.

Saul and Gebauer (2018) also investigated the dynamic capabilities for offering solutions in the market development phase, focusing on the micro-foundations of these capabilities. The identification of 10 dimensions was related to sensing, seizing, and reconfiguration processes. The study focused more on companies in developing markets and therefore called for applying the dynamic capabilities in product firms in terms of

growth and maturity. DCT of Teece (2008) claims that firms utilise their limited resources and capabilities to adapt to the new or changing environment because organisations with enhanced dynamic capability perform better than organisations with lower dynamic capabilities (Fjeldstad et al., 2012).

3.1.2 Relational View Theory

Relational View Theory (RVT), initially developed by Dyer and Singh, (1998), was driven by the need to address the limitations of the industry structure view and the RBV theory to explain the extent to which individual firm competitiveness can vary firm performance. The industry structure view argues that a firm's performance is based on its membership in a given industry with favourable structural characteristics like the barrier of entry for competitors or relative bargaining power (Porter, 1980). On the other hand, the RBV is based on firm heterogeneity and argues that firms can accumulate resources and capabilities that are valuable, rare, with no substitutes, and difficult to imitate to achieve competitive advantage (Barney, 1991).

The proponents of these theories mainly focus on internal control and ownership of resources, whether at the industry or firm level, as the source of competitiveness. Therefore, RVT offers an alternative lens through which to optimise a firm's capabilities and competencies by proposing that firms gain a higher performance advantage when they invest in inter-firm relational capabilities within their supply chain networks because it allows the firms to build synergies and optimise resources using unique combinations

unachievable to firms working in isolation (Brüning et al., 2015; Dyer and Singh, 1998; Wieland and Wallenburg, 2013).

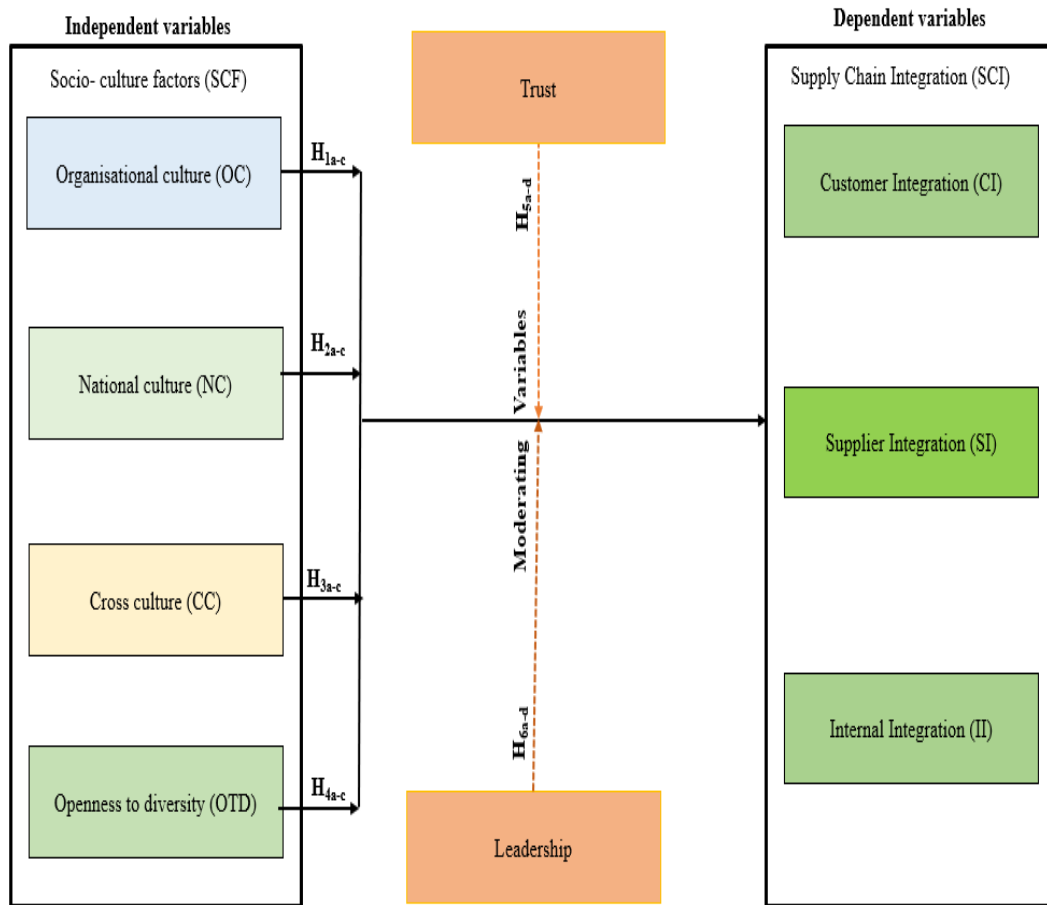
The theory argues that competitive advantage is achieved through the interconnections between firms from which they draw unique capabilities (Dyer & Singh, 1998; Kumar et al., 2017). These unique capabilities are developed as the network allows firms to (1) invest in relation-specific assets, (2) develop inter-firm knowledge-sharing routines, (3) use effective governance mechanisms, and (4) exploit complementary capabilities (Dyer & Singh, 1998). To give a detailed insight about the elements, first, the theory argues that firms gain higher performance against vulnerability to risks and disruptions when they invest in interfirm relational arrangements across entire supply chains. Second, interfirm relational arrangements allow idiosyncratic or distinctive firms to mitigate risks through collaborative advantages, synergies, and optimisation of resources using unique combinations that are unachievable to individual firms in arm's length relationships. Third, the theory embraces collaborative arrangements at the higher end of the relationship continuum and entails principles that capture effectiveness in deploying resources and developing competencies, processes, and governance structures to address potential risks. Fourth, the theory argues that investment in interfirm relation-specific assets, knowledge-sharing routines, complementary resource endowment, and effective governance mechanisms enable supply chains to mitigate interdependence risks (Dyer and Singh, 1998). According to Kumar et al. (2017), this network assists firms in

identifying the culture for teamwork by which planning and sharing activities can function effectively.

According to Thoo et al. (2017), RVT provides insight into how a firm develops value-creating linkages with other firms to achieve high-profit returns. Applied to CRM, the RVT suggests that collaborative relationships between a manufacturing firm and its suppliers and customers can generate mutual benefits through relation-specific assets, knowledge-sharing routines, complementary resource endowments, and effective governance. The relational capability of a supplier, manufacturer, and customer is a potential source of interfirm competitive advantage and should be seen as the winning strategy.

In summary, the researcher was guided by the study's objectives, the influence of socio-cultural factors on SCI in the Ghanaian grocery industry. It was moderated by trust and leadership in the direct relationship. Dynamic capability theory supported the four antecedents of socio-cultural factors as well as SCI. This is because the intermediation force can only be achieved with internal dynamics, which enable the organisation to react quickly to the changes by configuring the firm resources to achieve success. The relevance of DCT to this study is that it explicitly clarifies how capabilities can help a firm achieve operational performance and gain competitive advantage. On the other hand, the relational view theory reinforced trust and leadership in terms of its significant relational dimensions in the study (Carey et al., 2011; Villena et al., 2011).

Figure 3: Conceptual Framework



3.3 Hypotheses Development

3.3.1 The Role of Socio-Cultural Factors and Supply Chain Integration

The methods of supply chain integration are widely recognised to be based on a manager's economic evaluation of return on investment (Malmasi et al., 2022). Strategic decisions are not always based on economic factors, according to the Behavioural Theory of the Firm approach, an economics-based idea to examine the motivations of a corporation. Instead, strategic decisions depend on managers' and decision-makers levels of aspiration. The behavioral hypothesis is supported and expanded by research (Durach and Weingarten, 2022), including the addition of national culture as an external force. However, recent research in behavioral theory has demonstrated that choices are not always made independently and aim to maximise business profitability. Numerous studies have revealed that operations and supply chain managers' decision-making is significantly influenced by culture (Malmasi et al., 2022). These results lead (Weingarten and Durach, 2021) to the conclusion that the theory as it is now applied may not fully account for the managerial behaviour observed in relation to supply chain integration. Additional research reveals how many facets of culture affect the effectiveness and degree of integration of methods, particularly those related to industries like quality management or lean manufacturing. However, little is known about how culture affects supply chain management, notably supply chain integration. A collectivist culture may influence managerial decisions about location, partnership, and supply chain integration through behavioral effects. By being aware of these implications, managers and scholars can better understand how effectiveness relates to national culture (Weingarten and Durach, 2021). Both internal and external goal-setting forces

influence the pursuit of objectives by organisational decision-makers. Decision-makers compare organisational performance to internal and external targets to determine whether it is necessary to change current practices, which causes them to become fixated on aspirational levels (Shinkle, et al., 2021). In view of the literature reviewed above, the study proposes the following hypotheses:

3.3.2 Hypothesis 1: Organisational culture on supply chain integration.

Throughout the planning, execution, and completion of all transportation and logistical activities throughout the course of a project's lifecycle, the ability of all partners' communications and information technology systems to transmit a message effortlessly all has to do with supply chain integration (Chunsheng et al., 2020). Employees are guided by shared values when doing both internal and external tasks, such as establishing partnerships between buyers and suppliers (Purwanto and Juliana, 2022). Therefore, management and operational practices are built on organisational culture. Additionally, organisational culture and organisation development are closely related (López et al., 2004). Organisational culture may support SCI by creating an environment where businesses can learn from their supply chain partners. Prior research has demonstrated that organisational culture will majorly impact SCI as a crucial component of a firm's operational practice (Birasnav and Bienstock, 2019). Second, as the SCI research implies, integration skills and a willingness to integrate are both necessary for effective SCI. Strong integration capabilities enable businesses to establish and maintain connections with clients and suppliers as well as to coordinate cross-functional collaboration, making it simpler for businesses to integrate their supply chains (Zhao et al., 2011). Firms proactively integrate internally and internationally due to readiness for integration in terms of trust and relationship commitment,

enabling them to foster collaboration more successfully (Rajaguru and Matanda, 2019). Hence, it is anticipated that a positive influence of Organisational culture on supply chain integration.

H₁. Organisational culture has a positive and significant effect on supply chain integration.

3.3.3 Hypothesis 2: National culture on supply chain integration.

Supply chain integration aims to enhance communication and collaboration amongst all chain nodes. An integrated supply chain has to do with a collection of suppliers and clients that work together to maximise their total performance in the conception, manufacture, and post-sale support of a finished product (Gupta and Gupta, 2019). According to earlier research, there are two specific ways that national cultural development benefits SCI. First, long-term development will be one of the main goals for businesses that prioritise development culture. The company pays more attention to new information and technology that can improve its dynamic capacities for adjusting to new possibilities in order to meet that goal (Perevozova et al., 2020). In this scenario, a company is driven to gather knowledge about the existing environment, anticipated demand, and technologies or skills that might direct their R&D-related activities. A company must interact and integrate its internal operations with external suppliers and customers through SCI to obtain such market and technology knowledge (Akin Ateş et al., 2022). As a result, businesses with a strong development culture are more inclined to use SCI to gather the knowledge, expertise, and resources required for upcoming advancements. Second, development culture may improve SCI by motivating businesses to take chances and face temporary setbacks (Yang et al., 2021). Numerous studies have shown that institutional collectivism, humane orientation, achievement orientation, and in-group collectivist societies' national culture dimensions affect

how much SCI enhances operational efficiency. Institutional collectivism, humane orientation, and future orientation particularly modify the association between internal integration and high-quality results (Chunsheng et al., 2020). While the relationship between customer integration and delivery performance is regulated by institutional collectivism, the relationship between internal integration and the cost is facilitated by in-group collectivism (Gorbunova and Petrova, 2019). Hence, it is anticipated that a positive influence of National culture on supply chain integration.

H₂. National culture has a positive and significant effect on supply chain integration.

3.3.4 Hypothesis 3: Cross-culture on supply chain integration.

Suppliers and customers who collaborate to improve overall performance in a finished product's design, production, and after-sale support make up an integrated supply chain (Liu et al., 2021). Traditional barriers exist when dealing with a global supplier base across cultures. Due to language problems, time zone conflicts, cultural misconceptions surrounding religious and secular holidays, and varying levels of service urgency, there may be misinterpretation (Nguyen et al., 2022). The good news is that a lot of these obstacles are easily removed via routine business operations in the global supply chain, where experts collaborate across cultures to maintain the flow of goods and services (Kong et al., 2021). But occasionally, the road can be difficult. Additional research reveals how different facets of culture affect practices' effectiveness and degree of integration, particularly those related to industries like quality management or lean manufacturing (Gorbunova and Petrova, 2019). Hence, it is anticipated that a positive influence of Cross-culture on supply chain integration.

H₃. Cross-culture has a positive and significant effect on supply chain integration.

3.3.5 Hypothesis 4: Openness to diversity on supply chain integration.

Since it ensures that all outputs, inputs, and materials are delivered on time and in accordance with specifications, supply chain integration is essential (Rahmanzadeh et al., 2020). This convergence saves so much time by removing delays in manufacturing, distribution, and logistics activities. Consumers worldwide are more equipped to analyze the faults and complexity of a company's supply chain (Hadj Abdou, 2019). Companies are stepping up to fulfill the expectations of customers for diversity, sustainability, and ethical procurement methods at a time when consumers want their purchases to represent their beliefs and utilize social media to express their views and shopping habits (Li, 2020). The success of any firm may be largely attributed to its ability to source goods and services ethically and effectively while sustaining profits, expanding clientele, boosting the economy, and fostering innovation. Companies and the many suppliers within their supply chains may increasingly profit from doing business with the help of forward-thinking supply chain integration and a focus on strategic sourcing (Ganbold et al., 2021). Hence, it is anticipated that a positive influence of Openness to diversity on supply chain integration.

H₄. Openness to diversity has a positive and significant effect on supply chain integration.

3.3.6 The Moderating Role of Trust

A high level of trust between partner organizations in a buyer-supplier relationship fosters the desire for open communication and the willingness to take risks (Zhang, et al., 2019). According to numerous research (Tsanos and Zografos, 2016), successful collaborative relationships depend on relational interaction modes characterised by high trust. Due to a high degree of trust, boundaries between inter-firm partners in supply chains are vanishing. The boundaries of the

organisations become hazy when a high level of confidence enhances the engagement of the stakeholders in the supply chain. For the supply chain to work together, mutual trust is crucial. Many lenses have been used to study trust, which has led to misconceptions about what it means and how to quantify it (Zhang and Huo, 2013). For instance, due in part to its fundamentally complex and multifaceted nature, academics have had difficulty converting an individual-level notion into an inter-organizational level construct (Chirico, 2022).

Furthermore, trust enables people to build relationships, work together, and occasionally come up with answers beyond simple self-interest. Trust influences how we establish relationships with our family and friends, why and how we establish business ties, and choosing which things to purchase from the market (Cook-Sather, 2020). As a result, "one can expect trust to be increasingly in demand as a method of enduring the complexity of the future which technology will bring" because trust can help reduce the uncertainty frequently felt in a complicated environment. Several research hypotheses show how cultural norms and beliefs affect trust-building techniques. Finally, trust formation is undoubtedly influenced by company culture and individual personality (Mohammad, 2020). The discussions above lead to the formulation of the following hypotheses:

3.3.7 Hypothesis 5: Trust moderates' organisational culture and supply chain integration.

The ability of all partners' communications and information technology systems to transmit a message with ease throughout the planning, execution, and completion of all transportation and logistical activities throughout the course of a project's lifecycle is entirely dependent upon supply chain integration (Alshurideh et al., 2022). When performing both internal and external tasks, like forming partnerships between buyers and suppliers, employees are guided by shared

values (Mubarik et al., 2019). Consequently, organizational culture serves as the foundation for management and operational practices. Additionally, Gorondutse and Hilman (2019) found a strong correlation between organisational culture and development. By fostering a climate where companies may learn from their supply chain partners, organisational culture may promote SCI. Previous studies have shown that organisational culture, a key element of a firm's operational practice, will have a significant influence on SCI (Lee et al., 2020). Moreover, as the SCI study suggests, effective SCI requires both integration abilities and a willingness to integrate. Good integration skills make it easier for companies to integrate their supply chains since they help them forge and sustain relationships with customers and suppliers and manage cross-functional cooperation (Jianxun et al., 2021). From the extent of the reviewed studies above, there is limited literature on the trust moderating the relationship between organizational culture and supply chain integration; hence the study seeks to explore this relationship.

H₅. Trust moderates the relationship between organisational culture and supply chain integration.

3.3.8 Hypothesis 6: Trust moderates national culture on supply chain integration.

Integration of the supply chain aims to improve coordination and cooperation amongst all chain nodes. A group of suppliers and customers that collaborate to maximise their overall performance in the design, production and post-sale support of a final product is known as an integrated supply chain (Liu et al., 2021). There are two distinct ways that national cultural development enhances SCI, according to past studies. First, organisations that place a high priority on development culture will have long-term development as one of their top priorities (Al-Ma'aitah et al., 2021). Therefore, organizations with a strong development culture are more likely to use SCI to gather the information, skills, and resources needed for future developments.

Second, a development culture may enhance SCI by encouraging companies to take risks and endure brief setbacks (Alshurideh et al., 2022). Numerous studies have demonstrated that the national cultural dimensions of institutional collectivism, humane orientation, achievement orientation, and in-group collectivist societies influence how much SCI improves operational efficiency (Doering et al., 2019). The relationship between internal integration and excellent outcomes is specifically modified by institutional collectivism, humane orientation, and future orientation (Liu et al., 2021). Since there is little research on the trust that moderates the relationship between national culture and supply chain integration based on the scope of the studies reviewed above, the study aims to investigate this relationship.

H₆. Trust moderates the relationship between national culture and supply chain integration.

3.3.9 Hypothesis 7: Trust moderates cross-culture and supply chain integration

An integrated supply chain is made up of vendors and clients who work together to enhance efficiency in the planning, manufacturing, and post-sale maintenance of a final product (Sarwar et al., 2022). Dealing with a worldwide supplier base across cultures presents conventional challenges. Misinterpretation may occur as a result of language barriers, time zone difficulties, cultural misunderstandings about religious and secular holidays, and varied levels of service urgency (Pang, 2020). The good news is that a number of these challenges can be quickly overcome through ordinary business processes in the global supply chain, where specialists work together across cultures to keep the flow of goods and services (Grott et al., 2019). The path, though, can occasionally be challenging. Further investigation demonstrates how many cultural aspects influence the efficacy and degree of integration of approaches, particularly those associated with sectors like quality management or lean manufacturing. Cross-cultural

collaboration does have a good impact on supply chain integration (SCI), but more study is still needed (Arooj et al., 2022). The study seeks to investigate this relationship because, based on the scope of the reviewed studies above, there is little research on the role of trust in moderating the relationship between cross-cultural and supply chain integration.

H₇. Trust moderates the relationship between cross-culture and supply chain integration.

3.3.10 Hypothesis 8: Trust moderates' openness to diversity and supply chain integration

Supply chain integration is vital because it guarantees that all products, inputs, and materials are delivered on schedule and in accordance with requirements (Wang and Feng, 2022). By eliminating delays in the manufacturing, distribution, and logistics processes, this convergence saves so much time. The complexity and flaws of a company's supply chain can be more easily examined by consumers globally (Faruquee et al., 2021). Companies are taking action to meet customer expectations for diversity, sustainability, and ethical procurement methods in a time when shoppers want their purchases to reflect their beliefs and use social media to share their opinions and purchasing patterns. Such a company's success can be largely attributed to its capacity to procure goods and services in a moral and efficient manner while also maintaining profits, growing clientele, bolstering the economy, and encouraging innovation (Solaimani and van der Veen, 2022). Forward-thinking supply chain integration and an emphasis on strategic sourcing may help businesses and the numerous suppliers within their supply chains earn more from working together (Wang and Feng, 2022). According to the review of studies mentioned above, there is not much information on how trust affects the relationship between openness to diversity and supply chain integration. This is why the study aims to investigate this relationship.

H₈. Trust moderates the relationship between openness to diversity and supply chain integration.

3.3.11 The Moderating Role of Leadership

To ensure the sustainability of the business, top management, acting as the company's leadership, is skilled at fostering relationships and persuading all members of the organisation and business partners to increase mutual competitiveness (Gosling et al., 2016). Top executives' ability to manage the supply chain in their organisation depends on management's capacity to instruct staff members in supply chain procedures and function as role models for staff members when they make decisions regarding the implementation of the supply chain. It also depends on top management's capacity to change the company's strategy per the requirements of supply chain implementation and to enable corporate partners to reach shared objectives (Mokthar et al., 2018). When making decisions that affect the company's supply chain, management aims to influence the available information, promote informal communication, provide members the chance to share ideas, and encourage informal communication. According to Birasnav et al. (2015), cultivating effective leadership will be essential to raising supply chain performance as a whole. The rationale is that leadership greatly contributes to creating solid, long-term partnerships with suppliers via trust and dedication to information sharing. Leadership in SCM refers to a leader's capacity to control the activities and behavior of the supply chain's participants through the imposition of rewards and penalties (Birasnav et al. (2015). Management strives to impact the available information, promote informal communication, provide members the option to exchange ideas, and encourage informal communication when making decisions that impact the company's supply chain. Affective leadership development will be crucial to improving supply chain performance overall, claim (Birasnav et al. 2015). The argument is that leadership significantly aids in building strong, long-term partnerships with

suppliers through trust and a commitment to information sharing. Leadership in SCM is the ability of a leader to regulate the actions and conduct of the supply chain's members through the imposition of rewards and penalties (Birasnav et al. 2015). In view of the literature, the following hypotheses will be tested:

3.3.12 Hypothesis 9: Leadership on Supply Chain Integration

Integration of the supply chain appears to be essential since it ensures that all goods, inputs, and materials are delivered on schedule and in accordance with specifications (Birasnav and Bienstock, 2019). This convergence saves so much time by removing manufacturing, shipping, and logistical delays. Supply chain leaders continuously assess market trends, make decisions based on these analyses, and encourage innovation to support business growth (Ul-Hameed et al., 2019). They do this by utilising the proper information systems and big data sources. Results from earlier research show that leadership has considerable beneficial effects on three aspects of supply chain integration (SCI), and that the influence of leadership on strategic integration is partially mediated by the green image (Porter, 2019). Additionally, perceived business and social power contribute to leadership positive influence on the green image and its function as a mediator in the relationship between leadership and strategic integration (Mokhtar et al., 2019). Hence, it is anticipated that a positive influence of Leadership on supply chain integration.

H₉. Leadership has a positive and significant effect on supply chain integration.

3.3.13 Hypothesis 10: Leadership moderates' organisational culture and supply chain integration

Supply chain integration has a direct impact on the ability of all partners' communications and information technology systems to transmit a message with ease during the planning, execution,

and completion of all transportation and logistical activities throughout the course of a project's lifecycle (Srisathan et al., 2020). When completing both internal and external tasks, like forming partnerships between buyers and suppliers, employees are guided by shared values. Therefore, organisational culture serves as a foundation for management and operational practices. Additionally, Shao (2019) found a strong correlation between organisational culture and development. By fostering a climate where companies may learn from their supply chain partners, organizational culture may promote SCI. Previous studies have shown that organizational culture, a key element of a firm's operational practice, will have a significant influence on SCI (Choiriah and Sudiby, 2020). Furthermore, as the SCI study suggests, effective SCI requires both integration abilities and a willingness to integrate. The assessment of research listed above revealed that there is little knowledge regarding how leadership influences the connection between organisational culture and supply chain integration. This is why the research wants to look at this connection.

H₁₀. Leadership moderates the relationship between organisational culture and supply chain integration.

3.3.14 Hypothesis 11: Leadership moderates national culture and supply chain integration.

Supply chain integration aims to improve coordination and cooperation amongst all chain nodes (Durach and Wiengarten, 2020). In order to maximise their combined performance in the design, production, and post-sale support of a final product, suppliers and customers construct an integrated supply chain. Previous studies have shown that national cultural development helps SCI in two distinct ways (Sutrisno and Dularif, 2020). First off, organisations that place a high priority on development culture will have one of their key objectives be long-term growth.

Therefore, organisations with a strong development culture are more likely to use SCI to gather the information, skills, and resources needed for future developments. Moreover, a development culture may enhance SCI by encouraging companies to take risks and endure brief setbacks (Li et al., 2021). Numerous studies have demonstrated that the national cultural dimensions of institutional collectivism, humane orientation, achievement orientation, and in-group collectivist societies influence how much SCI improves operational efficiency. Many research studies have shown that the national cultural dimensions of institutional collectivism, humane orientation, achievement orientation, and in-group collectivist societies influence how much SCI improves operational efficiency (Gupta and Gupta, 2019). The relationship between internal integration and excellent outcomes is specifically modified by institutional collectivism, humane orientation, and future orientation. While institutional collectivism controls the relationship between customer integration and delivery quality, in-group collectivism promotes the relationship between internal integration and cost (Yorio et al., 2019). There is a lack of evidence available on how leadership influences the connection between national culture and supply chain integration, per the evaluation of research listed above. In order to better understand this link, the study intends to do just that.

H₁₁. Leadership moderates the relationship between national culture and supply chain integration.

3.3.14 Hypothesis 12: Leadership moderates cross-culture and supply chain integration

An integrated supply chain is made up of vendors and clients who work together to enhance efficiency in the planning, manufacturing, and post-sale maintenance of a final product (Zhao et al., 2023). Dealing with a worldwide supplier base across cultures presents conventional

challenges. Misinterpretation may occur as a result of language barriers, time zone difficulties, cultural misunderstandings about religious and secular holidays, and varied levels of service urgency (Iqbal & Ahmad, 2021). The good news is that a number of these challenges can be quickly overcome through ordinary business processes in the global supply chain, where specialists work together across cultures to keep the flow of goods and services (Montaudon-Tomas et al., 2020). Further investigation demonstrates how many cultural aspects influence the efficacy and degree of integration of approaches, particularly those associated with sectors like quality management or lean manufacturing. Cross-cultural collaboration does have a good impact on supply chain integration (SCI), but more study is still needed (Muniz Jr et al., 2022). The assessment of the research described above revealed that there is little knowledge regarding how leadership influences the connection between cross-cultural and supply chain integration. This is why the research wants to look at this connection.

H₁₂. Leadership moderates the relationship between cross-culture and supply chain integration.

3.3.15 Hypothesis 13: Leadership moderates' openness to diversity and supply chain integration.

Supply chain integration is significant since it guarantees that all products, materials, and inputs are supplied on schedule and in compliance with requirements. This convergence significantly reduces time consumption by eliminating delays in the production, distribution, and logistics processes (Ashikali et al., 2021). The intricacy and flaws of a company's supply chain are easier for consumers to understand on a global scale. When consumers want their purchases to reflect their ideas and use social media to share their opinions and purchasing habits, businesses are stepping up to meet their demands for diversity, sustainability, and ethical procurement techniques (Solaimani and van der Veen, 2022). Any company's success can be largely attributed

to its capacity to source products and services in an ethical and efficient way while also maintaining profits, growing its clientele, fostering innovation, and boosting the economy. Through strategic sourcing and forward-thinking supply chain integration, businesses and the numerous suppliers that make up their supply chains may increasingly benefit from working together (Jermisittiparsert and Srihirun, 2019). The assessment of research listed above revealed that there is little knowledge regarding how leadership influences the connection between openness to diversity and supply chain integration. This is why the research wants to look at this connection.

H₁₃. Leadership moderates the relationship between openness to diversity and supply chain integration.

3.4 Chapter Summary

This chapter discussed relevant literature on the relationships. The chapter continues to describe the conceptual framework and develop the study's hypothesis with relevant theories. The chapter also focused on SCF and reviewed the existing studies and contributions on the relationships between SCF and SCI. The moderating constructs of SCI and Leadership and Trust were also reviewed. It has been identified that there is a lack of literature on the relationship between SCF and SCI in the grocery industry from developing countries. Therefore, the hypotheses proposed have been tested in this study on the relationships between the exogenous and endogenous constructs.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.0 Introduction

This section presents and justifies the research design and the methodology used in testing the hypothesis stated in the preceding chapter. The tools, methods, techniques, and strategies employed to help achieve the stated objectives of this study are presented in this chapter. It encapsulates the Research Design, Population, Sampling Techniques, Sample Size, Respondents of the study, Analytic Method, Research Instruments, and Validity. The chapter describes the methods and techniques implemented to obtain the right data from respondents for quality analysis.

4.1 Research Philosophy

Research paradigms, also referred to as research philosophies, are “conceptual and practical “tools” that are used to solve specific research problems” (Kaushik & Walsh, 2019:1). Generally, research philosophy deals with the concepts of ontology and epistemology (Kaushik & Walsh, 2019:1; Rivas, 2015) with each philosophy adopting a different perspective on ontology, epistemology, methodology, and rhetoric of research (Kaushik & Walsh, 2019:1). This section presents the ontological and epistemological foundations followed.

4.1.1 Ontology

According to Rivas (2015), ontology refers to what 'truth claims' a researcher makes about reality and in the case of knowledge creation, what constitutes true knowledge. Generally, there are two different and conflicting ideas of reality: objectivism and subjectivism. Objectivism is based on a single reality, to be studied, understood, and experienced independent of human experience

(Rivas, 2015). On the other hand, subjectivism is based on the belief that reality is socially constructed, within the human mind, and is 'relative' according to how individuals experience it at any given time and place such that no one true reality exists (Rivas, 2015). Often, researchers follow one of the two philosophies in conducting their research. However, a kind of “middle-of-the-road” approach has emerged in recent times, allowing researchers to fall on both objectivist and subjectivist philosophies in single research: pragmatism (Kaushik & Walsh, 2019). Objectivist philosophies influence this thesis.

4.1.2 Epistemology

Epistemology references how true knowledge should be acquired and how its transferability can be measured (Moon, Brewer, Januchowski-Hartley, Adams & Blackman, 2016). Epistemology is important because it influences how the questions will be framed to discover knowledge (Moon et al., 2016). The two broad classifications of epistemology are positivism and interpretivism. Positivism, perhaps the oldest approach of social research, is associated with quantitative methods and highly formal rhetoric which focuses on precision, generalisability, reliability, and replicability (Kaushik & Walsh, 2019). In other words, positivists believe that any claims of knowledge must result from a research inquiry characterised by logically related steps based on objectivity, standardisation, deductive reasoning, and control (Kaushik & Walsh, 2019). Positivists adhere to the views that only “factual” knowledge gained through observation (the senses), including measurement, is trustworthy (Creswell & Creswell, 2018). In positivism, the role of the researcher is limited to data collection, interpretation, and analysis objectively (Creswell & Creswell, 2018). On the other hand, interpretivists argue that understanding why or how somebody feels or behaves in a certain way cannot be achieved through the analysis of numbers.

Instead, it requires an in-depth assessment of words, actions, and behaviors (Creswell & Creswell, 2018). This study was guided by a positivist epistemological position to elicit responses from respondents.

4.1.3 The Chosen Philosophy

A positivist approach underlies this research. As indicated above, the positivist paradigm is rooted in the testing of hypotheses derived from an existing theory, and it is characterised by the combination of a deductive approach with precise measurement of quantitative data (Saunders et al., 2019). This resonated well with this study as the study sought to deploy the amalgamation of three theories – DCT and RV theory - to the role of socio-cultural factors as essential enablers in supply chain integration and how trust and leadership moderate the relationship.

The justification for this paradigm is that it relies on the hypothetico-deductive method to verify a priori hypotheses that are often stated quantitatively, where functional relationships can be derived between causal and explanatory factors (independent variables) and outcomes (dependent variables) (Ponterotto, 2005). In effect, adopting the positivism paradigm allowed the researcher to predict the relationship among variables, which is the goal of this study (Singh 2015). Adopting the positivist paradigm allowed for using quantitative statistical inference to estimate the role of socio-cultural factors as essential enablers in supply chain integration and how trust and leadership moderate the relationship (Saunders et al., 2019). This quantitative focus thus ensures sufficient sample size and power to detect meaningful effect sizes based on appropriate statistical tests.

4.2 Research Approach

Deductive and inductive research are two broad types of research approaches (Trochim, 2006). Trochim (2006) explains that inductive research makes its arguments based on observations and experiences and therefore concludes by moving from "specific to general". On the other hand, deductive research starts from established rules, laws, and principles about a particular phenomenon and concludes by moving from "general to specific." In addition, Creswell and Clark (2017) propose that deductive research has its orientation from the positivist paradigm and employs a top-down approach where the researcher tests theories through the use of hypothesis to either confirm or disconfirm a theory. In contrast, inductive research, which is oriented from the interpretivism paradigm, uses a bottom-up approach where the researcher utilizes participants' views to build broader themes and then generates a theory by connecting the identified themes (Cohen, Mannion & Morrison, 2017).

The study adopted a quantitative/deductive research approach as it was relevant in enabling the researcher to test theories, deductively searching for evidence to either support or refute the hypothesis (Creswell & Plano Clark, 2007). This study, through the testing of two theories - DCT and RV theory deductively to either support or refute the role of socio-cultural factors as essential enablers in supply chain integration and how trust and leadership moderate the relationship.

4.3 Research Design

The research design is the structure that indicates the time frame(s) in which data is collected, the type of study to be conducted, and how many groups are involved in the study (Edmonds & Kennedy, 2016). The research design, therefore, serves as the roadmap that guides the

researcher to achieve the research objectives and provide answers to the study's research questions.

Research design, according to Okesina (2020), has various components, including the research purpose (descriptive, explanatory, exploratory, or a combination of two or more purposes), research methods (quantitative, qualitative, and mixed methods), and time horizon (cross-sectional or longitudinal). Considering the positivist approach used, the research design for the current study was explanatory as opposed to descriptive and exploratory. This is because the explanatory research design is characterised by hypotheses that predict the nature and direction of the relationship among the variables of the study. In addition, borrowing from Okesina (2020), the study is cross-sectional as opposed to longitudinal design since data was collected in a short time spanning one month.

4.4 Research Method

Even though researchers use Research Methodology and Research Methods interchangeably (Saunders et al. 2007), they are distinct. Research methods involve the various techniques and approaches used to conduct the research (Kothari, 2004). Thus, the techniques or methods refer to the researcher's procedure to perform the research operations. Conversely, research methodology represents a systematic approach to help solve a research problem (Kothari, 2004). It presents the logic and the procedures implemented by the researcher in studying the main problem of the research. As a researcher, it is essential to recognize and understand your methodology and not only the methods/techniques. Thus, the underlying logic of the approaches and techniques adopted are included in the research methodology. It goes further to explain

why the researcher is using a particular method. Thus, research methods are seen as a subset of research methodology (Kothari, 2004:8)

Some widely used methodologies in research are surveys, grounded theory, action research, experiments, and case studies (Bhattacharjee, 2012; Robson, 2002). Other methods that may be used include questionnaires, case studies, interviews, structured and unstructured analysis of contents, phone interviews, and observations. Researchers can select any method depending on the research constraint and the study type. In this context, the survey method, with a structured questionnaire, was used. The survey method allowed the researcher to study a sample in the name of the target population (De-Vaus, 2001). With the help of structured questionnaires, the study collected and analyzed quantitative data to examine relationships between the variables to help draw inferences and conclusions. In research, the survey methodology is used.

“to respond to questions that have been put up, to help in the solving of observed or posed problems, to help in the assessment of needs and the setting of goals, to examine the achievement of set objectives, to assist in the establishment of benchmarks, to ensure the making of comparisons in the future, to study trends over time, and commonly, to define what exists, in what amount, and context.” (Isaac and Michael, 1997: 136).

Surveys represent a selection of the population of a particular type that is used in addressing the why, how, and what in relation to specific phenomena (Biggam, 2008). Responses from the selected population can generate valuable knowledge and sometimes discover new views of the phenomena to be studied. A survey is one of the common research strategies used and can be applied in several other professional fields of social research (Saunders *et al.*, 2008). The survey

research could describe the quantitative aspects of a particular population and use findings from a selected sample to ensure the generalisation of research findings to the larger population (Kraemer, 1991; Glasow, 2005). In survey research, the scope is defined by the dependent and independent variables, but the researcher cannot explicitly control them. A researcher must create a model to conduct a survey. The model will identify the anticipated relationships among the variables. The constructed survey will help test the model against all observations of the event (Glasow, 2005). In this study, structured questionnaires were utilised.

4.5 Research Strategy

Creswell (2013) refers to a research design as the various inquests within the mixed method, qualitative, and quantitative techniques that propose a distinctive direction for the processes in a research design. Indisputably, the success of research depends largely on the effective design of the processes for research. Research design is also viewed as the strategy of inquiry (Denzin & Lincoln, 2011). Quantitative, qualitative, and mixed methods are the three main research strategies available to researchers (Creswell, 2013). The strategies are not distinct from one another. Qualitative and Quantitative represent different ends on a scale (Newman & Benz, 1998). Combining qualitative and quantitative approaches, the mixed method strategy is positioned at the center of the scale. The selection of a strategy hinges mainly on the problem area of a study, the research question, and the aim of the research (Saunders et al., 2007, p.135).

The main difference between qualitative and quantitative strategy is based on the reasoning employed (deductive or inductive), the data used (numeric or textual; unstructured or structured), the kind of inquiry (confirmatory or exploratory), the analysis method (statistical or

interpretive), and the approach to explanation (process theory or variance theory). Others also use the fundamental paradigm (interpretive/critical or positivist; naturalistic or rationalistic) to distinguish between quantitative and qualitative approaches. This study adopts the quantitative method. This choice was informed by the research design, and ontological and epistemological foundations chosen above. The approach helps to test objective theories and relationships.

4.6 Research Population

A research population is the whole entirety of all entities considered for the study (Polit and Hungler, 2007). Every research population is an integral part of the research blueprint. The appropriateness of a research population greatly affects the quality of the research. Thus, the findings of a study will be greatly discolored if unqualified, wrong, and inappropriate respondents are targeted. Before collecting data, it is always important to clarify the population and the target population. Every researcher has an interest in some specific subjects for their study. Therefore, all the members or elements in a specific area where the researcher is interested are considered the population (Snape & Spencer, 2007). Literature has shown that studies conducted within the area of supplier-buyer relationships utilise single-case organisations rather than industry (Olsen, 2012; Azeem & Ahmed, 2015). In view of this, the target population for the study was top-level officers or managers of food manufacturing firms in Ghana and their outlets. However, the target population is those managers in the stores, procurement, transport, warehousing, and material handling departments of the focal organisations. The population is suitable for the study because it helped the researcher to obtain first-hand information regarding socio-cultural issues in the grocery value chain.

4.7 Sampling Technique and Sample Size

The procedures used in data collection and the sample size are presented under this segment.

Sampling is the process of selecting a subset from a statistical population to describe the nature of an entire population. Sampling is viewed as a “process of selecting a given number of subjects from a defined population as representative of that population such that any statements made about the sample should also be true of the population” (Orodho, 2009:5). Theoretically an appropriate sampling method will prevent bias and improve the reliability of the findings.

4.7.1 Sampling Technique

Sampling is mainly about choosing individuals as a subset of a defined population to evaluate the characteristics of the entire population (Collis & Hussey, 2009). It can also be used to designate the process of selecting a section from the entire population (Bryman, 2012). It is very suitable in situations where there is no possibility for the researcher to reach the whole sample or population due to challenges such as time constraints and cost (Saunders et al., 2007).

Basically, there are two (2) main techniques used in sampling. They are probability (random) and non-probability sampling. With probability or random sampling, every participant in the population has an equal chance of selection. However, in the instance of non-probability sampling, not all the subjects in the population have the chance of being selected (Bhattacharjee, 2012; Kothari, 2004). “Simple random sampling, stratified sampling, systematic sampling, and cluster/area sampling are examples of probability (random) sampling while judgment sampling, quota sampling, and convenience sampling techniques fall under non-probability sampling” (Kothari, 2004:15).

Purposive sampling methods were employed in this research. Under purposive sampling, a researcher uses his own decree to select a group or cases that will best enable them to answer the research questions as well as achieve his/her objective. This explains why it is sometimes referred to as judgemental sampling (Saunders et al, 2016:301). This technique is usually employed when a researcher must select a particular informative group or cases (Neuman 2005). The technique is also very useful when dealing with a homogenous sample such as a particular occupation (Saunders et al., 2016). In such a situation, the characteristics of the cases are similar, allowing for in-depth exploration with minor differences. In this context, the focal organizations were conveniently selected based on availability and readiness to participate in the study.

4.7.2 Sample Size

Different researchers have expressed different views. Some authors argue that a smaller sample size is well-suited for larger populations. At the same time, others also believe that it should be representative (Krejcie and Morgan, 1970), relatively homogeneous, or heterogeneity of the population. In the view of Gorsuch (1983) and Kline (1979), the sample size should be at least 100. Others also advise that researchers get the maximum sample size possible (Rummell, 1970; Humphreys, Ilgen, McGrath, and Montanelli, 1969; Guertin and Bailey, 1970; Press, 1972). Thus, if the sample size is unsuitable or insufficient, it may discolour the outcome or findings of the research (Bartlett, Kotrlik, Higgins, 2001). To achieve an appreciable statistical test power and avoid the tendency of using few sample cases, which will affect the results (Habib, Magruder-Habib, Kupper, 1987), the study targeted the entire health professionals trained under the Tele-Consultation Centre in the selected regions. For the purpose of generalisation, appropriate

sample size and sampling method must be employed (Fox, Hunn and Mathers, 2009). This study used a sample of five hundred and eleven (511). Again, the adequacy of the sample size is justified because the use of PLS-SEM requires that the sample size be not less than ten (10) times the number of paths that connect with the endogenous variable (Barclay et al., 1995; Chin, 1998). Also, in the opinion of Singh (2006:94), a sample size of 30 is considered large enough for any statistical analysis. Thus, a sample size of five hundred and eleven (511) is desirable.

4.8 Data Collection

In this research, a cross-sectional survey design was utilised. A structured questionnaire with a mainly close-ended format was self-administered to the respondents as in Appendix A. To achieve this purpose, the researcher explained in detail the aim and importance of the study to the respondents before they decided to participate. Also, part of the questionnaire preamble reiterated the promise of confidentiality of the data. The researcher distributed six hundred and nineteen (619) questionnaires and retrieved five hundred and forty-five (545). This represents a response rate of 88%. However, five hundred and eleven (511), was used for the analysis. This represents a response rate of 82.55%. Also, in the opinion of Singh (2006:94), a sample size of 30 is considered large enough for any statistical analysis. Thus, a sample size of five hundred and eleven (511) is desirable.

4.9 Research Instruments

This study used a structured questionnaire to gather the primary data. Below is a discussion of the research instruments.

4.9.1 Questionnaire

A questionnaire was the main instrument used to collect primary data. A well-structured questionnaire containing measurement items validated in previous studies was employed in the study. Each of the variables was measured based on a five (5) point Likert which ranged from 1 (strongly disagree) to 5 (strongly agree). The questionnaire was structured to reflect the relevant objectives of the research. The questionnaire helped to solicit responses to test all the key variables in the study's conceptual framework. The researcher ensured that respondents opted-in before the questionnaire was administered.

4.9.1.2 Questionnaire Development

A questionnaire or survey form is used as an instrument in research. Researchers claim that a questionnaire is the best method for collecting large data in quantitative studies (Rubin & Babbie, 2010). Therefore, this study also used a questionnaire to obtain all the needed information. This study employed closed-ended questions in the survey; the respondents were given answers from a five-point (5) Likert scale measurement. This gave the respondents a very suitable and relaxed condition to provide the needed information. The five-Likert scale is more suitable because the position of the point scale between the positive, negative, and neutral options are well balanced, thus eliminating confusion when the respondent answers the questions (Sarstedt & Mooi, 2019). The questionnaire comprised four (4) sections covering seven variables. All seven variables (constructs) were adopted and adapted in the study. These include (i) National Culture, (ii) Cross Culture, (iii) Organisational Culture, (iv) Openness to Diversity, (v) Supply Chain Integration, (vi) Trust, and (ix) Leadership. The measurement items and the sources have been provided in table 4.1 below.

Table 4. 1: Measurement Items

Construct (Acronym)	Number of Items	Source(s)
National Culture	18	Van Everdingen, Y.M. and Waarts, 2003; Brock, 2005; Wong et al., 2017; Liu et al., 2021
Cross Culture	4	Pang, 2020; Wang et al., 2014; Hubbard, 2013)
Organisational Culture	11	Riad, 2005; Braunscheidel et al., 2010; Cao et al., 2015; Altay et al., 2018
Openness to Diversity	4	Bogers et al., 2018; Pascarella et al., 1996; Pike, 2002; Hobman et al., 2004; Yakunina et al., 2012
Supply Chain Integration	16	Lofti et al. (2013), Flynn et al. (2010) Lu et al. (2018), Ebrahimi et al. (2015).
Trust	8	Zhang, M., and Huo, 2013; Capaldo, A. and Giannoccaro, 2015; Panayides, P.M. and Lun, 2009; Alshurideh et al., 2022
Leadership	6	Hanna et al.,2010; Chu et al., 2017; Shee et al., 2018; Hoejmose et al., 2012;

One of the important steps in developing a questionnaire is to pre-test. It confirms that the questionnaire has been designed effectively for the study before actual data is collected. In research, a pre-test is done to validate the content, the question wording, the format, and how relevant the questions are to the objectives. Although the proposed items to be used in this research were adopted from previous research, yet the pre-test is very important to confirm that the questions are suited to the respondents (Kumar et al., 2013).

The pre-test in this research was done through discussions with supply chain professionals and academicians. The pre-test process focused on reviewing the questionnaire with its content validity, clarity, and timing for the respondents to answer the questionnaire. The practitioner and

the project supervisors also reviewed the questionnaire. Their feedback was used to improve the questionnaire.

4.10 Data Analysis Techniques

According to Churchill & Iacobucci (2009), data analysis is the process of using a systematic procedure to draw inferences from data gathered from the field as well as considering the various procedures that can be used to analyse the data. They further suggest that the research design, kind of data and assumptions made in the research and concerns associated with the study will influence the suitability of a particular technique. Data analysis may follow the quantitative or qualitative procedure in scrutinizing the large volume of information obtained from the field. In the quantitative context, the procedure includes the use of statistical techniques to describe and examine variation in the quantitative measures. The statistical techniques include median, mode, mean, graphs, frequencies, regression, and correlation. In addition, the quantitative approach emphasises the use of either inferential or descriptive statistics (statistical techniques), to understand and establish relationships between constructs.

In this study, Statistical Package for Social Sciences (SPSS) version 23 and SmartPLS 3 software were used to conduct descriptive and inferential statistics, respectively. The data collected was coded, cleaned, and prepared for analysis. The data was first coded in Microsoft Excel. In Excel, the data was thoroughly checked to avoid possible data entry errors. After cleaning, the data was then exported to SPSS. The data checks in SPSS include missing values, reliability, descriptive statistics, and test of assumptions for multivariate analysis. Subsequently, the data was moved

into SmartPLS version 3 (Ringle, Wender & Becker, 2015) to conduct inferential statistics through multivariate data analysis.

4.10.1 Partial Least Square-Structural Equation Modelling (PLS-SEM)

In this study, Partial Least Square-Structured Equation Modelling (PLS-SEM) was employed to analyse the data that was collected. Alavifar et al. (2012) defined Structured Equation Modelling (SEM) as the statistical technique used to test and analyse the causal relationship using statistical data. SEM has been well thought-out as a better statistical method for predicting the relationship between variables as compared to multiple regression. SEM can evaluate the relationship of model constructs simultaneously, whereby in the first-generation method, the analyses of the variables are done separately (Alavifar et al., 2012). Hence PLS-SEM was used in this research. In PLS-SEM, two (2) different processes are used to assess a model: the structural model and the measurement model (Hair et al., 2011). The two assessment types are recommended to enable the validation of the model in this research. The measurement model shows how the constructs used are measured, and the structural model tells how the hidden constructs are connected or linked to one another.

4.10.2 Justification for using PLS-SEM

Covariance-Based SEM (CB-SEM) and Partial Least Square-Structural Equation Modelling (PLS-SEM) are the two (2) major types of SEM. If the research objective is to confirm or test the existing theory, the right method becomes CB-SEM. On the other hand, if the objective of the research is to develop a theory or predict a theory, then PLS-SEM becomes the right method. This is the philosophical difference between the two (2) SEM paradigms. However, Rigdon, Sarstedt, and Ringle (2017) believe that outright rejection of one approach is myopic. In the opinion of Hair,

Ringle, and Sarstedt (2011:3), both approaches will basically produce similar results if “good” measures and data are used. They further argue that since previous studies that compared the two approaches did not clearly control for the biases in CB-SEM specification, we should desist from making a case for one method being better than the other. According to Henseler et al. (2009), there are many advantages associated with using PLS-SEM, including the capability to analyze complex models with many variables concurrently. This study investigates a complex model where constructs such as socio-cultural factors, supply chain integration, trust, and leadership have many dimensions, making PLS-SEM suitable for this research. Again, the PLS-SEM technique can also analyse data with medium or small sample sizes (Henseler, Ringle, & Sinkovics, 2009).

4.11 Reliability and Validity

Evaluating the measurement model is very important in quantitative research. It confirms the validation and the result of the research. Thus, researchers need to concentrate on improving the quality of their work (Heale and Twycross, 2015). There are two vital features to deal with in assessing the measurement model. They include the reliability and validity of the study instrument to be used (Saunders, Lewis, & Thornhill, 2016).

4.11.1 Reliability

Khalid et al. (2012) defined reliability measurement as the degree to which the measurement is free from random error by giving a consistent result. Concurrently, it is known as the internal consistency of measurement, which mirrors the same underlying construct (Cooper and Schindler, 2003). To test for how reliable an instrument is, Hair et al. (2012), came up with two tests of reliability: internal consistency and indicator of reliability. For internal consistency

reliability, the researcher has proposed to use Cronbach Alpha. According to Hair, Sarstedt, Ringle, & Mena (2012), the indicator reliability is used to measure the indicator's variance to explain the latent construct where every indicator's absolute standardized loading should be more than 0.7 (Hair, Ringle, & Sarstedt, 2011). The researchers claim that the indicator loading between 0.4 and 0.7 should be removed from the scale if deleting the indicator will increase the composite reliability above the accepted threshold value. However, if the indicator loading is equal to or less than 0.4, it should be removed from the reflective scale at all times. Table 4.2 presents the reliability tests conducted.

Table 4. 2: Reliability Test

Assessment	Attribute	Evaluation Criteria	Description	Reference
Reliability	Internal consistency	Composite reliability	To find out whether the indicators of the constructs are closely related. Here the value should be more than 0.7	Hair et al. (2011)
	Reliability indicator	Indicator loading	To measure the indicator variance underlying similar constructs. The value should be more than 0.7	Hair et al. (2011)

4.11.2 Validity

Zikmund (2000) defined validity as the accuracy of a measurement device and denotes the ability of a scale to measure what is proposed to measure. For quantitative research, the researcher has to certify that the three traditional forms of validity exist in the measurement device and they include face validity, content validity and construct validity (Heale & Twycross, 2015).

4.11.2.1 Content Validity

Content Validity tests whether the items would measure all the content which is made to measure in the study (Creswell, 2009; Heale & Twycross, 2015). The content validity is mostly done through reviewing related literature. In this research, the instruments used were validated in past studies. Yet to make sure that it captures all the content of the research, the researcher did a face validity by involving experts to evaluate the questionnaire to ensure that the instruments are suitable in terms of their relevance, appearance, and properly representing the elements (Richard, Netemeyer, William O. Bearden, 2003).

4.11.2.2 Construct Validity

According to Zikmund (2000), it is the state at which a measure ensures a network of interrelated hypotheses generated from a theory based on concepts. Moreover, it tests whether items measure hypothetical constructs or concepts (Creswell, 2009). To show that the research model has construct validity, the researcher should show that the construct being measured has discriminant and convergent validity (Khalid, Hilman, & Kumar, 2012). Convergent validity is the measure of constructs that must theoretically be related to each other. Straub, Boudreau, & Gefen (2004) claim that convergent validity exists when two and above items are correlated and measure the same construct. Discriminant validity is known as the extent to which the measurement of one construct is dissimilar from another construct measurement. Therefore, a device will be seen to have discriminant validity if the correlation value among the indicators from different construct is quite low (Cooper and Schindler, 2003).

4.12 Chapter Summary

This chapter justifies the need for a positive paradigm and its associated quantitative methods in addressing the research objectives and questions developed in Chapter one. It also provided detailed justification on population and determination of sample size as well as the administration of the instruments. The five-point Likert-scale type instrument was adapted and adopted from previous research to measure the entire latent variables in the study. The method of data collection for self-administered questionnaires was explained. Furthermore, the chapter also highlighted the data analysis procedure by justifying the selection of data analysis using SEM-PLS.

CHAPTER FIVE

DATA ANALYSIS AND DISCUSSION

5.0 Introduction

Chapter Five analyses data gathered through the procedures and methods discussed in the previous chapter. The Chapter is organised into four (4) key sections. The first section of the chapter presents the result of the survey bias test and descriptive analysis of the demographic characteristics at the individual level, while those on the main constructs are analysed on an aggregate level. This is because the theoretical and conceptual model was hypothesised at the organizational level. Section two also contained descriptive analysis and correlation among the study variable. The third section presents Confirmatory Factor Analysis, which evaluates model validity and reliability. Model fit indices are also presented in the chapter. The next section presented the structural model evaluation, which tests the various hypotheses proposed in the study. Finally, the last section discusses the key findings that were gathered from the results.

5.1. Response Rate and None Response Bias

Data were gathered from April to September, which is approximately five months. Overall, 619 questionnaires were administered to managers, supply chain professionals, procurement professionals, and operations managers using the approach described in the previous chapter. Of the 619 questionnaires administered, 545 were retrieved from respondents, but 511 were valid questionnaires, representing 82.55%. According to Kamel & Lloyd (2015), a more than 50% response rate in business management research is considered good for analysis. Therefore, the 82.55% response rate reported for this study served as an acceptable basis for drawing conclusions.

Considering the long duration of the data collection, it is imperative to evaluate the presence of survey bias in the dataset. In this regard, several precautionary procedures were taken in this study to avoid common methods and response bias (Podsakoff, MacKenzie & Podsakoff, 2012). First, as part of strategies to minimize bias in the dataset, questionnaires were translated into the local language for a few respondents who had issues understanding the concepts used in the study. A prior study by Brislin (1970) opined that translating into one's native language is beneficial for gathering reliable information about phenomena in a foreign environment. Secondly, respondents were informed that the information they submitted would be kept totally personal and private, as contained in the information sheet. This assurance kept them from succumbing to social desirability bias or giving appealing responses (Podsakoff et al. 2012). Thirdly, the researcher also provided definitions of the key constructs used in the study to guide respondents, where the researcher was not available to explain.

Apart from these strategies that were used, several statistical tests were conducted to validate the absence of bias in the data. Firstly, the data was subjected to Harman's one-factor test, as suggested by the study of (Scott & Bruce, 1994). Twelve components with an eigenvalue greater than one accounted for 72% of the variance, and no single factor exceeded 50% of the total variance. Again, the Partialling Out of General Factor in the PLS Model procedure, as recommended by Tehseen et al (2017) was also employed. The result showed just a slight difference of 0.05 between the original R^2 and the R^2 after the general factor. Finally, the inter-correlation between the variables was investigated. The correlation result shows that the highest correlation among the two constructs was below the ($r=0.90$) threshold as indicated by earlier studies (Pavlou & Xue, 2007; Spector & Brannick, 2010; Uddin et al., 2018).

When the number of people who take the survey is less than the total number of people in the population, this is called non-response bias. Low survey response rates are a common cause of non-response bias, which can affect the quality of the sample used to draw conclusions and the study's overall validity. Non-response bias was evaluated by contrasting the early and late respondents' responses to reduce it in this study. Those that returned their questionnaires early did so inside the original one-month response frame, while those who returned theirs later are known as "late respondents." The result did not show any statistically significant differences between the two groups for any of the variables used in this study, as suggested by Oppenheim (2001). The result confirms that this study's non-response bias is not a problem, and samples represent the targeted group. Specifically, the first 255 and the last 256 responses were considered early and late, respectively. Afterward, a T-test analysis was employed to test for non-response bias. The results of the t-test analysis did not indicate any significant difference (see Table 5.1). Hence the study confirms that data gathered on the constructs in the first month is not different from the responses in the last month of the data collection.

Table 5.1: Test for None Response Bias (Independent T-Test)

Constructs	Groups	F	Sig.	T statistics
National Culture	Early Response	0.780	0.378	1.684
	Late Response			
Supply Chain Integration	Early Response	0.116	0.734	1.495
	Late Response			
Leadership	Early Response	1.496	0.020	1.871
	Late Response			
Trust	Early Response	1.221	0.074	-0.171
	Late Response			
Organisational Culture	Early Response	1.867	0.173	1.453
	Late Response			

Source: Field Data 2022

5.2 Demographic Characteristics of the Respondents

The study captured some demographic information of respondents who participated in the study. These include the company's ownership structure, the respondent's position in the firm, the firm's age range, the respondent's highest educational background, the number of employees in the firm, and the number of regions the firm served. This is because the study recognised the relevance of demographic factors, as most of these influence the variables under the analysis. A summary of the demographic characteristics is presented in Table 5.2 below. Though the sample size for the study was expected to be 530, the preliminary results presented in the chapter reflect a sample of 511 respondents.

Table 5.2

Variables	Category	Frequency	Percent
<i>Ownership Structure</i>	Foreign-owned company	12	2.3
	Local firm	430	84.1
	Foreign-local firm (joint-venture)	18	3.5
	Other	51	10.0
		511	100
<i>Position</i>	Senior manager	270	52.8
	Middle manager	156	30.5
	Junior manager	65	12.7
	Other	20	3.9
		511	100
<i>Years</i>	1 – 5 years	34	6.7
	6 – 10 years	50	9.8
	11 – 15 years	122	23.9
	16 – 20 years	144	28.2
	21 – 30 years	61	11.9
	Above 30 years	100	19.6
		511	100
<i>Education</i>	Diploma	13	2.5
	Bachelor’s degree	36	7.0
	Master’s degree	272	53.2
	Doctorate degree	190	37.2
		511	100
<i>Number of Employees</i>	Less than 50	0	0.0
	51 – 100	22	4.3
	101 – 150	148	28.9
	151 – 200	147	28.8
	Above 200	194	38.0
			511
<i>Number of Regions Served</i>	1 – 2	44	8.6
	3 – 4	29	5.7
	5 – 6	159	31.1
	7 – 8	199	38.9
	9 – 10	80	15.7
	Total	511	100

Source: Field Data 2022

As presented in Table 5.2 above, the results show that 2.3% of the respondents indicated their firms were foreign-owned companies, 84.1% of the respondents indicated their firms were local

firms, (and 3.5%) were joint ventures. In comparison, moderate (10.0%) showed others. The results indicate that most of the firms included in the study were locally owned firms. The position of respondents in the firm was also captured in the study. The result, as presented in Table 5.2, reveals that (52.8%) of those who were included in the study were Senior managers, (30.5%) of the respondents were Middle managers, (12.7%) were Junior managers, and the remaining (3.9%) indicated they fell within another category. The results indicate that most of the staff included in the study were senior managers.

The age range of the firms was also captured in the study. The result, as presented in Table 5.2, revealed that (6.7%) of firms included in the study have existed between 1–5 years, (9.8%) of the firms have existed between 6 – 10 years, (23.9%) indicated 11 – 15 years (28.2%) indicated 16 – 20 years, (11.9%) indicated 21 – 30 years. The remaining (19.6%) indicated they had existed for over 30 years. The results indicate that most of the firms included in the study have existed for at least 16 years.

The educational level of respondents was also captured in the study. The result, as presented in Table 5.2, reveals that (2.5%) of the respondents had a Diploma, (7.0%) of the respondents were bachelor's degree holders, (53.2%) were master's degree holders, and the remaining (37.2%) indicated Doctorate. The results reveal that the respondents have sufficient education and could understand the subject under investigation. This suggested that most of the respondents from the various firms had a higher educational background with a minimum of a Diploma and possessed the requisite skills required in this study.

The number of employees in the firm was also captured in the study. The results, as presented in Table 5.2, reveal that none of the sampled firms had employees less than 50 years, (4.3%) of the

firms included in the study had employees between 51 – 100 employees, (28.9%) indicated 101 – 150 employees, (28.8%) indicated 151 – 200 employees and the remaining (38.0%) indicated their employees are above 200. The results indicated that the majority of the sampled firms had employees more than 200.

The number of regions the firms serve was also captured in the study. The result, as presented in Table 5.2 revealed that (8.6%) of firms included in the study serve between 1 – 2 regions, namely the Greater-Accra and Eastern, because of proximity to their distribution outlets. (5.7%) of the firms served between 3 – 4 regions due to the cost of doing business and nearness to the market, which was Greater-Accra, Eastern, Volta, and Central. (31.1%) indicated 5 – 6 regions which comprised Greater-Accra, Eastern, Volta, Central, Western and Ashanti. (38.9%) indicated 7 – 8 regions, which were the firms with higher financial, human, and material capacities and. These regions are, Greater-Accra, Eastern, Volta, Central, Western, Brong-Ahafo, Northern, and Ashanti. The remaining (15.7%) indicated they serve between 9-10 regions in the country: Greater-Accra, Eastern, Volta, Central, Western, Brong-Ahafo, Northern, Upper East, Upper West and Ashanti. The results indicate that majority of the firms included in the study serve at least 7 regions which were the firms with more than 200 workforces and with higher turnover and huge logistical and financial capacities.

Table 5.3 DESCRIPTIVE STATISTICS OF THE RESEARCH MODEL

Constructs/Variables	MEASUREMENT ITEMS (Question Text)	Likert scale					Mean	Standard deviation	Skewness	Kurtosis
		1	2	3	4	5				
INDEPENDENT VARIABLES										
Organisational Culture (OC)										
Development culture (DC)										
DC1	We pursue long-range programs for manufacturing capabilities in advance of needs.	10 1.95%	12 2.35%	92 18.00%	261 51.08%	136 26.61%	3.98	.847	-.974	1.632
DC2	We try to anticipate the potential of new manufacturing practices and technologies.	2 0.39%	7 1.40%	90 17.61%	251 49.11%	161 31.51%	4.10	.757	-.577	.363
DC3	Our plant stays at the leading edge of new technology in our industry.	0 0.00%	12 2.35%	87 17.03%	219 42.86%	193 37.77%	4.16	.786	-.583	-.335
DC4	We are constantly thinking of the next generation of manufacturing technologies	2 0.39%	7 1.40%	74 14.48%	236 46.18%	192 37.57%	4.19	.758	-.742	.588
Rational culture (RC)										
RC1	Our incentive system encourages us to pursue plant objectives vigorously	2 0.39%	8 1.57%	92 18.00%	216 42.27%	193 37.77%	4.15	.796	-.659	.116
RC2	Our incentive system is fair in rewarding people who accomplish plant objectives	2 0.39%	7 1.40%	87 17.03%	240 46.97%	175 34.25%	4.13	.766	-.625	.331
RC3	Our incentive system recognizes the people who contribute the most to our plant	1 0.20%	16 3.13%	109 21.33%	219 42.86%	166 32.49%	4.04	.825	-.501	-.307
RC4	The incentive system at this plant encourages us to reach plant goals	3 0.59%	9 1.76%	80 15.66%	245 47.95%	174 34.05%	4.13	.777	-.760	.808
Hierarchical culture (HC)										
Independent Variables		1	2	3	4	5				
HC1	Even small matters have to be referred to someone higher up for a final answer	3 0.59%	8 1.57%	109 21.33%	217 42.47%	174 34.05%	4.08	.815	-.581	.090
HC2	Any decision I make has to have my boss's approval	2 0.39%	2 0.39%	97 18.98%	242 47.36%	168 32.88%	4.12	.746	-.481	.079
HC3	There can be little action taken here until a supervisor approves a decision	0 0.00%	8 1.57%	101 19.77%	229 44.81%	173 33.86%	4.11	.767	-.398	-.606
National Culture (NC)										
Group culture (GC)										

Constructs	Measurement Items	Likert scale					Mean	Standard deviation	Skewness	Kurtosis
		1	2	3	4	5				
GC1	Our supervisors encourage the people who work for them to work as a team	4 0.78%	34 6.65%	91 17.81%	251 49.12%	131 25.64%	3.92	.875	-.728	.353
GC2	Our supervisors encourage employees to exchange opinions and ideas	5 0.98%	17 3.33%	120 23.48%	231 45.21%	138 27.00%	3.97	.850	-.648	.418
GC3	Our supervisors frequently hold group meetings for discussion among	2 0.39%	25 4.89%	97 18.92%	259 50.68%	128 25.04%	3.95	.819	-.620	.288
Uncertainty avoidance (UC)	Uncertainty avoidance (UC)									
UC1	Rules and regulations are important because they inform workers what the organization expects of them	1 0.20%	19 3.72%	119 23.29%	231 45.21%	141 27.59%	3.96	.822	-.421	-.299
UC2	Order and structure are critical in a work environment	3 0.59%	28 5.48%	89 17.42%	249 48.73%	142 27.59%	3.98	.851	-.721	.378
UC3	It is better to have a bad situation that you know about than to have an uncertain situation which might be better	0 0.00%	23 4.50%	100 19.57%	228 44.62%	160 31.31%	4.03	.830	-.526	-.333
UC4	People should avoid making changes because things could get worse	4 0.78%	26 5.09%	110 21.53%	214 41.88%	157 30.72%	3.97	.893	-.632	.025
Long/short term (LT)	Long/short term (LT)									
LT1	Respect for tradition is essential for me	4 0.78%	14 2.74%	105 20.55%	197 38.55%	191 37.38%	4.09	.868	-.718	.173
LT2	I work hard for success in the future	4 0.78%	9 1.76%	80 15.66%	240 46.97%	178 34.83%	4.13	.793	-.833	1.011
LT3	Traditional values are essential for me	3 0.59%	9 1.76%	92 18.00%	220 43.05%	187 36.59%	4.13	.808	-.717	.393
LT4	I plan for the long term	5 0.98%	11 2.15%	91 17.81%	232 45.40%	172 33.66%	4.09	.826	-.810	.849
Masculinity/femininity (MF)	Masculinity/femininity (MF)									
MF1	In our organization, there is no gender preference for people promoted to a managerial position	14 2.74%	6 1.17%	116 22.70%	233 45.60%	142 27.79%	3.95	.893	-.922	1.379
MF2	Solving organizational problems requires the active forcible approach, which is typical of men	4 0.79%	10 1.96%	124 24.27%	239 46.77%	134 26.22%	3.96	.808	-.503	.309
MF3	It is more important for men to have a professional career than it is for women to have one	6 1.17%	26 5.09%	126 24.66%	231 45.21%	122 23.87%	3.86	.880	-.579	.231
MF3	It is more important for men to have a professional career than it is for women to have one	6 1.17%	26 5.09%	126 24.66%	231 45.21%	122 23.87%	3.86	.880	-.579	.231
MF4	Women do not value recognition and promotion in their work as much as men do	6 1.17%	17 3.33%	121 23.68%	232 45.40%	135 26.42%	3.93	.858	-.624	.436

Constructs	Measurement Items	Likert Scale					Mean	Standard deviation	Skewness	Kurtosis
		1	2	3	4	5				
Power Distance (PD)										
PD1	Managers should make most decisions without consulting subordinates	6 1.17%	10 1.96%	110 21.53%	246 48.14%	139 27.20%	3.98	.820	-.696	.848
PD2	Managers should not ask subordinates for advice because they might appear less powerful	12 2.35%	10 1.96%	122 23.87%	201 39.33%	166 32.49%	3.98	.924	-.821	.754
PD3	Decision-making power should stay with top management in the organization and not delegate to lower-level employees	6 1.17%	15 2.93%	89 17.42%	263 51.47%	138 27.01%	4.00	.818	-.846	1.220
Openness To Diversity (OTD)										
OTD1	The real values of our supply chain lie in being introduced to different values and ideas	4 0.79%	17 3.33%	108 21.14%	204 39.92%	178 34.83%	3.90	.968	-.808	.535
OTD2	Talking with different firms with different values helps us understand both values better	14 2.74%	22 4.31%	118 23.09%	206 40.31%	151 29.55%	4.01	.879	-.850	.955
OTD3	Learning about people with different cultures is very important in our organization	9 1.76%	12 2.35%	105 20.55%	225 44.03%	161 31.51%	4.10	.881	-.878	.657
OTD4	We enjoy taking orders that challenge our beliefs and values as a firm	6 1.17%	15 2.93%	93 18.20%	203 39.73%	194 38.96%	4.06	.899	-.937	.955
OTD5	The most enjoyable orders are the ones that make us think from different perspectives	9 1.76%	14 2.74%	95 18.60%	211 41.30%	182 35.62%	4.09	.880	-.909	.847
OTD6	We are comfortable taking intellectually challenging orders	7 1.37%	14 2.74%	92 18.00%	210 41.10%	188 36.79%	4.08	.916	-1.027	1.102
OTD7	The participation level of our major supplier in the process of procurement and production	10 1.95%	17 3.32%	85 16.63%	211 41.29%	188 36.81%	2.96	1.383	.010	-1.255
Cross-Culture (CC)										
CC1	Our managers encourage the exchange of ideas with suppliers from different cultural settings.	10 1.95%	12 2.35%	94 18.40%	258 50.49%	137 26.81%	3.98	0.85	-0.958	1.56
CC2	Our managers allow and accept feedback from different customers in cultural settings.	2 0.39%	7 1.37%	92 18.00%	248 48.53%	162 31.70%	4.10	0.761	-0.568	0.305
CC3	Our managers value the contribution of employees from different cultural settings	0 0.00%	12 2.35%	87 17.02%	218 42.66%	194 37.96%	4.16	0.787	-0.586	-0.339
CC4	Our managers pay critical attention to intercultural issues in the supply chain	2 0.39%	7 1.37%	75 14.68%	236 46.18%	191 37.38%	4.19	0.759	-0.734	0.563

Constructs	Measurement Items	Likert Scale					Mean	Standard deviation	Skewness	Kurtosis
		1	2	3	4	5				
Supplier Integration (SI)										
DEPENDENT VARIABLES										
Supplier integration (SI)										
SI1	The participation level of our major supplier in the process of procurement and production	101 19.8%	105 20.1%	105 20.5%	111 21.7%	89 17.4%	2.96	.783	-.791	.835
SI2	Our major supplier shares their production schedule with us	83 16.2%	115 22.5%	108 21.1%	147 28.8%	58 11.4%	2.96	1.272	-.077	-1.124
SI3	Our major supplier shares available inventory with us	71 13.89%	102 19.96%	126 24.66%	127 24.85%	85 16.63%	3.10	1.289	-.117	-1.061
SI4	We help our major supplier to improve its process to meet our needs better	69 13.50%	93 18.20%	120 23.48%	153 29.94%	76 14.87%	3.14	1.264	-.233	-.998
Customer Integration (CI)										
CI1	The level of computerization for our customer's ordering	91 17.81%	98 19.18%	98 19.18%	137 26.81%	87 17.02%	3.06	1.361	-.129	-1.226
CI2	The level of sharing of market information from our customer	84 16.44%	92 18.00%	114 22.31%	123 24.07%	98 19.18%	3.12	1.355	-.144	-1.171
CI3	The level of communication with our customer	9 1.76%	14 2.74%	109 21.33%	231 45.21%	148 28.96%	3.97	.878	-.810	.891
CI4	The establishment of quick ordering systems with our customer	6 1.17%	19 3.72%	88 17.22%	277 54.21%	121 23.68%	3.95	.814	-.859	1.286
CI5	Follow-up with our customer for feedback	4 0.78%	3 0.59%	107 20.94%	238 46.58%	159 31.12%	4.07	.782	-.586	.527
CI6	The frequency of period contacts with our customer	7 1.37%	7 1.37%	95 18.59%	259 50.68%	143 27.98%	4.03	.803	-.845	1.465
Internal Integration (II)										
II1	Enterprise application integration among internal functions.	3 0.59%	11 2.15%	92 18.00%	252 49.32%	153 29.94%	4.06	.785	-.665	.619
II2	Integrative inventory management.	1 0.20%	8 1.57%	109 21.33%	230 45.01%	163 31.90%	4.07	.780	-.418	-.344
II3	Real-time searching of logistics-related operating data.	1 0.20%	11 2.15%	101 19.77%	244 47.75%	154 30.14%	4.05	.775	-.475	-.100
II4	The utilization of periodic interdepartmental meetings among internal functions.	1 0.20%	12 2.35%	99 19.37%	261 51.08%	138 27.01%	4.02	.759	-.472	.086
II5	The use of cross-functional teams in process improvement	1 0.20%	15 2.94%	113 22.11%	244 47.75%	138 27.01%	3.98	.792	-.424	-.169

Constructs	Measurement Items	Likert Scale					Mean	Standard deviation	Skewness	Kurtosis
		1	2	3	4	5				
II6	Real-time integration and connection among all internal functions from raw material management through production, shipping, and sales	5 0.98%	9 1.76%	99 19.37%	240 46.97%	158 30.92%	4.05	.812	-.732	.813
MODERATORS										
Trust (TR)										
TR1	This supplier keeps promises it makes to our firm	3 0.59%	1 0.20%	68 13.31%	285 55.77%	148 28.96%	4.14	.687	-.663	1.564
TR2	This supplier is not always honest with us	0 0.00%	8 1.57%	71 13.89%	197 38.55%	235 45.99%	4.29	.761	-.755	-.189
TR3	We believe the information that this vendor provides us	0 0.00%	4 0.78%	79 15.46%	308 60.27%	120 23.48%	4.06	.646	-.236	.012
TR4	This supplier is genuinely concerned that our business succeeds	1 0.20%	6 1.17%	73 14.29%	175 34.25%	254 49.71%	4.33	.776	-.892	.159
TR5	When making important decisions, this supplier considers our welfare as well as its own	1 0.20%	4 0.78%	60 11.74%	156 30.53%	288 56.36%	4.43	.743	-1.104	.648
TR6	We trust this supplier keeps our best interests in mind	0 0.00%	6 1.17%	49 9.59%	202 39.53%	254 49.71%	4.38	.706	-.887	.263
TR7	This supplier is trustworthy	9 1.76%	21 4.11%	96 18.79%	251 49.12%	134 26.22%	3.94	.878	-.877	1.033
TR8	We find it necessary to be cautious with this supplier	6 1.17%	6 1.17%	76 14.87%	216 42.27%	207 40.51%	4.20	.818	-1.027	1.462
Leadership										
Top management support (TMS)										
TMS1	Our leaders offer innovation and continuous improvement policies.	1 0.20%	1 0.20%	69 13.50%	147 28.77%	293 57.34%	4.43	.742	-1.023	.224
TMS2	Our leaders provide the necessary resources for our work.	1 0.20%	2 0.39%	86 16.83%	296 57.93%	123 24.07%	4.06	.665	-.309	.330
TMS3	Our leaders encourage our trading partners' involvement in our firm's activities.	1 0.20%	2 0.39%	93 18.20%	177 34.64%	237 46.38%	4.27	.781	-.659	-.466

Constructs	Measurement Items	Likert Scale					Mean	Standard deviation	Skewness	Kurtosis
		1	2	3	4	5				
TMS4	Our leaders participate in the supply chain improvement process.	1 0.20%	1 0.20%	78 15.26%	274 53.62%	157 30.72%	4.14	.682	-.376	.071
TMS5	Our leaders review supply chain issues in management meetings.	0 0.00%	1 0.20%	65 12.72%	170 33.27%	275 53.82%	4.41	.713	-.810	-.509
TMS6	Our leaders take responsibility for operational performance in the supply systems.	1 0.20%	0 0.00%	63 12.33%	175 34.25%	272 53.23%	4.40	.715	-.899	.146

5.3.1 Descriptive Analysis of the Statistics

This section explains the above statistics. The section offers the analysis which employed a descriptive approach (mean and standard deviations) to describe the views of respondents on variables used in this study. This model comprises four independent variables: Organisational Culture, National Culture, Openness to Diversity, and Cross Culture. It also includes three dependent variables: Customer Integration, Supplier Integration, and Internal Integration. Again, there are two moderating variables, namely, Trust and Leadership. The table captures the five Likert scale arrangements as follows: 1 = Strongly Disagree (SD) 2= Disagree (D) 3= Neither agree nor disagree (N) 4= Agree (A) 5= Strongly agree (SA). The Likert scale shows the number of responses for each measurement item or question text with their respective percentages beneath them. There was a total of five hundred and eleven (511) responses for all the items.

Table 5.3 also showed that Organisational Culture scored (Mean = 4.26; SD=0.732). National Culture scored (Mean = 3.955; SD=0.83). Cross Culture scored (Mean = 4.071; SD=0.75). Openness to Diversity scored (Mean = 4.126; SD=0.766). Customer Integration (Mean = 4.161; SD=0.749). Supplier Integration scored (Mean = 4.119; SD=0.788). Internal Integration scored (Mean = 4.094; SD=0.783). Trust scored (Mean = 3.987; SD=0.831) and Leadership scored (Mean = 4.084; SD=0.803). The descriptive analysis shows that Organisational Culture, National Culture, Cross Culture, and Openness to Diversity scored a mean above 3.50, indicating that these factors play an important role in the dependent variables (Customer Integration, Supplier Integration, and Internal Integration). Again, Trust and Leadership also scored means above 3.50, indicating that they play a critical role in enhancing the relationship between the independent variables

(Organisational Culture, National Culture, Cross Culture, and Openness to Diversity) and dependent variables (Customer Integration, Supplier Integration, and Internal Integration).

5.4 Structural Equation Modeling

Structural Equation Modelling (SEM) is a statistical tool used to distinguish between various constructs (Hair et al. 2018). It resides in factor analysis and multiple regression analysis as multivariate analysis techniques. The study used SEM for its data analysis because it identified the strength of relationships between the dependent and the independent variables (Hair et al., 2018). Again, the SEM also allows for model measurement assessment to evaluate the reliability and validity of measurements in the model (Hair et al., 2018). Furthermore, SEM can support a complete test of the model that fits a singular framework rating test at the same time. In effect, SEM seeks to examine a set of linkages that are described by difficult equations. It combines factor analysis and multiple regressions to examine the relationship between variables and test hypotheses (Hair et al., 2018). Since this study aims to explore the relationship between socio-cultural factors and supply chain integration SEM was used to analyze the data using the methods described in the previous chapter. The Smart PLS has been rated as one of the statistical data analysis techniques that the researcher is adopting due to its suitability in employing any sample size. That is, it can be used in smaller and unlimited sample sizes and an unlimited number of formative indicators (Hair et al., 2013). This study, however, adopted Smart PLS 3 due to its ability to use model estimation in the delivery of empirical measures of the association among the constructs (model measurement) and between the constructs (structural model) as well as its feature to determine the fitness of the data used. Also, the outcome from the PLS-SEM was reviewed and evaluated using a system process. It helped increase the endogenous latent

construct's explained variance (R² value). Based on the above explanation, the model's evaluation focused on measurement and structural predictive capabilities. The relationship between responded items and their latent causal variable was demonstrated using the measurement model and was considered for uni-dimensionality, validity, and reliability before conducting the structural model.

5.4.1 Reliability and Validity Test

This section discusses the techniques used to ascertain the validity of the instruments and verify the constructs' reliability. In quantitative studies, assessing the measurement model is critical since it ensures the validity and outcome of the study. In addition, however, it is essential for researchers to focus on enhancing the quality of work (Hair et al., 2020). Likewise, there are two critical elements to consider when evaluating a measurement model: the study instrument's reliability and validity (Saunders et al., 2016).

5.4.1.1 Validity

A crucial aspect of research is ensuring that the instrument created to assess specific concepts actually and accurately measures the concept. According to Ringle & Ting (2018), validity relates to the extent to which an instrument assesses its intended emphasis. The validity of the research instrument will be examined through face, content, convergent, and discriminant validity (Henseler, Ringle, & Sarstedt, 2015). According to Churchill (2001), the important issue for content validity is the methodology used to develop the questionnaire. Content validity was assessed by thoroughly examining investigated constructs' previous empirical and theoretical work. The face validity of the questionnaire was assessed through the pre-test exercise of the questionnaire with selected supply chain professionals as well as the supervisors' expert review of the applicability and suitability of the questionnaire to achieve the study's intended objectives. To ensure that the

constructs were truly distinct from each other and would capture some phenomena, both convergent and discriminant validity was established (Khalid et al., 2012; Kothari, 2012). When two or more items are highly associated and measure the same construct, they are said to have convergent validity. In Hair et al.'s (2011, 2014) views, to demonstrate the convergent validity of the reflective measurement model in using PLS-SEM, a researcher needs to examine the average variance extracted (AVE) in which its value should be 0.50 or higher. Meanwhile, the discriminant validity, which can be referred to as the degree to which the measures of one construct are distinct from another construct measurement, the study examined two measures of the Fornell-Larcker Criterion and cross-loading (Henseler et al., 2015). The Fornell-Lacker Criterion postulates that “the latent construct shares more variance with its assigned indicators than other latent variables in the structural model.” In statistical terms, it can also be said that each latent construct should have a greater average variance extracted (AVE) than the shared variance (squared correlation) of any other latent construct for the discriminant validity is to have the cross-loading value in which the indicators loading of the associated latent construct should be higher than its loading with other constructs remaining (Hair et al., 2011).

In this study, high content validity was achieved particularly when all the items in the model loaded above the recommended threshold of 0.7. (Churchill (2001). Although few items that could not meet the 0.7 thresholds were discarded, the expert review and pilot compensated for the high face validity of the instrument. The study further explored Convergent validity using average variance extracted (AVE). The result, as presented in Table 5.5 below, shows that the average variance extracted (AVE) values were all greater than the 0.50 threshold (Hair et al.,

2011; 2019; 2021). Discriminant validity was examined using cross-loadings, Fornell-Lacker Criterion, and the HTMT ratios. Again, the result in Table 5.5 below confirms that the AVE of each latent construct was greater than the squared correlation with any other latent construct (Hair et al., 2011; 2021). For cross-loading, the result also showed that the indicator's loading with its associated latent construct was higher than its loadings with all the remaining constructs (see Table 5.6). Finally, the discriminant validity test was further explored using the HTMT ratio. The HTMT threshold (< 0.90) was met, which also confirms the discriminant validity of the research model (see Table 5.6; 5.7).

5.4.1.2 Reliability

Reliability refers to the consistency repeatedly reached and the consistency that is consistently achieved, which is evidence of the instrument's stability and predictability in measuring the concept (Mohajan, 2017). This could also be considered as being the capacity to replicate a study or study results. Khalid et al. (2012) termed reliability measurement as the extent to which a measurement is devoid of random error by producing a consistent result. To measure the reliability of the instruments, the study of Hair et al. (2012) which have proposed two tests of reliability.

i.e., the internal consistency and indicator of reliability were used. Composite Reliability test instead of Cronbach Alpha was used to prioritize the variables as per their reliability during model estimate (does not imply all variables are equally reliable), making it more appropriate for PLS-SEM. Composite Reliability is from 0.7 to 0.9, indicating sufficient reliability of the measures. In assessing internal consistency, the use of Cronbach Alpha was employed. Interestingly, all the Cronbach Alpha values were significantly above the recommended threshold (0.7). This implies

that the constructs in the model are reliable. The composite reliability coefficient also demonstrated good scale reliability (CR values above 0.7).

Prior to the hypotheses testing, multicollinearity was evaluated using the variance inflation factor (VIF). Variance inflation factor (VIF) measures the amount of multicollinearity in a set of multiple regression variables. The result demonstrated that VIFs values recorded in this study (see Table 5.5) were below the 3.3 thresholds recommended by (Kock, 2015). This, therefore, provides evidence to justify that the predictors have no multicollinearity issues.

Table 5. 4: Validity and Reliability

Construct	Items	Loadings	CA	CR	AVE	VIF
Customer Integration	The level of computerisation for our customer's ordering	0.840	0.908	0.929	0.685	2.936
	The level of sharing of market information from our customer	0.832				2.946
	The level of communication with our customer	0.795				2.161
	The establishment of quick ordering systems with our customer	0.830				2.688
	Follow-up with our customer for feedback	0.839				2.933
	The frequency of period contacts with our customer	0.831				2.878
Development culture	We pursue long-range programs for manufacturing capabilities in advance of needs	0.846	0.866	0.908	0.712	2.140
	We try to anticipate the potential of new manufacturing practices and technologies	0.862				2.085
	Our plant stays at the leading edge of new technology in our industry.	0.849				2.116
	We are constantly thinking of the next generation of manufacturing technologies	0.818				1.930
Group culture	Our supervisors encourage the people who work for them to work as a team	0.863	0.861	0.915	0.781	2.053
	Our supervisors encourage employees to exchange opinions and ideas	0.903				2.256
	Our supervisors frequently hold group meetings for discussion among Employees	0.885				2.277
Hierarchical culture	Even small matters have to be referred to someone higher up for a final answer	0.865	0.876	0.915	0.729	2.307
	Any decision I make has to have my boss's approval	0.850				2.180
	There can be little action taken here until a supervisor approves a decision	0.864				2.269
Internal Integration	Enterprise application integration among internal functions	0.785	0.918	0.936	0.710	2.137
	Integrative inventory management	0.867				3.083
	Real-time searching of logistics-related operating data	0.865				3.030
	The utilization of periodic interdepartmental meetings among internal functions	0.846				2.742
	The use of cross-functional teams in process improvement.	0.834				2.628
	Real-time integration and connection among all internal functions from raw material management through production, shipping, and sales	0.854				2.790
Long/short term	Respect for tradition is essential for me	0.854	0.875	0.914	0.726	2.038
	I work hard for success in the future	0.855				2.415
	Traditional values are essential for me	0.852				2.093
	I plan for the long term	0.848				2.352
Masculinity/femininity	In our organisation, there is no gender preference for people promoted to managerial position	0.810	0.872	0.912	0.721	2.028
	Solving organizational problems requires the active forcible approach which is typical of men	0.870				2.437
	It is more important for men to have a professional career than it is for women to have one	0.854				1.971

Construct	Items	Loadings	CA	CR	AVE	VIF
	Women do not value recognition and promotion in their work as much as men do	0.861				2.169
Openness To Diversity	The real values of our supply chain lie in being introduced to different values and ideas	0.803	0.940	0.952	0.769	2.306
	Talking with different firms with different values help us understand both values better	0.886				3.467
	Learning about people with different cultures is very important in our organization	0.879				3.247
	We enjoy taking orders that challenges our beliefs and values as a firm	0.896				3.873
	The most enjoyable orders are the ones that makes us think from different perspectives	0.904				3.781
	We are comfortable taking orders that are intellectually challenging	0.890				3.274
Power distance	Managers should make most decisions without consulting subordinates	0.800	0.809	0.887	0.725	1.480
	Manager should not ask subordinates for advice, because they might appear less powerful	0.874				2.146
	Decision making power should stay with top management in the organization and not delegate to	0.878				2.107
Rational culture	pursue long-range programs for manufacturing capabilities in advance of needs.	0.840	0.860	0.905	0.704	2.114
	We try to anticipate the potential of new manufacturing practices and technologies.	0.835				2.128
	Our plant stays at the leading edge of new technology in our industry.	0.838				1.986
	We are constantly thinking of the next generation of manufacturing technologies.	0.842				2.038
Supplier integration	The participation level of our major supplier in the process of procurement and production	0.931	0.944	0.960	0.856	2.107
	Our major supplier shares their production schedule with us	0.937				2.114
	Our major supplier shares available inventory with us	0.934				2.128
	We help our major supplier to improve its process to meet our needs better	0.899				2.944
Leadership	Our leaders offer innovation and continuous improvement policies.	0.774	0.800	0.873	0.696	1.805
	Our leaders encourage our trading partners' involvement in our firm's activities.	0.901				1.540
	Our leaders take responsibility for operational performance in the supply systems.	0.824				2.012
Trust	This supplier is not always honest with us	0.876	0.865	0.890	0.672	2.152
	This supplier is genuinely concerned that our business succeeds	0.775				1.917
	When making important decisions, this supplier considers our welfare as well as its own	0.710				2.247
	We trust this supplier keeps our best interests in mind	0.903				2.145
Uncertainty avoidance	Rules and regulations are important because they inform workers what the organization expects of them	0.888	0.906	0.934	0.781	2.703
	Order and structure are critical in a work environment	0.886				2.716
	It is better to have a bad situation that you know about than to have an uncertain situation which might be better	0.880				2.617
	People should avoid making changes because things could get worse	0.880				2.675

Construct	Items	Loadings	CA	CR	AVE	VIF
Cross Culture	Our managers encourage exchange of ideas with suppliers from different cultural settings.	0.849	0.874	0.909	0.714	2.703
	Our managers allow and accept feedbacks from different customers in cultural settings.	0.867				2.716
	Our managers value the contribution of employees from different customers in cultural settings.	0.843				2.617
	Our managers pay critical attention to intercultural issues in the supply chain	0.819				2.675

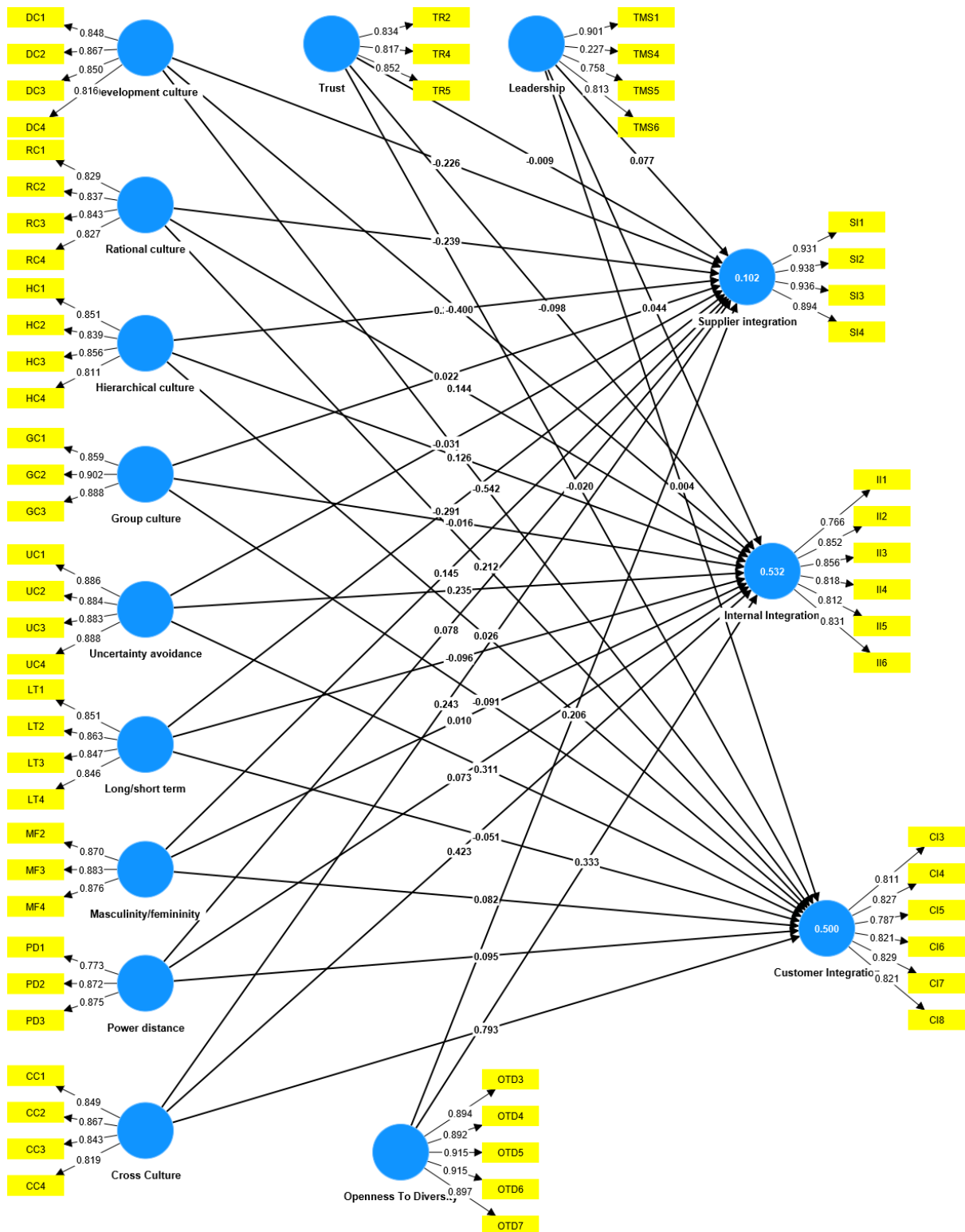
Table 5. 5: Discriminant Validity

Constructs	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Customer Integration	0.828													
Development Culture	0.571	0.844												
Group culture	0.568	0.534	0.884											
Hierarchical culture	0.589	0.579	0.588	0.854										
Internal Integration	0.815	0.480	0.574	0.612	0.842									
Leadership	-0.042	-0.068	-0.034	-0.025	-0.052	0.834								
Long/short term	0.501	0.555	0.566	0.632	0.489	-0.034	0.852							
Masculinity/femininity	0.532	0.441	0.643	0.512	0.500	-0.054	0.559	0.849						
Openness To Diversity	0.678	0.547	0.595	0.610	0.665	0.014	0.635	0.509	0.877					
Power distance	0.565	0.528	0.663	0.565	0.553	-0.041	0.572	0.772	0.633	0.851				
Rational Culture	0.641	0.644	0.605	0.831	0.631	-0.010	0.641	0.561	0.645	0.622	0.839			
Supplier integration	0.309	0.107	0.153	0.179	0.234	0.028	0.018	0.164	0.180	0.168	0.114	0.925		
Trust	-0.060	-0.034	-0.034	-0.009	-0.059	0.764	-0.060	-0.042	-0.048	-0.050	-0.006	0.042	0.820	
Uncertainty avoidance	0.629	0.536	0.879	0.627	0.635	-0.048	0.607	0.690	0.661	0.658	0.635	0.165	-0.022	0.883

Table 5. 6: Heterotrait-Monotrait Ratio (HTMT)

Constructs	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Customer Integration														
Development culture	0.640													
Group culture	0.639	0.617												
Hierarchical culture	0.658	0.660	0.674											
Internal Integration	0.593	0.535	0.640	0.680										
Leadership	0.058	0.074	0.060	0.039	0.066									
Long/short term	0.552	0.632	0.653	0.725	0.542	0.076								
Masculinity/femininity	0.587	0.502	0.736	0.575	0.549	0.084	0.635							
Openness To Diversity	0.728	0.604	0.655	0.672	0.713	0.064	0.703	0.555						
Power distance	0.659	0.628	0.792	0.671	0.641	0.083	0.680	0.715	0.726					
Rational culture	0.724	0.744	0.701	0.653	0.707	0.036	0.737	0.640	0.717	0.746				
Supplier integration	0.333	0.117	0.169	0.194	0.250	0.036	0.057	0.174	0.185	0.191	0.124			
Trust	0.073	0.055	0.068	0.050	0.083	0.657	0.075	0.071	0.052	0.102	0.052	0.044		
Uncertainty avoidance	0.692	0.603	0.792	0.704	0.696	0.060	0.682	0.768	0.713	0.769	0.719	0.178	0.066	

Figure 5.1: Measurement Model



5.5 Structural Model Analysis and Hypothesis Testing

The structural model test is done after the measurement model assessment has been proven valid and reliable of latent variables in the study. This section involves measuring the model's predictive capacity and testing the existence of relationships among variables. In testing for relationship significance, the bootstrapping method is employed to evaluate the significance of the path coefficients produced in the PLS-SEM. The largely used criteria to evaluate the structural model includes the coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), and effect size (q^2) (Hair et al., 2014).

5.5.1 Assessment of the Significance and Relevance of Structural Model Relationships

As already indicated, in structural models, path coefficients represent the hypothesized relationships among latent variables. The analysis results for the structural model path coefficients significance levels are presented in Table 5.9. These constructs were significant because, at a significance level of 10%, their t-values were 1.65 or higher. This is analogous to Confirmatory Factor Analysis (CFA) in alternative software. Alternatively, it could be observed that the p-values of the constructs that were significant were either 0.10 or lower.

5.5.2 Coefficients of Determination (R^2) and Adjusted R^2 (R^2_{adj})

The coefficient of determination (R^2) measures a proportion of variation within the dependent variable that the independent variables have explained. The (R^2) in this study measures the predictive accuracy of the independent variables explored in the study. According to Falk & Miller (1992), the R^2 should be greater than 0.10 to accept the model's predictive relevance. The model shows substantial predictive accuracy (R^2) values of 0.578, 0.556 and 0.094 towards customer integration, internal integration, and supplier

integration, respectively, and substantial predictive accuracy (R^2 adjusted) values of 0.565, 0.541 and 0.064 toward customer integration, internal integration, and supplier integration respectively as displayed in Table 5.7

Table 5. 7: Coefficients of Determination (R^2) and R^2 Adjusted

Variables	R Square	R Square Adjusted	Interpretation
Customer Integration	0.578	0.565	Substantial
Internal Integration	0.556	0.541	Substantial
Supplier integration	0.094	0.064	Weak

5.4.3 Standardized Root Mean Square Residuals (SRMR)

According to Chen (2007), the Standardized Root Mean Square Residuals (SRMR) is an index of the average of standardized residuals between the observed and the hypothesized covariance matrices. Thus, it allows assessing the average magnitude of the discrepancies between observed and expected correlations as an absolute measure of the (model) fit criterion. A value less than 0.10 or 0.08 (in a more conservative version; (see Hu & Bentler, 1999) is considered a good fit. Henseler et al. (2014) introduced the SRMR as a goodness-of-fit measure for PLS-SEM that can be used to avoid model misspecification. Table 5.8 shows that this study model's SRMR was 0.067, which revealed that this study model had a good fit, whereas the Chi-Square was equal to 1.177.122, and NFI equal to 0.802 was also measured.

Table 5. 8 : Model *Fitness*

	Saturated Model	Estimated Model
SRMR	0.067	0.067
d_ULS	1.349	1.348
d_G	0.622	0.622
Chi-Square	1,177.166	1,177.122
NFI	0.802	0.802

5.4.4 Effect Size (Q^2)

One way to check the accuracy of a PLS model is to calculate the value of Q^2 (Geisser, 1974; Stone, 1974). This metric is based on the process of blindly removing a single point from the data matrix, setting the abstract point, and estimating the model phase (Rigdon, 2014b; Sarstedt et al., 2014). Thus, Q^2 is not a prediction method but combines the sample prediction element with the descriptive strength of the sample (Shmueli et al., 2016; Sarstedt et al., 2017a). Using this estimate as an introduction, the blindfold process predicts the data released. The slight difference between the predicted value and the baseline translates to a higher Q^2 value, thus, indicating greater accuracy. As a guide, the value of Q^2 should be greater than zero for a particular endogenous to indicate the predictive accuracy of the structural model for that construct. As a rule, Q^2 higher than 0, 0.25, and 0.50 indicates the PLS-path model's small, medium, and large predictive relevance. The results show Q^2 values of 0.338, 0.424, and 0.459 for Customer Integration, Internal Integration, and Supplier integration, respectively (see Table 5.9). The results show medium predictive relevance of the model. Thus, the Q -square values are all above the threshold, indicating that the values are well reconstructed and that the model has predictive relevance.

Table 5.9 Effect Size (Q^2)

Constructs	SSO	SSE	$Q^2 (=1-SSE/SSO)$
Customer Integration	1470.000	973.140	0.338
Internal Integration	1764.000	1016.527	0.424
Supplier integration	1470.000	794.980	0.459

Source: Field Data (2022)

5.5.5 Path Coefficient

The results of the analysis for the structural model path coefficients' significance levels, as presented in Table 5.10, these constructs were significant because, at a significance level of 5%, their t-values were 1.95 or higher. This is analogous to Confirmatory Factor Analysis (CFA) in alternative software. Alternatively, it could be observed that the p-values of the constructs that were significant were either 0.05 or lower.

5.5.6 Resampling Method

The PLS-SEM for statistical significance is based on non-parametric tests such as bootstrapping, blindfolding, and jackknifing (Hair et al., 2014). The result of the bootstrapping produces t statistics and standard error, which is preferable compared to the blindfolding and jackknife procedures. This study, therefore, adopted the bootstrapping generated 5000 samples procedure to assess the statistical significance of the path coefficients (Hair et al., 2014). The two-tailed test was employed at 95% confidence and a 5% significance level.

5.6 Hypothesis Testing for Direct Relationships

The first objective was to examine the influence of socio-cultural factors on supply chain integration. Based on this objective, the following hypothesis were developed:

H₁. Organisational culture has a positive and significant effect on supply chain integration.

H₂. National culture has a positive and significant effect on supply chain integration.

H₃. Cross-culture has a positive and significant effect on supply chain integration.

H₄. Openness to diversity has a positive and significant effect on supply chain integration.

The results are discussed below. The findings demonstrated a statistically significant positive connection between organisational culture and internal integration ($\beta=0.265$, $p<0.05$). This result also implies that, all other things being equal, a unit improvement in organisational

culture contributes approximately 27% of improvement in internal integration. This confirms that the H1a of the study is supported and concludes that organisational culture significantly predicts internal integration.

Again, Organisational Culture and Supplier Integration were shown to be strongly associated ($\beta=0.237$, $p<0.05$). This result also implies that all other things being equal, a unit improvement in organisational culture contributes approximately 24% of improvement in supplier integration. This confirms that the H1b of the study is supported and concludes that organizational culture significantly influences supplier integration.

Furthermore, the findings demonstrated a significant positive association between Organisational Culture and Customer Integration ($\beta=0.554$, $p<0.05$). This result also implies that, all other things being equal, a unit improvement in organisational culture contributes approximately 55% of improvement in customer integration. This confirms that the H1c of the study is supported and concludes that organisational culture significantly influences customer integration.

The findings revealed an insignificant connection between National Culture and Internal Integration ($\beta=0.388$, $p<0.05$). This result also implies that, all other things being equal, a unit improvement in national culture does not contribute to any internal integration improvement. This confirms that the H2a of the study is not supported and concludes that national culture insignificantly influences internal integration. Again, National Culture and Supplier Integration were statistically significant ($\beta=0.114$, $p<0.05$), indicating that National Culture had an effect on Supplier Integration. This result also implies that all other things being equal, a unit improvement in national culture contributes approximately 11% of improvement in supplier integration. This confirms that the H2b of the study is supported and

concludes that national culture significantly influences supplier integration. Furthermore, the findings demonstrated a significant positive association between National Culture and Customer Integration ($\beta=0.452$, $p<0.05$). This result also implies that, all other things being equal, a unit improvement in national culture contributes approximately 45% of improvement in customer integration. This confirms that the H2c of the study is supported and concludes that national culture significantly influences customer integration.

Furthermore, the results demonstrated a significant positive connection between Cross Culture and Internal Integration ($\beta=0.302$, $p>0.05$), indicating that Cross Culture had a statistically significant effect on Internal Integration. This result also implies that all other things being equal, a unit improvement in cross-culture contributes to any internal integration improvement. This confirms that the H3a of the study is supported and concludes that cross-culture significantly affects internal integration.

Cross Culture and Supplier Integration were found to be significantly associated ($\beta=0.461$, $p<0.05$), indicating that Cross Culture had a statistically significant effect on Supplier Integration. This result also implies that all other things being equal, a unit improvement in cross-culture contributes approximately 46% of improvement in supplier integration. This confirms that the H3b of the study is supported and concludes that cross-culture significantly affects supplier integration. Moreover, the findings demonstrated a significant positive association between Cross Culture and Customer Integration ($\beta=0.173$, $p<0.05$), implying that Cross Culture had a statistically significant effect on Customer Integration. This result also implies that all other things being equal, a unit improvement in cross-culture contributes approximately 17% of improvement in customer integration. This confirms that the H3c of

the study is supported and concludes that cross-culture significantly affects customer integration.

Finally, the result showed a statistically significant positive connection between Openness to Diversity and Internal Integration ($\beta=0.359$, $p<0.05$), indicating that Openness to Diversity has an effect on Internal Integration. This result also implies that all other things being equal, a unit improvement in openness to diversity contributes approximately 36% of improvement in internal integration. This confirms that the H4a of the study is supported and concludes that cross-culture significantly affects internal integration.

Again, the relationship between Openness to Diversity and Supplier Integration was significant ($\beta=0.240$, $p<0.05$), indicating that Openness to Diversity had a statistically significant effect on Supplier Integration. This result also implies that all other things being equal, a unit improvement in openness to diversity contributes approximately 24% of improvement in supplier integration. This confirms that the H4b of the study is supported and concludes that cross-culture significantly predicts supplier integration. Furthermore, the findings demonstrated a significant positive association between Openness to Diversity and Customer Integration ($\beta=0.311$, $p<0.05$), implying that Openness to Diversity had a statistically significant effect on Customer Integration. This result also implies that all other things being equal, a unit improvement in openness to diversity contributes approximately 31% of improvement in customer integration. This confirms that the H4c of the study is supported and concludes that cross-culture significantly affects customer integration.

Table 5. 10: Direct Relationships

Hypotheses	Structural Path	Path Coefficient	T Statistics	P Values	Results
<i>H1a</i>	Organisational Culture -> Internal Integration	0.265	2.119	0.400	Supported
<i>H1b</i>	Organisational Culture -> Supplier Integration	0.237	2.580	0.010	Supported
<i>H1c</i>	Organisational Culture -> Customer Integration	0.554	9.204	0.000	Supported
<i>H2a</i>	National Culture -> Internal Integration	0.388	3.162	0.003	Not Supported
<i>H2b</i>	National Culture -> Supplier Integration	0.114	2.002	0.046	Supported
<i>H2c</i>	National Culture -> Customer Integration	0.452	5.634	0.000	Supported
Hypotheses	Structural Path	Path Coefficient	T Statistics	P Values	Results
<i>H3a</i>	Cross Culture -> Internal Integration	0.302	0.024	2.981	Supported
<i>H3b</i>	Cross Culture -> Supplier Integration	0.461	4.649	0.000	Supported
<i>H3c</i>	Cross Culture -> Customer Integration	0.173	2.465	0.014	Supported
<i>H4a</i>	Openness to Diversity-> Internal Integration	0.359	2.035	0.002	Supported
<i>H4b</i>	Openness to Diversity-> Supplier Integration	0.240	3.100	0.032	Supported
<i>H4c</i>	Openness to Diversity-> Customer Integration	0.311	6.673	0.000	Supported

5.7 Moderating Effect of Trust and Leadership

The study's second objective examined the moderating effect of trust on the effect of socio-cultural factors on supply chain integration. According to the findings, the result shows that Trust did not moderate the connection between organisational culture and supply chain integration ($\beta=0.012$, $p>0.05$). The relationship between national culture and supply chain integration was also not significantly moderated by trust ($\beta=0.003$, $p>0.05$). However, Trust moderates the association between cross-culture and supply-chain integration ($\beta=0.118$, $p>0.05$). Additionally, the result shows that trust significantly moderates the link between openness to diversity and supply chain integration ($\beta=0.321$, $p<0.05$). The result shows that

trust significantly moderates the relationship between cross-culture, openness to diversity and supply chain integration.

The third objective of the study examined the moderating effect of leadership on the effect of socio-cultural factors on supply chain integration. The result shows that leadership moderates the link between organizational culture and supply chain integration significantly ($\beta=0.364$, $p<0.05$). The result also showed that leadership moderates the association between national culture and supply chain integration ($\beta=0.167$, $p>0.05$). The findings also demonstrated that leadership significantly moderates the link between cross-cultural and supply-chain integration ($\beta=0.225$, $p<0.05$) and the relationship between openness to diversity and supply-chain integration ($\beta=0.125$, $p>0.05$). The result shows that leadership significantly moderates the relationship between all the SCF (organisational culture, national culture, cross-culture, and openness to diversity) in this study and supply chain integration.

Table 5. 11: Moderating Effect of Trust and Leadership

Hypotheses	Structural Path	Path Coefficient	T Statistics	P Values	Results
H5a	Trust-> (OC &SCI)	0.012	1.587	0.146	Not supported
H5b	Trust-> (NC & SCI)	0.003	1.658	0.330	Not supported
H5c	Trust-> (CC& SCI)	0.118	2.940	0.003	Supported
H5d	Trust -> (OD & SCI)	0.231	3.268	0.001	Supported
H6a	Leadership-> (OC &SCI)	0.364	3.999	0.000	Supported
H6b	Leadership -> (NC & SCI)	0.167	3.856	0.002	Supported
H6c	Leadership -> (CC& SCI)	0.225	2.190	0.037	Supported
H6d	Leadership -> (OD & SCI)	0.125	4.387	0.007	Supported

5.8 Chapter Summary

This chapter presents the analyses' outcome using Statistical Package for Social Sciences (SPSS version 23) and Smart PLS. The discussion starts with a preliminary analysis of carrying out the necessary cleaning, presenting the demographic characteristics of respondents, and

confirmatory data analyses. Next, the session provided a preliminary response rate data analysis, including the respondents' demographic profile and descriptive analysis of the constructs in the model. Inferential analysis of the data was done in the proceeding chapter. The chapter further presents the data analysis outcomes to assess the measurement and structural models using Smart PLS analysis. The section's discussion began with the preliminary analysis of the survey data by carrying out a normality test and multicollinearity. Secondly, Structural Equation Modelling (SEM) using SmartPLS software and SPSS statistical methods analysis was used to analyse the study data and validate the measurement and structural models. The following categories were used to present the data analysis findings:

- (i) Response Rate and Non-Response Bias
- (ii) Demographic Characteristics
- (iii) Descriptive Analysis of Variables
- (iv) Normality Test
- (v) Common method bias and multicollinearity test,
- (vi) Measurement model assessment,
- (vii) Assessment of structural model and hypotheses model testing.

The presented analysis results of PLS, a component-based SEM method that is considered appropriate to estimate proposed hypotheses and structural model due to its flexibility in modelling formative constructs, show that seventeen (17) of the twenty (20) proposed hypotheses were found to be significant and supported. Discussion and implications of the results are done in the preceding chapter.

CHAPTER SIX

SUMMARY, CONCLUSION, AND RECOMMENDATIONS FOR FUTURE RESEARCH

6.1 Introduction

Chapter six (6) is the concluding chapter of the thesis because it has the summary, conclusions, and recommendations from the findings in the thesis. The chapter also talks about the contributions and the limitations of the research. The chapter is structured in four parts. The first part presents the summary of findings from the study. It provides a synopsis of the whole thesis, including the key results found by the study. The conclusions drawn from the findings relating to the study's specific objectives are captured under the conclusion section in the second part. The third part of the chapter is the recommendation which reports the relevant suggestions from the study's major findings. The last part is captured as a suggestion for future research direction.

6.2 Discussion of Findings

This section discusses the main objectives of this study. Each objective has been discussed separately in order of the results of the analysis in the previous chapter.

6.2.1 Objective One: Influence of socio-cultural Factors on supply chain integration

The first objective was to examine the influence of socio-cultural factors on supply chain integration. The results are discussed below. The findings demonstrated a statistically significant positive connection between socio-cultural factors and supply chain integration.

The findings from the discussion demonstrated evidence of socio-cultural factors' influence on supply chain integration. Thus, Organisational Culture plays an essential role in integration.

The findings are comparable to earlier studies (Braunscheidel et al., 2010; Cao et al., 2015; Yunus, E.N. and Tadisina, 2016; Porter, 2019; Taha et al., 2021; Afshar and Fazli, 2022) which also provided evidence that organisational culture plays an essential role in ensuring supply chain integration. The main focus of supply chain management initiatives is supply chain integration. This study examines the influence of organisational culture in this study to identify the effect of cultural traits that are most closely related to initiatives to combine supply chain and delivery performance. Theoretically and experimentally, previous studies have shown that organisational culture influences the adoption of management practices that are in line with the culture and that these practices are related to business performance. However, there hasn't been a lot of study on how organisational culture affects operations management literature. In two ways, the research findings add to the body of knowledge on SCI and corporate culture. First, findings based on the contingency approach provide new evidence to clarify the discrepancies in prior results on the links between corporate culture and SCI. Although the existing research has discussed organisational culture using comparable definitions and conceptualisations, they have not agreed on how the various organisational culture characteristics affect SCI (Braunscheidel et al., 2010; Naor et al., 2008; Zu et al., 2010). It has been explicitly stated that development culture and SCI are connected. Substantial empirical evidence has not yet been offered, nevertheless. According to Zu et al. (2010), there is no connection between development culture and interactions between customers and suppliers. Development (or adhocracy) culture, according to Braunscheidel et al. (2010), only influences outward integration. However, this study discovers that OC has a favorable relationship with both external integration and internal integration (II). Similar to how Zu et al. (2010) discovered that group culture positively impacted the supplier relationship,

Braunscheidel et al. (2010) found that group (or clan) culture is not associated with either II or external integration. In line with the claims made by Naor et al. (2008) that group culture drives the integration of clients and suppliers, OC is found to be positively correlated with both II and external integration in this study. This study highlights the significance of shared long-term development, cooperation, and openness in development and group cultures as SCI enhancers. The studies now available on rational culture only discover that it impacts external integration (Braunscheidel et al., 2010; Zu et al., 2010).

Contrary to earlier findings, my conclusion suggests that rational culture is positively connected to II but not to external integration. Therefore, further empirical research is required to re-evaluate how rational culture affects SCI. Zu et al. (2010) failed to identify the effects of hierarchical culture on supplier or customer connections, while Braunscheidel et al. (2010) have demonstrated that hierarchical culture negatively correlates with both II and external integration. Although this research do not discover a significant correlation between hierarchical culture and SI, the findings largely agree with Braunscheidel et al. (2010). These varied findings imply that, while hierarchical culture is beneficial for some other managerial techniques, decentralized organisational culture is better appropriate for SCI (Ruppel and Harrington, 2001).

Similarly, the findings also showed that national culture drives supply chain integration. The findings are comparable to earlier studies (Wong et al., 2017; Durach and Wiengarten, 2020; Liu et al., 2021) which also provided evidence that national culture plays an essential role in ensuring supply chain integration. By demonstrating how various national cultures play a crucial role in maintaining supply chain integration, this study adds new knowledge to the

field of national culture research. National culture has been considered in the context of SCI (Chang et al., 2016; Durach and Weingarten, 2020; Wong et al., 2017; Zhao et al., 2008), but the function of particular national cultural characteristics in SCI relationships has only sometimes been discussed. This study introduces the field of national culture research and empirically demonstrates the distinctive roles of two particular national culture aspects. Comparing this study to Durach and Weingarten (2020), the latter investigated the implications of several cultural aspects. By underlining the difficulty of tying SCI at the company level with cultural elements at the national level, this study contributes to the literature on national culture. Businesses need to understand how individualism and uncertainty avoidance have varied outcomes. Companies may find it simple to establish a strong link between SCI and flexibility performance while competing in a nation with a high level of uncertainty avoidance due to the supply chain's readiness to exchange information, which lowers uncertainty and lessens the bullwhip effect (Yunus and Tadisina, 2016). However, the impact of SCI on flexibility performance may be identical regardless of whether enterprises compete in individualist or collectivist nations. Given the modest effects of individualism on relational resources for flexible competitive advantage, the findings suggest that it may not be a substantial issue in this situation. Likewise, the findings also showed that cross-culture and openness to diversity were also found to drive supply chain integration. Though these findings are not explored in prior literature, evidence from this finding also provided evidence that cross-culture and openness to diversity plays an essential role in ensuring supply chain integration.

6.2.2 Objective Two: Moderating Effect of Trust on The Effect of Socio-Cultural Factors on Supply Chain Integration

The study's second objective examined the moderating effect of trust on the effect of socio-cultural factors on supply chain integration. The result shows that Trust did not moderate the connection between organisational culture and supply chain integration, according to the findings. The relationship between national culture and supply chain integration was also not significantly moderated by trust. However, Trust moderated the association between cross-cultural and supply chain integration. Additionally, the result shows that trust significantly moderates the link between openness to diversity and supply chain integration. The result shows that trust significantly moderates the relationship between cross-cultural openness to diversity and supply chain integration. According to this study, trust is a key enabler for SCI, which is in line with other research (Cai et al., 2010; Yeung et al., 2009).

When manufacturers think that a partner's SC partners have valuable skills and advantages and are willing to make sacrifices for the SC as a whole, they are more likely to wish to integrate with that partner to share valuable resources or learn from that partner. Additionally, when a manufacturer maintains an open dialogue with its trustworthy SC partners, they can create a cooperative culture that facilitates SCI and allows them to collaborate on problems, lessen conflict, and exchange useful knowledge and other resources. "The results show that trust has a moderate effect on both socio-cultural variables and SCI. If a business depends on a partner, it will invest to establish a long-term partnership to acquire resources and manage risks. Such an investment reduces the investor's opportunistic tendencies by turning into a specific asset that cannot be utilized in other interactions. On the other hand, this particular asset boosts the opportunism of partners who

do not put effort into the partnerships. To manage or regulate the potential opportunistic behaviors of the partners, the investor must establish trust with them. Without confidence between the investor and its partners, integration with the partners is not possible. As a result, even while dependency has little direct effect on SCI, trust has a considerable indirect impact on SCI. This demonstrates that managing partner trust is necessary to establish a wholly integrated SC (Ireland and Webb, 2007). As a result, trust balance is crucial in balancing the risks and uncertainties related to SCI (Petersen et al., 2008). Researchers have recently shown that SC interactions do have certain unfavorable repercussions. According to McCarter and Northcraft's 2007 argument, SC alliances are a type of social dilemma that might cause defections.

6.2.3 Objective Three: Moderating Effect of Leadership on The Effect of Socio-Cultural Factors on Supply Chain Integration

The third objective of the study examined the moderating effect of leadership on the effect of socio-cultural factors on supply chain integration. The result shows that leadership significantly moderates the link between organisational culture and supply chain integration. The result also showed that leadership did not moderate the association between national culture and supply chain integration. The findings also demonstrated that leadership significantly moderated the link between cross-cultural and supply-chain integration but not the relationship between openness to variety and supply-chain integration. The result shows that leadership substantially moderates the relationship between organisational culture, national culture, cross-cultural, openness to diversity and supply chain integration. Other scholars have argued that effective quality performance requires top management

commitment (Salaheldin, 2009; Zehir et al., 2012). According to Ou et al. (2007), cooperation will be necessary since top management's function and leadership qualities determine how well employees perform (Truong et al., 2017). Because the top management team's motivation is to benefit stakeholders, their dedication cannot be disregarded (Sanchez et al., 2015). Rather than one person making decisions for an organization, the management team does so (Lo and Fu, 2016). This team is sensitive to changes in the highly competitive business climate and provides support for that strategy (Raman et al., 2013). The direction, game strategy, and composition that the different firms oversee ultimately boost performance for standards and quality improvement (Rau, 2006). Most companies' top management works arduously to meet the needs and demands of the consumers (Lakhal et al., 2006) and aspire to achieve (Kaynak, 2003), which explains the organization's performance level to the market. As a result, top management investigates the surroundings and makes specific judgments and preferences that invariably improve the organisation's performance and strategic goals. These decisions and preferences reflect their confidence in their task-specific expertise and leadership abilities, which leads to higher performance (Hambrick, 2007).

According to Lo & Fu's (2016) study, the senior management team's collaboration with the CEOs improves organisational performance. Furthermore, "top management support and process control/improvement" only have an indirect and direct influence on operational performance, according to Truong et al. (2017). Although top management support has a significant impact on an organisation's operating performance (Lo & Fu, 2016; Truong et al., 2017), CEOs' and other team members' combined efforts have a significant impact on motivating employees to put forth their best efforts to raise performance levels (Rivas, 2012). CEOs and top management can now collaborate to inspire employees to give their best efforts

if their leadership qualities are generally oriented on making the right decisions. Because of this, Camelo-Ordaz et al. (2008) contend that top management exerts influence over the organisation's support for innovation, which is characterised by effective leadership, even though innovation is hampered both inside and outside the organisation. The capabilities of international SCM are hampered by the minimal integration of the SCs between enterprises or between local and global firms, although global SC has become so important for competition (Liu et al., 2015). When suppliers and clients are properly integrated into the governing relationships, business practices are well facilitated (Frohlich and Westbrook, 2001; Weingarten et al., 2016). Effective communication, stock flow, and services over the SC at the SCM height are achieved when integration is done correctly (Schoenherr and Swink, 2012; Weingarten et al., 2016). Complete integration encompassing crucial suppliers and clients is often thought in SCM papers to be rare and challenging to achieve (Huo et al., 2016) due to obstacles such as administrative, legislative, and financial challenges (Cao et al., 2015). Academics believe that firms could rely on the binding roles of senior managers to increase and preserve SC linkages (Shou et al., 2016; Wang et al., 2016). TQM (management leadership) and SCI had a good relationship in the container packet sailing industry studied by Thai and Jie (2018). It was also disclosed that if the industry is to prosper from increased performance accomplishments, SCI must be the focus of TQM. According to research by Xu et al. (2014) and Lockstrom et al. (2010), which demonstrated that TMS is an enabler to SCI as an SCM practice, top management support strongly influenced SCI.

6.3 Contribution of the Study

The outcome of this research sufficiently addresses all three key objectives set out from the research's onset by examining the key socio-cultural factors that impact supply chain

integration in the Ghanaian grocery industry. But, as the study's implication is important for discussion, it is also pertinent to deliberate on this research's theoretical and practical contributions.

6.3.1 Theoretical Contribution

The outcome of this study has confirmed that past studies over the period have seen the critical relationship existing between socio-cultural factors and supply chain management. Previous works have also shown that most of the studies evaluated these factors as standalone or separately in their studies. However, to the best of the researcher's knowledge, combinations of these factors in one model have not been studied, especially in the grocery industry. To fill this identified gap in the present works of literature, the researcher understudied by combining all the variables mentioned above to see how they can work in one model. To give a new meaning to the influence of socio-cultural factors, trust, leadership, and supply chain integration have on each other; a conceptual or theoretical model was developed and tested empirically. Such empirical justification gives contemporary knowledge on the influence of socio-cultural factors on SCI and the role of trust and leadership in the grocery industry.

From the literature review to the researcher's knowledge, there is little work connecting these factors studied by the researcher's socio-cultural factors (organisational culture, national culture, cross-culture, openness to diversity) in a single research. This new discovery offers another approach in which the socio-cultural factors and supply chain integration can be viewed, especially in developing economies like the Sub Sahara Africa Region. This research has revealed that socio-cultural factors (organisational culture, national culture, cross-

culture, openness to diversity) and leadership remain key essential factors that predict supply chain integration in the grocery industry. Though previous studies have found relationships between supply chain integration and performance outcomes, neglecting the drivers of supply chain integration, including socio-cultural factors (organisational culture, national culture, cross-culture, openness to diversity), trust, and leadership. Most of these studies were done in settings such as the manufacturing, service, and clothing industry. The studies did not cover all these variables in one setting. Consequently, this piece of work adds up to existing knowledge by way of positively validating the indirect effect of trust and leadership on the direct effect of sociocultural factors (organisational culture, national culture, cross-culture, openness to diversity) and supply chain integration in the grocery industry in developing economy, Ghana. The contribution has emphasized that all the dimensions of socio-cultural factors (organisational culture, national culture, cross-culture, openness to diversity) in this study are very important factors that could significantly influence supply chain integration in the grocery industry.

Additionally, there are other contributions given by this research work. This piece of work is one of the unique works that unearth the role of trust and leadership between socio-cultural factors (organisational culture, national culture, cross-culture, openness to diversity) and supply chain integration in the grocery industry, particularly in Ghana in Africa. This research gives a fresh understanding of how the grocery industry in Ghana assesses the factors that combine to form socio-cultural factors (organisational culture, national culture, cross-culture, openness to diversity) and supply chain integration in the grocery sector in Ghana. Again, this

work contributes to knowledge by giving an excellent meaning to how firms measure supply chain integration in the grocery industry, which has been silent by researchers.

The study's results contribute to SCM literature by stipulating which socio-cultural factor (organisational culture, national culture, cross-culture, openness to diversity) needs to be adopted to advance supply chain integration. It also fills gaps in socio-cultural factors (organisational culture, national culture, cross-culture, openness to diversity) and supply chain integration. This helps academicians and practitioners make valuable improvements to the existing systems and determine guidance for future research. Furthermore, this study offers empirical support to the roles of trust and leadership between socio-cultural factors (organisational culture, national culture, cross-culture, openness to diversity) and supply chain integration in the industry. Therefore, the researcher contends that when the socio-cultural factors are well managed by infusing the above-mentioned socio-cultural factors, they will need comparable development to drive SCI via trust and leadership.

This suggests that the effects of socio-cultural factors on supply chain integration are not just direct or univariate but rather depend on the integrative capabilities of the organization within and across the supply chain subject to leadership and trust. This study contributes to the theory by demonstrating how trust and leadership moderate the link between the dimensions of socio-cultural factors and supply chain integration in the supply chain, which has been ignored in previous literature.

The study also makes a significant contribution to theory building in socio-cultural factors by employing the Dynamic Capability Theory (DCT) and Relational View Theory (RVT) in describing the effects of socio-cultural factors on supply chain integration. Past studies

investigated Resource Based View (RBV) (Veera et al., 2016; Bagheri et al., 2014) in explaining the relationship between socio-cultural factors and supply chain integration. Therefore, the incorporation of DCT and RVT in this study is a considerable contribution to the literature on SCM.

6.3.2 Practical Contribution

The study offers significant practical implications to organisations in general as it highlights the current socio-cultural factors that the major companies are adopting in the grocery industry in Ghana. It serves as preliminary information for the benefits and challenges of adopting world-class socio-cultural factors and might be a starting point for future benchmarking and learning. The study further promotes the development of SCM in grocery and other sector organizations and management in general.

The study again has valuable implications for supply chain practitioners. First, the study underscores the critical value of introducing socio-cultural factors in the grocery sector as a strategic tool for re-engineering processes and driving supply chain integration. Managers must holistically deploy socio-cultural factors through the combination of organisational culture, national culture, cross-culture, and openness to diversity to have the full benefits of driving supply chain integration. This is because practicing these antecedents of socio-cultural factors in isolation may not yield the needed impact in driving supply chain integration. But instead, the integrated model proposed in this study could serve as a blueprint for Ghana's grocery industry, guiding them to effectively deploy their sociocultural factors strategies while at the same time identifying their weakness and improving upon them.

The findings obtained from testing the proposed model of this study could improve the common understanding among the decision-makers in the industry. This makes the institutions in the industry more likely to respond effectively to the internal and external environment. Furthermore, the findings obtained from the study serve as an instrumental tool in guiding the government, regulatory authorities, professional bodies, and policymakers on how to improve and address gaps that exist in law. A careful amendment may reduce lacuna and promote governance and implementation of the best socio-cultural factors in SCM. In addition, the government would use the findings of this study in formulating new policies that will address the challenges that are being faced by the industry.

The study offers contemporary guidelines to the industry in Ghana and beyond to make informed decisions to improve the integration of the industry and help in the growth of Ghana's economy. Additionally, Supply chain associates in the grocery industry could gain by enhancing their business operations to improve integration. Lastly, the main findings and recommendations also help the government of Ghana, and the international community set the framework for boosting growth in the grocery industry through support, good governance, and transparency.

6.4 Conclusion

The purpose of this study was to investigate the relationship between socio-cultural factors and supply chain integration by highlighting the contingency role of leadership and trust as boundary conditions. To achieve this objective, a review of existing literature was conducted, and gaps were identified. Based on the gaps identified, a conceptual framework with six main hypotheses was developed. To validate the model, a well-structured questionnaire was

designed and piloted, and data was gathered from 511 senior managers of grocery businesses in Ghana. The hypothesised model was validated with PLS-SEM. The study concludes that all the independent variables (organisational culture, national culture, cross-culture, and openness to diversity) used in this study are important in the quest to improve supply chain integration. Trust and Leadership do not just support integration but serve as an avenue to reap superior integration along the supply chain. This study, based on the findings, concludes that socio-cultural factors, trust, and leadership are inevitable in achieving supply chain integration, particularly in the grocery industry in emerging markets like Ghana.

6.5 Limitations of the Study

Like all other research works, some constraints are also related to this study. To begin with, the collected data was retrieved from a single country, Ghana, so the outcome will be difficult to generalize. Moreover, it is unclear whether the outcome will have the same effect on the role of trust and leadership between socio-cultural factors and supply chain integration in another context since it may be possible that the needs and perceptions of practitioners in other countries may differ. The factors that showed a significant positive influence on supply chain integration may prove otherwise in other countries. Also, there was a lack of adequate current research on socio-cultural factors in the sector, especially in developing countries, and for that matter, Ghana. The study mitigated this challenge by comparing similar research studies in different sectors to try and infer the findings.

Secondly, the study's outcome dwelled on cross-sectional data and covered the views of the focal firms at a specific period. Meanwhile, using a cross-sectional strategy limits the study's ability to examine trust and leadership's role in ensuring advanced supply chain integration over time. However, a longitudinal approach that follows respondents over time could offer

much more insight into examining the role of trust and leadership between socio-cultural factors and supply chain integration. The use of four dimensions of socio-cultural factors in the study serves as another limitation in the study. As emphasized in the previous literature, the dimensions are not completely exhaustive, and the antecedents of socio-cultural factors adoption may include other variables that are not included to warrant academic consideration in this current study, even though they may be an important component for the successful implementation of socio-cultural factors.

This research made use of quantitative techniques in data collection and analysis. The use of a questionnaire offered very valuable information on the subject matter. However, using qualitative data such as interviews could also offer more detailed information on the topic. The research collected data from top management alone, which gave very important information to the study.

6.6 Recommendation for Future Research

The study's outcome shows that the research model indeed predicts the role of trust and leadership between socio-cultural factors and supply chain integration in the grocery industry. This research was done among grocery firms in the industry in Ghana. Despite the study's contribution to theory and practice, this study has some limitations, which as wealth highlighting. The findings should therefore be interpreted in light of the limitations of the study. Since the result cannot be generalised as it may differ for different industries in different countries, the researcher recommends extending the study scope to include other countries since different countries may have different concerns and needs that may influence the study outcomes. Erlinda et al. (2015) indicated that despite the extensive amount of

studies examining the integration within a supply chain, practices from developing countries were continually overlooked. Again, a comparative study can be conducted across different countries to determine whether the outcome in Ghana can be similar for other countries.

To avoid common method bias, the study employed a single-respondent approach as recommended by prior studies (Murphy et al., 2005; Chang et al., 2020; Tehseen et al., 2017). However, it is also argued that no single individual has adequate information regarding the operations and activities of the firm. Hence, using multiple responses, like two or three respondents from an organisation, may be useful.

Also, the research was conducted using quantitative methods to examine the role of trust and leadership between socio-cultural factors and supply chain integration in the grocery industry. However, a qualitative approach can be used to conduct this research and examine the same relationship. Using qualitative methods, detailed information could be obtained on the supply chain integration assessment. Erlinda et al. (2015) opined that future studies should also consider triangulating the findings with different methods to investigate the relationships between SCI, its drivers, and firm performance. Also, future research should consider simulating the research framework in this study in other service and production areas like marketing, health, manufacturing, oil and gas, automobile, and non-cold pharmaceutical services, amongst others. This will help confirm this study's findings and escalate the external generalisability of this research findings.

The study examined the moderating effect of trust on the effect of socio-cultural factors on supply chain integration. According to the findings, the result shows that trust did not moderate the connection between organisational culture and supply chain integration. Porter

(2016) argued that strategic technology and knowledge integration, which are some dimensions of SCI that may affect firm performance, must be looked at in future studies. The influence of environmental factors such as culture and technology in SCI must be considered in future studies. Further exploration is also needed into the question of why the moderating impact of trust to supply chain integration had no impact on the driver of supply chain integration, the desire to improve (Glenn et al., 2009; Wang, 2018). A longitudinal study would be preferred for a more in-depth study on how the factors drawn from both interpersonal and inter-organisational levels co-evolve and interact with each other, jointly influencing SCI (Wang et al., 2018).

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APPENDIX A: Research Instrument of the Study (Questionnaire)

APPENDIX

Survey Questionnaire

UNIVERSITY OF CENTRAL LANCASHIRE- UK

**EVALUATION OF SOCIO-CULTURAL IMPACT ON SUPPLY CHAIN
INTEGRATION: THE ROLE OF TRUST AND LEADERSHIP AMONG GROCERY
PRODUCT SUPPLIES IN THE SUPPLY CHAIN SYSTEMS IN GHANA**

Researcher: ISAAC ASAMPONG EFFAH

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General Instructions and Information

I am currently pursuing a PhD program in Supply Chain Management at the above-mentioned institution on the topic above. Kindly read the instructions below and answer the questions posed.

1. This questionnaire is divided into four parts. Section A consists of questions related to demographic data, Section B deals with questions related to integration with supply chain partners in the supply chain, section C relates to socio-cultural factors and section D on leadership and trust. The questions have been structured to be precise as desirable and may take about 30 minutes to answer them.
2. This study is an academic exercise, and your response would be treated with the utmost secrecy and respect and no individual person will be identified or known hence no provision of name.
3. Please if you would like a summary of the results of this study, kindly provide your e-mail address at the end of the questionnaire.

NOTE: Please, having read the above, do you consent taking part in this survey?

Yes No

SECTION A: DEMOGRAPHIC BACKGROUND

Please answer each question either by writing in the space provided or tick (☒) the most-appropriate option.

1. Please indicate the ownership structure of the company.
 - (a) Foreign-owned company
 - (b) Local firm
 - (c) Foreign-local firm (joint-venture)
 - (d) Other(s) please specify.....
2. Kindly indicate your position in the firm.
 - (a) Senior manager
 - (b) Middle manager
 - (c) Junior manager
 - (d) Other(s) please specify.....
3. What is the age range of your firm?
 - (a) 1 – 5 years
 - (b) 6 – 10 years
 - (c) 11 – 15 years
 - (d) 16 – 20 years
 - (e) 21 – 30 years
 - (f) Above 30 years
4. What is your highest educational background?
 - (a) Secondary school
 - (b) Diploma
 - (c) Bachelor’s degree
 - (d) Master’s degree
 - (e) Doctorate degree
 - (f) Other(s) please specify.....
5. What is the number of employees in your firm?
 - (a) Less than 50
 - (b) 51 – 100
 - (c) 101 – 150
 - (d) 151 – 200
 - (e) Above 200
6. How many regions does your firm serve?
 - (a) 1 – 3
 - (b) 4 – 6
 - (c) 7 – 9
 - (d) 10 – 12
 - (e) 13 +
7. Your present job function (Please check the closest function which applies):
 - a. Corporate Executive
 - b. Manufacturing Engineering
 - c. Quality Assurance/Control
 - d. Product Design/ R&D
 - e. Purchasing
 - f. Manufacturing Production
 - g. Sales/ Marketing

- h. Human Resource
- i. Finance/Accounting
- j. Transportation/Logistics/Distribution
- k. Retail/Warehouse
- l. Other (please specify):

SECTION B: SUPPLY CHAIN INTEGRATION

Please indicate the extent to which you agree with the following statements:

1 = Strongly Disagree (SD) 2= Disagree (D) 3= Neither agree nor disagree (N) 4= Agree (A) 5= Strongly agree (SA)

Please circle (O) the most appropriate answer. Please select ONLY one answer from each statement,

STATEMENTS	1	2	3	4	5
Supply Chain Integration (Internal Integration (II))					
II1: Enterprise application integration among internal functions.					
II2: Integrative inventory management.					
II3: Real-time searching of logistics-related operating data.					
II4: The utilization of periodic interdepartmental meetings among internal functions.					
II5: The use of cross functional teams in process improvement.					
STATEMENT	1	2	3	4	5
II6: Real-time integration and connection among all internal functions from raw material management through production, shipping, and sales					
Supplier integration (SI)					
SI1: The participation level of our major supplier in the process of procurement and production					
SI2: Our major supplier shares their production schedule with us					
SI3: Our major supplier shares available inventory with us					
SI4: We help our major supplier to improve its process to better meet our needs					
Customer Integration					
To what extent does your organization integrate and coordinate activities with your customers					
CI1: The level of computerization for our customer's ordering					
CI2: The level of sharing of market information from our customer					
CI3: The level of communication with our customer					
CI4: The establishment of quick ordering systems with our customer					

STATEMENT	1	2	3	4	5
CI5: Follow-up with our customer for feedback					
CI6: The frequency of period contacts with our customer					

SECTION C: SOCIO CULTURAL FACTORS

Please indicate the extent to which you agree with the following statements:

1 = Strongly Disagree (SD) 2= Disagree (D) 3= Neither agree nor disagree (N) 4= Agree (A) 5= Strongly agree (SA)

Please circle () the most appropriate answer. Please select ONLY one answer from each statement,

STATEMENTS	1	2	3	4	5
ORGANISATIONAL CULTURE					
Development culture (DC)					
DC1: We pursue long-range programs for manufacturing capabilities in advance of needs.					
DC2: We try to anticipate the potential of new manufacturing practices and technologies.					
DC3: Our plant stays at the leading edge of new technology in our industry.					
DC4: We are constantly thinking of the next generation of manufacturing technologies.					
Rational culture (RC)					
RC1: Our incentive system encourages us to vigorously pursue plant objectives					
RC2: Our incentive system is fair in rewarding people who accomplish plant objectives					
RC3: Our incentive system really recognizes the people who contribute the most to our plant					
RC4: The incentive system at this plant encourages us to reach plant goals					
Hierarchical culture (HC)					
HC1: Even small matters have to be referred to someone higher up for a final answer					
HC2: Any decision I make has to have my boss's approval					
HC3: There can be little action taken here until a supervisor approves a decision					
Group culture (GC)					
GC1: Our supervisors encourage the people who work for them to work as a team					
STATEMENT	1	2	3	4	5

STATEMENT	1	2	3	4	5
GC2: Our supervisors encourage employees to exchange opinions and ideas					
GC3: Our supervisors frequently hold group meetings for discussion among Employees					

National Culture					
Uncertainty avoidance (UC)					
UC1: Rules and regulations are important because they inform workers what the organization expects of them					
UC 2: Order and structure are very important in a work environment					
UC 3: – It is better to have a bad situation that you know about, than to have an uncertain situation which might be better					
UC 4: People should avoid making changes because things could get worse					
Long/short term (LT)					
LT1: Respect for tradition is important for me					
LT2: I work hard for success in the future					
LT3: Traditional values are important for me					
LT4: I plan for the long term					
Masculinity/femininity (MF)					
MF1: It is preferable to have a man in a high-level position rather than a woman					
MF2: Solving organizational problems requires the active forcible approach which is typical of men					
MF3: It is more important for men to have a professional career than it is for women to have one					
MF4: Women do not value recognition and promotion in their work as much as men do					
Power distance (PD)					
PD1: Managers should make most decisions without consulting subordinates					
PD2: Manager should not ask subordinates for advice, because they might appear less powerful					
PD3: Decision making power should stay with top management in the organization and not delegate to lower-level employees					
PD3: Employees should not question their manager’s decision					
OPENNESS TO DIVERSITY (OTD)					
OTD1: Our firm engage in discussion with firms with different ideas and values					
OTD2: The real values of our supply chain lie in being introduced to different values and ideas					

STATEMENT	1	2	3	4	5
OTD3: Talking with different firms with different values help us understand both values better					
OTD4: Learning about people with different cultures is very important in our organization					
OTD5: We enjoy taking orders that challenges our beliefs and values as a firm					
OTD6: The most enjoyable orders are the ones that makes us think from different perspectives					
OTD7: We are comfortable taking orders that are intellectually challenging					
CROSS CULTURE					
CC1: Our managers encourage exchange of ideas with suppliers from different cultural settings.					
CC2: Our managers allow and accept feedbacks from different customers in cultural settings.					
STATEMENT	1	2	3	4	5
CC3: Our managers value the contribution of employees from different cultural settings					
CC4: Our managers pay critical attention to inter- cultural issues in the supply chain					

SECTION D: LEADERSHIP AND TRUST

Please indicate the extent to which you agree with the following statements:

1 = Strongly Disagree (SD) 2= Disagree (D) 3= Neither agree nor disagree (N) 4= Agree (A) 5= Strongly agree (SA)

Please circle (O) the most appropriate answer. Please select ONLY one answer from each statement,

STATEMENTS	1	2	3	4	5
LEADERSHIP					
TMS1: Our leaders offer innovation and continuous improvement policies.					
TMS2: Our leaders provide necessary resources for processes.					
TMS3: Our leaders encourage our trading partners' involvement in our firm's activities.					

TMS4: Our leaders participate in supply chain improvement process.					
STATEMENT	1	2	3	4	5
TMS5: Our leaders reviews supply chain issues in management meetings.					
TMS6: Our leaders take responsibility for operational performance in the supply systems.					
TRUST (TR)					
TR1: This supplier keeps promises it makes to our firm					
TR2: This supplier is not always honest with us					
TR3: We believe the information that this vendor provides us					
TR4: This supplier is genuinely concerned that our business succeeds					
TR5: When making important decisions, this supplier considers our welfare as well as its own					
TR6: We trust this supplier keeps our best interests in mind					
TR7: This supplier is trustworthy					
TR8: We find it necessary to be cautious with this supplier					

THANK YOU FOR YOUR ATTENTION