UNIVERSITY OF CAPE COAST

DRIVERS AND OUTCOMES OF SUPPLIER DEVELOPMENT AMONG MANUFACTURING FIRMS IN GHANA

BETINA OSEI AMANKWAH

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BY

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DECLARATION

Candidate's Declaration

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

Candidate's Signature…… Date ……...

Name: Betina Osei Amankwah

Supervisor's Declaration

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

Supervisor's Signature …… Date ……

Name: Dr Innocent Senyo Kwasi Acquah

ABSTRACT

The manufacturing sector has been identified as one of the sectors in Ghana that provides employment opportunities for thousands of people, and also makes significant contribution to the country's gross domestic product. Their operations and performance however, largely depend on suppliers who supply them with required inputs. Guided by the positivism philosophy, and underpinned by the network theory and resource-based theory, this study investigated the drivers of supplier development and its outcomes among manufacturing firms in Ghana, and how supplier development mediates the relationship. The study employed the quantitative approach and explanatory research design, and the stratified sampling technique was used to determine a sample size of 382 procurement managers of manufacturing firms in Ghana. Self-administered questionnaires were used for data collection and the response rate was 320, constituting 83.7% of the sample size. The Statistical Package for the Social Sciences version 26, and the SmartPLS 3 software were used for data processing, and the data analytical technique employed was the partial least square-structural equation modelling (PLS-SEM). The study found Top Management Support and Trust largely influence Buyer-Supplier Relationship and Sustainable Performance. Also, Supplier Development significantly affected Buyer-Supplier Relationship and Sustainable Performance, while Supplier Development significantly mediated the relationship between Supplier Development drivers and outcomes. The study concluded that drivers of supplier development, and supplier development are significant predictors of supplier development outcome, hence it recommended that managers and policy makers will make them a priority.

KEYWORDS

Buyer-Supplier Relationship

Manufacturing Firms

Supplier Development

Sustainable Performance

Top Management Support

Trust

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DEDICATION

To my lovely father, Mr Osei Amankwah

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS

SD	Supplier Development
TMS	Top Management Support
T	Trust
B-SR	Buyer-Supplier Relationship
SP	Sustainable Performance
OP	Operational Performance

CHAPTER ONE

INTRODUCTION

Competition among manufacturing firms has made it a necessity to prioritize quality of inputs such as raw materials to optimise product quality, gain competitive advantage and increase overall firm performance. Owing to this, manufacturing firms have recently become increasingly reliant on competent suppliers, and have further put mechanisms in place to increase the capabilities of such suppliers, an approach scholarly known as supplier development. Manufacturing firms in Ghana, has over the years taken keen interest in the supplier development strategy to enhance supplier competence, ensure smooth operations, and long-term survival. However, what remains unclear is whether the drivers of supplier development affect supplier development outcomes. Therefore, this study dwelt on the network theory and the resource base theory, to examine how the drivers of supplier development affects supplier development outcomes of manufacturing firms in Ghana.

Background of the Study

In recent years, businesses all over the world are prioritizing supplier development to gain competitive advantage (Liao, Hu & Ding, 2017). The reason being that, competitions in the business environment have shifted from the firm level to supply chain level (Gosling, Naim, Abouarghoub & Moone, 2015). Globally, the success of manufacturing companies is associated with their ability to obtain good supplies offer innovative and sustainable products in order to meet customer specifications and preferences (Ganji, Shah & Coutroubis, 2018). As a result, in order for firms to survive in the global

market, they must develop operational strategies notably supplier development that will allow them to compete effectively with other firms (Kivite, 2015).

Tukimin (2020) revealed that supplier development (SD) which emphasises collaboration or integration with suppliers seem to be one sure way of competing effectively to achieve set organisational goals. It is also a crucial dimension of sustainable supply chain management under three major perspectives: purchasing, corporate and national perspectives (Busse, Schleper, Niu & Wagner, 2016; Tseng, Lim & Wong, 2015). From the purchasing perspective, SD focuses on developing effective, reliable and competent suppliers (Zhang, Pawar & Bhardwaj, 2017). Taherdoost and Brard (2019) argue that focal firms can achieve supply objectives through SD which involves collaborative efforts between them and their suppliers. Paul, Semeijn and Ernstson (2010) similarly revealed that SD enables the focal firms to achieve their long-term strategic goals.

Supplier development describes focal firms' attempt to improve suppliers' capabilities and performance (Nagati, & Rebolledo, 2013). Traditionally, SD is centred on economic performance and capabilities related to cost, delivery, and quality (Sancha, Gimenez, Sierra & Kazeminia, 2015). However, due to globalisation, competitive market situations and changing consumer demands, performance criteria should be covered by economic, social, and environmental aspects during supplier selection (Modi & Mabert, 2007). Tukimin (2020) added that manufacturing firms can achieve SD if they consider strategic issues such as growing supplier performance, improving supply or product quality, reducing production cost and lead-times and developing new products.

Today, manufacturing firms depend on suppliers' efforts to gain competitive advantage (Schulz & Flanigan, 2016); but, developing suppliers could be very challenging since it involves commitment of funds, personnel and other resources by both parties (Paul, Semeijn & Ernstson, 2010). Manufacturing firms that emphasise SD have been found to be better performers amid enjoying competitive advantages. These firms also display strong connections with their suppliers which invariably promote a more collaborative buyer-supplier relationship. Dalvi and Kant (2015), therefore, revealed that developing suppliers' capabilities will not only benefit focal firms and their suppliers but an entire economy. As such, SD is a vital issue for firms that seek to achieve organisational targets while helping economies to grow.

In spite of the benefits accrued by both manufacturing firms and suppliers from SD, there are some "drivers or enablers" that have been found to influence the adoption of SD (Glavee- Geo, 2019; Yawar & Seuring, 2020). The "drivers", according to Yawar and Seuring (2020), refers to the practices or activities of firms which act as necessary catalysts for adopting specific strategies that are beneficial to both buyers and suppliers. These drivers specifically represent the conditions which may have to be met if SD is to occur (Busse & Wagner, 2016). With respect to this study, the drivers of SD comprise top management support (TMS) and trust between buyers and suppliers.

The study focused on these two key drivers (i.e., TMS and trust) given their relevance in SD. Glavee-Geo (2019), for instance, suggested that absence of trust between focal firms and suppliers would defeat the "supplier development" objective. Xu, Fernando and Tam (2019) similarly stressed that either one or both parties maybe unwilling to engage in SD if there is no or

little trust. Trust refers to the faith in the moral integrity of exchange partners which develops through business interactions and leads to inter-firm bonds based on shared goals (Xu et al., 2017). It is associated with integrity (consistency, principle, suitability); individual abilities (education, experience, expertise) and virtue (sincerity, loyalty, empathy) (Tarigan, Siagian, Sutjianto & Panjaitan, 2020). As such, with trust, both parties especially the focal firms, can freely commit resources into SD in order to attain positive outcomes.

Top management support (TMS), on the other hand, is a key element of quality partnership because it represents the firms' attitude towards relationships from internal perspectives (Stonkute & Vveinhardt, 2016). It describes the extent to which a firm's top management understands the relevance of a firm's activity and actively involves themselves in it. Top management are generally responsible for developing policies, strategic goals and guidelines as well as offering leadership, direction and allocating resources. Sheikh, Shahzad and Ku Ishak (2017) suggested that without the support and recognition of top management, lower-level managers may not have the capacity to collaborate and pursue sustainable and cost-oriented business activities like supplier development.

Some studies have asserted that TMS and trust play crucial roles in achieving SD outcomes notably buyer-supplier relationship (BSR) and sustainable performance (SP) (Muhamed, Salim, Ab Rahman, Hamzah & Ali, 2020; Sheikh et al., 2017). This assertion has been supported by the network theory which asserts that firms, in our modern business environment can never operate in isolation; thus, need to develop strong networks with external partners including suppliers to achieve better outcomes including BRS and SP.

The theory, therefore, recognises the influence of partner relationships on a firm's operational success (Halldórsson et al., 2007). The resource-based view expands the understanding of how firms use their internal resources with support from external parties to achieve competitive advantage over competitors (Machuki & Aosa, 2011; Thornhill & Amit, 2003).

According to Lee and Wu (2014), sustainable performance is the alignment of economic, environmental, and social goals in the delivery of core business activities by firms in order to maximize value. Busse, Wagner and Schleper (2016) revealed that focal firms' interests were traditionally related to the quality, price, delivery conditions and purchasing risks of purchased goods; however, sustainability-related conditions have now also become a key factor. Also, these firms' stakeholders including government, customers and advocates are putting considerable pressure on them to socially and environmentally manage their supply chains without compromising economic gains (Meixell & Luoma, 2015). Therefore, SD is considered as a powerful tool that buyers can use to attain sustainable performance while ensuring smooth buyer-supplier relationship building (Foerstl, Reuter, Hartmann & Blome, 2010).

The manufacturing industry accounts for a significant share of the industrial sector in both developed and developing countries (Burawat, 2016). The industry's major activity dwells on the conversion of raw materials into semi-finished and finished goods. The industry plays valuable roles in the development of both developed and developing economies like Ghana. In Ghana, for instance, it averagely contributes about 5% and 8% to gross domestic product and total jobs created respectively (Ghana Statistical Service

[GSS], 2020). This industry accounts for over 40% of Ghana's industrial sector (GSS, 2020); thus, its persistent performance challenges could threaten the sector and entire economy's survival and development.

Arguably, the manufacturing industry can enjoy consistent performance outcomes and attract more investments if focal firms embrace and invest in SD. This is because, previous studies have revealed that supplier development plays a crucial role in improving firms' performance. However, it remains unclear whether same can be said of manufacturing firms in Ghana. More precisely, more investigation is required to determine whether drivers of SD comprising trust and TMS play significant roles in achieving SD outcomes in areas of BSR and SP. As such, conducting a study of this nature would induce focal firms to pay maximum attention to developing the SD drivers in order to enjoy competitive advantages. It is, therefore, against this background that the study examines the effect of SD drivers on SD outcomes; focusing on manufacturing firms in Ghana.

Statement of the Problem

Suppliers play critical role in the survival of manufacturing firms (Marinagi, Trivellas & Reklitis, 2015; Ghobakhloo & Fathi, 2019). Without their inputs in the form of raw materials, tools, equipment and support services, buying firms, most especially manufacturing firms, may not continuously stay in business (Caridi, Moretto, Perego & Tumino, 2014; Casadesus-Masanell & Heilbron, 2015). The manufacturing sector as mentioned earlier is one of the most important sectors of the economy (Cantore, Clara, Lavopa & Soare, 2017). According to Ghana Statistical Service (GSS, 2018), this sector

contributed GHS20.5bn ($4.4bn) in 2015, GHS23.9bn ($5.2bn) in 2016 and GHS28bn ($6.1bn) to GDP in 2017, which shows an upward trend.

Although the manufacturing industry contributes marginally to economic development via job creation, revenue generation and innovation, its contribution to emerging economies notably Ghana have been inconsistent (World Bank, 2020). In July 2019, for instance, Ghana's manufacturing industry contributed GHS4.7 billion to GDP which fell to GHS3.8 billion in Jan 2020 (Trading Economics, 2022). Also, the industry's contribution increased to GHS4.8 billion in January 2021; fell again to GHS4.3 billion in July 2021 while increasing to GHS5.3 billion in Jan 2022 (Trading Economics, 2022). These statistics clearly highlights inconsistences in the industry's performance which require urgent attention to protect it from total failure.

In spite of the enormous benefits of manufacturing firms, they are considered to be the highest contributor (i.e., about 60%) of greenhouse emissions in Ghana (United Nations Environment Program (UNEP), 2020). Also, these firms' activities pose danger to the environment and its inhabitants due to excessive wastages, poor waste disposal and pollution in diverse forms (i.e., air, land, water). This situation continues to affect the financial resources of the country as millions of public funds are spent annually on waste management and other associated issues such as flooding. According to Amoako-Gyampah et al. (2019), Ghanaian manufacturing firms would continue to operate unsustainably if they fail to build stronger and long-lasting relationships with their suppliers.

Amoako-Gyampah et al. (2019) added that suppliers, as upstream supply chain actors, provide manufacturing firms with the needed input; thus,

if they continue to provide obsolete or poor materials and equipment, it would push the focal firms to operate unsustainably. Afum et al. (2020) similarly stressed that manufacturing firms continue to face huge performance challenges because they struggle to hold on to their suppliers as a result of poor relationship with them. Nyaga, Whipple and Lynch (2016) suggested that since manufacturing firms spend huge sum of money in regularly sourcing for new suppliers, hence, it is appropriate to invest in the highly performing ones in order to ensure stronger supplier development outcomes in areas of buyer-supplier relationships and sustainable performance.

Humphreys (2004) discovered three element of SD outcomes to include buyer competitive advantage, supplier performance and buyer-supplier relationship improvement. These outcomes have been explored by Humphreys, Li and Chan (2004), Routroy and Pradhan (2013) and Yawar and Seuring (2020). Given recent calls for firms to attain sustainability, this study includes sustainable performance (SP) as an SD outcome. Also, the study adopts buyer-supplier relationship (B-SR) as its other SD outcome because developing suppliers is primarily linked with achieving this outcome. More precisely, suppliers can never be developed if its outcome does not lead to stronger buyer-supplier relationships. However, SP and B-SR as outcome variables in this study have not been well explored in literature especially within the context of manufacturing firms in Ghana.

Moreover, previous studies have offered five key enablers of SD to comprise trust, information sharing, communication, top management support and commitment (Carr & Kaynak, 2007; Modi & Mabert, 2007; Ghijsen et al., 2010; Yawar & Seuring, 2020). However, this study emphasises on two of the

drivers comprising trust and top management support due to the crucial roles they play in supplier development. Lo, Zhang, Wang and Zhao (2018), for instance, revealed that when managers in top positions are unwilling to provide support services like financial assistance, training, incentives, technological innovation and environmental assistance to their suppliers, the concept of supplier development could be defeated.

Moreover, researchers have revealed that manufacturing firms in developed economies unlike those in the developing ones continue to remain competitive and enjoy positive outcomes due to their focus on supplier development built on trust and TMS (Dalvi & Kant, 2018; Sancha, Longoni & Gimenez, 2015). Narasimhan et al. (2008) argued that absence of trust among buyers and suppliers could affect their relationships and the former's goal of attaining sustainable performance. Yawar and Seuring (2020) also indicated that, trust building among buyers and suppliers are key to attaining SD outcomes (B-SR, SP); hence, their absence could pose severe threats to those outcomes.

These assertions could arguably be linked to Ghana's manufacturing industry which is dominated by poor supplier development. Amoako-Gyampah et al. (2019), for instance, stressed that much attention has not been dedicated to supplier development in Ghana's manufacturing industry despite its being the best way to enhance relationships with suppliers and improve sustainable performance. Oduro, Nyarko and Gbadeyan (2020) also revealed that manufacturing firms in Ghana lose numerous suppliers every year as a result of their unwillingness to share certain information with them. This situation clearly poses trust concerns; thereby, impeding their relationships and

associated SP outcome. Arguably, Ghana's manufacturing firms' ability to attain SP in areas of economic, social and environmental is largely dependent on their ability to trust their suppliers, share valuable information without compromising top management support.

Also, most manufacturing firms in Ghana do not realise the need to pursue SD via trust and TMS in order to build stronger relationships with suppliers and even attain sustainable performance during uncertain times (Appiah et al., 2018; Rodríguez, Thomsen, Arenas & Pagell, 2016; Amege & Hanu, 2018). Existing studies which have been conducted within the manufacturing industry have largely looked at trust and SD on operational performance (OP) (Nagati & Rebolledo, 2013; Kivite, 2015). More recently, Yawar and Seuring (2020) focused on the linkage between SD initiatives, enablers and performance outcome within the context of empirical reviews. More precisely, their study obtained their findings by gathering data from related studies; hence, had no human involvement (i.e., via questionnaire), as is the case of this present study.

Also, existing studies have largely focused on the composite of supplier development and its effect on firm performance (O'Connor et al., 2020; Khan & Siddiqui, 2018; Khan, Liang & Sumaira, 2015) without delving much into the drivers influencing the adoption of SD and how they individually affect SD outcomes in areas of B-SR and SP. More precisely, there is paucity of research on drivers of SD and SD outcomes with SD playing a mediating role. To address this literature gap, there is an urgent need to investigate how key drivers such as trust and TMS affect SD outcomes comprising SP and B-SR within the manufacturing industry of Ghana. The study also examines the

mediating role of SD in the relationship using the structural equation modelling approach. This study is, therefore, expected to contribute to existing knowledge on SD drivers and outcomes.

Purpose of the Study

The purpose of the study was to examine the drivers and outcomes of supplier development among manufacturing firms in Ghana.

Research Objectives

Specifically, the following key objectives were developed to:

1. examine the effect of top management support and trust on supplier development of manufacturing firms in Ghana
2. evaluate the effect of top management support and trust on buyer-supplier relationship of manufacturing firms in Ghana
3. assess the effect of top management support and trust on sustainable performance of manufacturing firms in Ghana
4. investigate the effect of supplier development on buyer-supplier relationship and sustainable performance of manufacturing firms in Ghana
5. ascertain the mediating effect of supplier development on the relationship between (a) top management support and (b) trust and buyer-supplier relationship of manufacturing firms in Ghana
6. analyse the mediating effect of supplier development on the relationship between (a) top management support and (b) trust and sustainable performance of manufacturing firms in Ghana.

Research Hypotheses

Based on literature review, the study was guided by the following research hypotheses.

H_{1a}: Top management support has a significant positive effect on supplier development

H_{1b}: Trust has a significant positive effect on supplier development

H_{2a}: Top management support has a significant positive effect on buyer-supplier relationship

H_{2b}: Trust has a significant positive effect on buyer-supplier relationship

H_{3a}: Top management support has a significant positive effect on sustainable performance

H_{3b}: Trust has a significant positive effect on sustainable performance

H_{4a}: Supplier development has a significant positive effect on buyer-supplier relationship

H_{4b}: Supplier development has a significant positive effect on sustainable performance

H_{5a}: Supplier development significantly mediates the relationship between top management support and buyer-supplier relationship

H_{5b}: Supplier development significantly mediates the relationship between trust and buyer-supplier relationship

H_{6a}: Supplier development significantly mediates the relationship between top management support and sustainable performance

H_{6b}: Supplier development significantly mediates the relationship between trust and sustainable performance

Significance of the Study

The study's findings would have significant implications on policymakers, management of manufacturing firms and researchers. It would also help shape policy makers decisions on how top management support and trust can influence supplier development to achieve sustainable performance and ensure better buyer-supplier relationships. The manufacturing sector has been identified as one of the active sectors in Ghana as it provides employment opportunities for thousands of people and also makes significant contribution to the country's GDP. Firstly, the study would help inform management of manufacturing enterprises about the importance of developing suppliers and how it can be undertaken to achieve sustainable performance without impeding buyer-supplier relationship building. The findings would also help to inform manufacturing enterprises that have not ascribed to supplier development practices to do so.

Furthermore, study's findings would be beneficial to academia such as students and researchers by offering them relevant insight into how the drivers of SD which comprises of trust and top management support can influence buyer-supplier supplier relationship and sustainable performance within the context of manufacturing firms. The study would also by way of recommendations furnish scholars with literature gaps that would necessitate future research. As a result, the study would contribute to the debate by determining the extent to which the current findings confirm or contradict previous findings on the effect of top management support and trust on buyer-supplier relationship and sustainable performance.

Delimitations of Study

The study was delimited to manufacturing firms operating in a developing economy like Ghana. By virtue of the specific objectives of the study, the quantitative research approach was adopted; hence, the adoption of explanatory research design. In view of this, the study was delimited to only manufacturing firms in Ghana while relying on data obtained from key personnel of these firms. Also, the study dwells on the population of manufacturing enterprises in Ghana from the database from Ghana Statistical Service. As such, manufacturing firms with details excluded from the lists obtained were not involved in the study. Also, the study employs the primary data source and as such made use of the questionnaire. The study also focused on only supplier development, sustainable performance, buyer-supplier relationships, top management support, and trust because of the objectives and environmental context of the study. Finally, the study employed the Structural Equation Modelling approach; thereby, excluding other analytical tools such as multiple linear regression.

Limitations of the Study

Despite the relevance of the study, its outcomes were too broad and this is because, the study focused on the composite of manufacturing firms in Ghana. As such, restricting the study's findings to a particular class of the manufacturing industry (i.e., food and beverage, chemical/pharmaceutical, water processing, metal/aluminium smelters, etc) would be misleading. Also, the study focused on managers of the manufacturing firms; as such, generalising findings to include the firms' customers would be unacceptable. Finally, the study forms part of academic requirement, thus, there was a deadline for its

submission. This means that the research could only cover issues that the researcher thought could be completed within the stipulated time frame.

Definition of Terms

The operational definitions of the variables and other key terms employed in this study are given below.

Trust: is the faith in the moral integrity of exchange partners, which is developed through business interactions and leads to inter organisational bonds in terms of com-mon goals, sentiments and relationships in the face of un-certainty (Lo, Zhang, Wang & Zhao, 2018)

Supplier development: implies the activities undertaken by buying firms in their effort to improve supplier capabilities and performance to meet buying firms short- and long-term needs (Al-Doori, 2019; Okon, 2018)

Buyer-supplier Relationship: is a long-term strategic partnership that embraces closer collaboration between the supplier and the buyer to achieve long term goals (Sillanpää & Sil-lanpää, 2015)

Sustainable Performance: refers to the process of ascertaining the social well-being, which includes meeting and satisfying basic human needs and guaranteeing that, environmental renewable and non-renewable resources are well-looked-after to make available for and support people in the future (Poltronieri, Ganga & Gerolamo, 2019; Gong, Simpson, Koh & Tan, 2018)

Top Management Support: is considered as a key element of partnership because it represents firms' top-level managers' attitude towards the relationship between the parties from internal perspective (Stonkutė, 2016).

Organisation of the Study

This study was divided into five chapters where Chapter One presented the background of the study, statement of the problem, research objectives, research hypotheses, significance, delimitations, limitation as well as organisation of the study. Chapter Two focused on literature review where theoretical, conceptual and empirical reviews were presented. The chapter concluded with a conceptual framework for the study. Chapter three presented the methods of this study and presented relevant issues such as research philosophy, approach, design, population, sampling procedure, data collection instrument as well as data processing and analysis. Chapter four focused on the results and discussion while Chapter Five focused on the summary of findings, conclusion and recommendations.

Chapter Summary

This chapter presented the problem under study and also described the context within which it occurs. The section also pointed out existing knowledge gaps and how important the study is for manufacturing firms. The purpose of the study and the specific research hypotheses and objectives were also highlighted. The chapter showed the methodological weakness of the research and how the research is organized.

CHAPTER TWO

LITERATURE REVIEW

Introduction

The study seeks to examine the drivers and outcomes of supplier development among manufacturing firms in Ghana. This section discusses the theoretical, empirical and conceptual reviews including conceptual framework that set this study into perspective. The theoretical review looks at the theories that best explain the drivers and outcomes of supplier development while the empirical review extensively discusses what other scholars have done with regard to this subject matter. Finally, the conceptual framework presents the pictorial view of the study's hypotheses.

Theoretical Review

A theory is a set of interrelated concepts, definitions and suggestions that are advanced to explain and predict a phenomenon (McIntyre, Francis, Gould & Lorencatto, 2020). Given the nature of this study, the resource-based view theory and network theory were adopted.

Network Theory

The network theory (NT) was established by Jacob Mereno in 1930 to provide a broader view of the inter-organisational interactions in a network environment (Li, Yang, Zhang & Liu, 2020). The theory highlights the dynamics of network environments and recognises the influence of partner relationships on an organisation's operations (Halldórsson et al., 2007). By emphasising the notion of strong or weak ties, the NT states that a network is a resource that assists managers to develop more realistic assessment of

individual node resources and their implications for business. It specifically suggests that when networks are established, focal firms are able to obtain relevant and adequate resources to remain competitive.

Fawcett, Allred, Magnan & Ogden, 2009) suggests that resource accession and coordination are considered as key triggers for inter-organisational connectedness, and are advocated to be embraced in today's turbulent business environment. It is important to note that the network theory pays significant attention to the fit between focal firms and their networks or partners (Halldórsson et al., 2007). This necessitates the alignment between the actors, activities and resources that constitute key network components (Håkansson, 1987; Harland, 1996). The theory is useful for investigating trust and longevity in bilateral relationships (Gadde & Håkansson, 2001). By taking a network approach, organisations can design their supply chains in order to benefit from access valuable resources and share responsibilities and risk.

Miles and Snow (2007) suggested that the relevance of the network theory is its usefulness for supply chain innovation by demonstrating network-wide knowledge-sharing mechanisms and management. The theory also suggests that focal firms can develop strong ties with their partners when they emphasise on trust. It argues that networks can never be properly built in the absence of trust. As such, if focal firms aim at developing their networks including suppliers to benefit from them, there is a need to emphasise on trust. Chang & Hughes (2012) added that top management of the focal firms also need to be actively involved in developing their networks; because, they have the authority to allocate resources, provide relevant policies and corporate strategies.

In relation to the study, the network theory argues that focal firms and their supply chain actors need to develop strong ties or networks among them in order to enjoy competitive advantages. It specifically suggests that manufacturing firms can never operate in isolation given the increased level of competitions in the industry. The theory also suggests that the networks can never be developed between the manufacturing firms and their actors (i.e., suppliers) in the absence trust and top management support. Thus, these enablers act as basis for developing suppliers in the manufacturing industry. Therefore, in order to achieve sustainable performance as well as strengthen relationships between focal firms and their suppliers, emphasis should be given to trust and top management support in supplier development.

Resource Based Theory

The resource-based theory (RBT) emanated from a study by Penrose in 1959 to explain how the unique deployment and combination (referred to as 'capabilities') of tangible and intangible resources might assist organisations to achieve a sustainable competitive advantage (Grant, Review & Berkeley, 1991; Penrose, 1959). While the early work of Penrose (1959) viewed firms as a bundle of idiosyncratic resources, developments on the RBT have directed attention towards the nature of resources and their positioning (Priem & Swink, 2012; Shet, 2020) that might create barriers and economic rents for competitors (Lavie, 2006). In this regard, Barney (1991) identified value, rarity, imperfect imitability and substitutability as essential characteristics of resources to generate barriers and advance competitive advantage.

As highlighted by Lavie (2006), traditional RBT assumed that ownership and control of resources are the sole domain of the organisation. This

contrasts with the premises of outsourcing, purchasing or supply management, in which taking advantage of partners' capabilities to compensate for internal competency impairment or to focus on core competencies is crucial. Hence, the 'proprietary resource' assumption of traditional RBT might hinder its application to collaborative arrangements in which shared and non-shared resources are managed to build competitive advantage (Lavie, 2006). However, in its reformulated rendition (e.g., Lavie, 2006), RBT considers a network resource notion to use its explanatory power in supply chain environments.

Applications of RBT in SCM are mainly focused on structural analysis (de Oliveira Wilk & Fensterseifer, 2003; Miller & Ross, 2003) and identification of the antecedents for competitive advantage in the supply chain (Barratt & Oke, 2007; Lewis, 2000; Pandza, Horsburgh, Gorton & Polajnar, 2003; Pandza, Polajnar, Buchmeister & Thorpe, 2003; Pearson, Masson & Swain, 2010). Halldórsson et al. (2007) maintained that the majority of SCM decisions are underpinned by RBV, at least implicitly. In order to respond to uncertainties and changes, organisations form inter-organisational arrangements to enjoy resource-position barriers built through collaborative efforts. This is particularly true in situations where scarce resources or intense competition make organisations realise that relying only on internal resources is insufficient to secure competitive advantage (Jap, 2001).

In relation to the study, the theory suggests that manufacturing firms can never rely on only their internal resources to achieve set goals; thus, emphasising the need to collaborate with external actors in order to obtain the necessary resources to achieve competitive advantages. The theory specifically suggests that manufacturing firms can become competitive if they collaborate

effectively with external actors notably supplier to obtain adequate and scarce resources. During collaboration, the supply chain actors notably manufacturing firms and their suppliers need to emphasise trust in order to exchange valuable information, funds and materials. Also, the collaboration via supplier development need to receive top management support in order to achieve sustainable performance as well as build stronger relationships.

Conceptual Review

This section reviewed relevant concepts with respect to trust, top management support, supplier development, buyer-supplier relationship and sustainable performance.

Overview of Supplier Development

Supplier development (SD) is the contractual agreement between focal firms and selected suppliers in sharing and developing resources, information and risk (Martínez-Jurado & Moyano-Fuentes, 2014). The contractual agreement allows focal firms to develop the suppliers' capabilities in order to achieve set targets (Tarigan, Siagian, Panjaitan & Sutjianto, 2020). Lawson, Krause and Potter (2015) noted that there is no single approach to SD but it is generally acceptable that it can be undertaken at three levels (i.e., basic, moderate and advance levels) according to the level of firm involvement and implementation complexity (skill, time, and resources required to execute successfully a particular activity). Al-Doori (2019) stressed that SD should lead to improvement in the total added value from suppliers in terms of quality of product or service offered, business processes and overall performance of focal firms.

Anand and Grover (2015) stated that supplier development is normally undertaken with existing suppliers that can be, and agree to being, improved. Suppliers can be categorised in respect of SD in three ways: being developed, on hold as a potential for development or identified as not being worth the investment of development Olapoju, 2019; Yegon, Kosgei & Lagat, 2015). Supplier development refers to the development of the supply base by creating new sources of supply (Quynh & Huy, 2018). Prior to SD, supplier evaluation is used for two purposes: as a tool to decide if a vendor is qualified to supply products that meet the customer's quality standard; and to create competition between suppliers, especially with regard to price (Afande, Ratemo & Nyaribo, 2015).

Also, SD consists of supplier training programme, supplier evaluation and assessment, supplier certification/qualification, provision of financial support, supplier audits, and providing incentives and recognition (Okon, 2018). Sundram, Chandran, and Bhatti (2016) claims that direct involvement as a factor of supplier development consist of a set of practices such as: formal supplier evaluation, certification, recognition, informal supplier evaluation, supplier site visits, training, and buyer sites and facilities visits, as well as verbal or written demand for performance improvement. This set of practices composing direct involvement indicates a multidimensional nature of SD.

In this current study, the broad perspective of SD is used; that is, SD is defined as activities undertaken by buying firms in their effort to improve supplier capabilities and/or performance to meet the customer firm's short and/or long-term supply needs (Al-Doori, 2019; Okon, 2018; Mose, 2015; Amue & Ozuru, 2014). However, SD may be perceived as an external

accessible resource that may help the supplier to gain competitive advantage (Foerstl et al., 2010). Therefore, from the supplier perspective, the supplier's participation in SD is not only intended to meet the buying firm's short and/or long-term supply needs, but also is a form of relation-specific investment that is being used to improve the supplier's competitive advantage or performance.

Drivers of Supplier Development

Drivers also known as enablers of supplier development (SD) are the factors that make SD possible (Pradhan & Routroy, 2018). This study emphasised two key drivers of SD comprising: trust and top management support (Pradhan et al., 2018; Stonkutė et al., 2016)).

Top Management Support

The planning and implementation of business activities are often determined by the top managers in a firm ((Stonkutė et al., 2016). Top management is a key driver in initiating an SD program based on the firm's competitive strategy. Purchasing management needs the encouragement and support from top management to expend their resources within a supplier's operation (Li, Humphreys, Yeung & Cheng, 2012). Top management support is also identified as one key element of partnership quality because it represents firms' attitudes toward the relationship from the internal perspective (Stonkutė et al., 2016).

Without top management support and recognition, members of the firm are not willing to pursue sustainable business activities that require time, effort, and resources. When establishing relationships with suppliers, top managers must first recognize what this relationship means in terms of the supply chain.

For strategic purposes, top managers also need to select appropriate suppliers from the firms' viewpoint and, in turn, reach agreement with the suppliers' top managers. This is fundamental to the success of the collaboration (de Waal & Heijtel, 2017). Top management support grounds relationship quality from the focal firm's internal perspective.

Trust

Trust is mandatory criteria among supply chain partners to achieve full collaboration in ensuring visibility and responsiveness in value chain (Pradhan & Routroy, 2018; Wu, Yue, Jin, & Yen, 2016). Trust is defined as, "having faith in the moral integrity of exchange partners, which is developed through business interactions and leads to inter-organisational bonds in terms of common goals, sentiments, and relationships in the face of uncertainty" (Lo, Zhang, Wang & Zhao, 2018). Hoejmose, Brammer and Millington (2012) revealed that trust represents a significant inter-organisational resource that encourages sustainability, creates stable relationships, and facilitates investment, collaboration, and a common vision for firms that pursue environmentally friendly supply chains.

With trust, firms have greater willingness to rely on the other party when doing so involves risk (McCutcheon & Stuart, 2000). More specifically, with trust, firms are able to collaborate with partners even if this collaboration may result in difficulties. Trust also leads both parties to common attitudes and behaviours in the face of operational challenges, which in turn leads to the exchange of information and resource sharing (Kulangara, Jackson & Prater, 2016; Park et al., 2017). Trust does not only improve visibility but also reduces uncertainty (Blome, Hollos & Paulraj, 2014). It also acts as a catalyst to provide

stability as well as performance benchmarking (Wu et al., 2016). Pradhan et al (2018) further suggest that trust drives information sharing between organisation and their suppliers and this is essential in achieving mass customisation which is a recent trend of operation management.

Supplier Development Outcome

Supplier development outcome represents the consequences or results of developing suppliers. Generally, when organisations invest their resources into a strategic activity such as supplier development, they expect to achieve some results. In relation to SD, these results are known as the "SD outcome". With respect to the study, much attention was given to buyer-supplier relationship (B-SR) and sustainable performance (SP) as the SD outcome.

Buyer-Supplier Relationship

Buyer-supplier relationship (B-SR) is a long-term strategic partnership that embraces closer collaboration between the focal firm and suppliers to achieve long term goals (Sillanpää & Sillanpää, 2015). According to Lambert (2006) B-SR is an inclusive approach that defines how a focal firm relate with their key suppliers and customers. Sundram, Chhetri & Bahrin (2020) stressed that B-SR is a collaborative partnership between focal firms and their supplies which allow the former to manage the relationship for the required resources including goods and services. Newell, Ellegaard and Esbjerg, (2019), further suggested that valuable outcomes are desired from relationships, so focal firms must concentrate on how best those outcomes can be realised.

Addae (2015) suggested that B-SR is about categorising the supply markets, selecting those that meet the focal firm's expectations and committing

resources into establishing relationships with them. Ross, Kuzu and Li (2016) also emphasised that B-SR is about developing the selected suppliers to enable them perform what acceptable levels. Dave, Frerichs, Jones, Kim, Schaal, Vassar and Corbie- Smith (2018) explained that a successful relationship program will often depend on the trust levels between the partners. A firm will forge close relationships with a subset of its suppliers, and manage arm-length relationships with them. Product and Service Agreements (PSA) will also determine the level of the relationship through negotiations.

Studies within the fields of supply chain management, marketing and international management all highlight the need of buyer-supplier relationship; terming it as 'economics boosters' (Nagurney, 2010). De Lurdes Veludo and Macbeth (2006) also notes that relationship is a way of bettering the firm's success and performance. To determine which suppliers are suitable for developing, a number of methodologies such as portfolio analysis could be used to give consideration on whom to develop. Dasci and Guler (2019) suggests that a reasonable way to begin would be to identify those products, goods and services which are procured from critical and strategic suppliers and to decide how these should be improved.

Sustainable Performance

Sustainable performance (SP) refers to the process of ascertaining the social well-being, which includes meeting and satisfying basic human needs (Kamble, Gunasekaran & Gawankar, 2020) and guaranteeing that, environmental renewable and non-renewable resources are well-looked-after to make available for and support people in the future (Poltronieri, Ganga & Gerolamo, 2019; Gong, Simpson, Koh & Tan, 2018). It can broadly be

classified into economic, environmental, and social performance (San Ong, Magsi & Burgess 2019; Hong, Zhang & Ding 2018; Zaid, Jaaron & Bon, 2018). SP has developed exponentially, hence it's widely consideration in the supply chain management area (De Nadae, Carvalho & Vieira, 2019; Repar, Jan, Nemecek, Dux & Doluschitz, 2018).

Numerous firms coordinate sustainability in their operations as a result of increasing awareness of the public, government strict regulatory requirements, and market pressure (Bai, Kusi-Sarpong & Sarkis, 2017; Kusi-Sarpong, Sarkis & Wang, 2016). Achieving SP, requires all-inclusive past views of stakeholders that, manufacturing firms should include supplier development in their supply chain activities (Kamble, Gunasekaran & Gawankar, 2020; Yusliza, Yong, Tanveer, Ramayah, Faezah & Muhammad, 2020; Shahzad, Qu, Zafar, Rehman & Islam, 2020). Table 1 presented the summary of the key definitions of the various constructs:

Table 1: Summary of Definitions and Sources

Con-struct	Meaning(s) of construct	Source
Trust	Trust is defined as faith in the moral integrity of exchange part-ners, which is developed through business interactions and leads to inter organisational bonds in terms of common goals, sentiments and relationships in the face of uncertainty	Lo, Zhang, Wang & Zhao, 2018
	Trust also represents a significant inter-organisational resource that encourages sustainability, creates stable relationships, and facilitates investment, collaboration, and a common vision for firms that pursue environmentally friendly supply chains	Hoejmose et al. 2012
	Trust also acts as catalyst to provide stability as well as perfor-mance benchmarking.	
	Trust is mandatory criteria among supply chain partners to achieve full collaboration in ensuring visibility and respon-siveness in value chain	Pradhan & Routroy, 2018

Top Management Support	Top management support is considered as a key element of partnership because it represents firms' attitude towards the relationship between the parties from internal perspective	Stonkutė, 2016
	Top management is also considered as a key driver in initiating a supplier development program	Li et al. 2012
Supplier Development	In the narrow perspective, supplier development refers to the development of the supply base by creating new sources of supply.	Quynh & Huy, 2018
	Supplier development also leads to improvement in the total added value from the supplier in question in terms of quality of product or service offered, business processes and performance, improvements in lead times and delivery to overall performance of the buying firm.	Ağan, Kuzey, Acar, & Açıkgöz, 2016
	In the broader perspective supplier development is defined as activities undertaken by buying firms in their effort to improve supplier capabilities and performance to meet buying firms short- and long-term needs	Al-Doori, 2019; Okon, 2018; Mose, 2015; Amue & Ozuru, 2014
	Supplier development may be perceived as an external accessible resource that may help the supplier to gain competitive advantage	Reuter, Foerstl, Hartmann & Blome, 2010
Buyer-Supplier Relationship	Relationship is an inclusive approach that defines how a company relates with its suppliers and customers.	Lambert 2006
	relationship is a way of bettering the firm's success and performance.	De Veludo and Macbeth (2006)
	Relationship is a collaborative partnership with the supplier which allows the buyer to manage the relationship for the required goods and services.	Global Intelligence Network 2013
	Relationship is a long-term strategic partnership that embraces closer collaboration between the supplier and the buyer to achieve long term goals	Sillanpää & Sillanpää, 2015
Sustainable Performance	Sustainable performance refers to the process of ascertaining the social well-being, which includes meeting and satisfying basic human needs and guaranteeing that, environmental renewable and non-renewable resources are well-looked-after to make available for and support people in the future	Poltronieri, Ganga & Gerolamo, 2019; Gong, Simpson, Koh & Tan, 2018

Source: Field data (2021)

Empirical Review

This section extensively reviews related literature on supplier development drivers and supplier development outcome in line with the study's objectives. As such, the reviews were aimed at developing the study's hypotheses.

Top Management Support, Trust and Supplier Development

This section established the influence of (a) top management support (TMS) and (b) trust and supplier development (SD) as found in existing literature (Dubey, Gunasekaran, Childe, Papadopoulos, & Helo, 2018; Lo, Zhang, Wang, & Zhao, 2018) . Lo et al. (2018), for instance, revealed that focal firms can effectively develop their suppliers when they have the back of their top management in areas of decision making, resource allocation, supplier management and risk management. The researchers concluded that top management of focal firms are responsible for developing firm-level policies, strategies as well as offering leadership and direction to attain operational successes; thus, their unflinching support for corporate activities including supplier development is crucial.

Dubey et al. (2018) similarly stressed that when top management supports the strategic activities of their firms, it plays a valuable role in effectively developing suppliers. They added that when top managers support the upgrade of supplier relationships into supplier development, its achievement is faster. According to Yawar and Seuring (2018), top management ensures that authorities and responsibilities for achieving firms' activities are met; as such, their commitment to SD initiative would make it attainable. Mandal (2020) concluded that top managers commitment and

support are directly related with a firm's operational success which includes supplier development. These reviews indicate that TMS could directly lead to SD of manufacturing firms in Ghana. In view of this, the study proposed that:

Also, trust among partners has been linked with supplier development (SD). According to Tarigan, Siagian, Panjaitan and Sutjiant (2020), the presence of trust in relationship building is key to strengthening it and consequently developing it. This is because, when partners trust each other, they willingly exchange valuable resources, share information and trade secrets which are crucial elements in supplier development. Mallet, Kwateng and Nuertey (2021) revealed that trust significantly moderates the relationship between supplier-buyer relationship and supply chain sustainability. They concluded that when buyers and suppliers in a relationship trust each other, they are able to attain sustainable supply chains. In the presence of trust, relationships become stronger and last longer than when there is no trust in such relationships.

Also, developing suppliers is an expensive initiative, as such, if one actor or both fails to exhibit trust, this initiative would never be met and even add to operational costs (Benton-Jr, Prahinski & Fan, 2020). Ariesty (2016) similarly stressed that focal firms need to emphasis trust building before investing in any supplier development initiative. The study concluded that if focal firms fail to build stronger trust levels, the supplier development initiative would fail and consequently add to costs other than income.

A similar assertion was made by Rajput (2019) when they investigated the effect of supplier development on supplier performance. The study specifically highlighted the need for focal firms to trust their suppliers before and when engaging in supplier development practices. Dalvi and Kant (2018)

similarly concluded that when there are higher levels of trust between buyers and suppliers, achieving mutual goals including supplier development is attainable in both short and long terms. It could, therefore, be argued that manufacturing firms that emphasis trust building when engaging in supplier development initiative can be able to achieve it. In view of this, the study hypothesised that:

H1a: Top management support has a significant positive effect on supplier development

H1b: Trust has a significant positive effect on supplier development

Top Management Support, Trust and Buyer-Supplier Relationship

This section reviewed literature in relation to (a) top management support (TMS) and (b) trust and buyer-supplier relationship (B-SR). TMS, for instance, has generally been considered among the key factors of supplier development given the tremendous roles of top management in any organisational setting. Top managers are key decision makers who are predominantly aware of a firm's strategic plans to stay competitive. As such, their support or direct involvement in firms' corporate activities including supplier development is key to achieving associated goals or outcomes such as B-SR and SP. Top managers are needed in SD to make valuable decisions and also allocate resources for such activity.

More precisely, focal firms can build stronger relationships with their suppliers if their top managers are actively involved in SD. Young and Jordan (2008) stressed that effective B-SR is the one that has top management approval, support and blessing. They concluded that when top managers are willingly involved in a firm's project including SD, they are able to provide relevant

policies that make such project attainable. As such, the more focal firms are actively supported by top managers during SD, the higher or stronger the relationships with their suppliers. Seppanen et al. (2007) also revealed that top management involvement or participation in business activities like SD is crucial to attaining stronger relationships. They concluded that poor TMS leads to poor access to resources, lack of corporate policies and lack of investment in suppliers which could consequently impede B-SR.

Also, the relationship trust and B-SR has not garnered the needed attention. However, limited literature (Abdullah & Musa, 2014; Stuart, Verville & Taskin, 2012; Villena, Revilla & Choi, 2011) has revealed that the presence of trust in SD could lead to positive outcomes in areas of B-SR. Villena et al. (2011), for instance, revealed that trust is an essential element that is needed to attain the benefits accrued in having collaborative relationships with suppliers. They stressed that trust in a collaborative relationship ensures that both parties do not act opportunistically nor exploit each other. Abdullah et al. (2014) also stressed that trust which emphasises on believing in each other's capabilities is crucial for relationship building between buyers and suppliers.

According to Charterina, Basterretxea and Landeta (2015), when buyers and suppliers have outmost trust in each other, they are able to willingly exchange resources including valuable information in order to achieve stronger and long-lasting relationships. Also, in the presence of trust, buyers or focal firms can rely on their supplier's process capability, quality management while assuming that incoming supplies are defect free; thereby, strengthening. Stuart et al. (2012) suggested that focal firms would willingly invest huge resources

and other commitments in their suppliers given to the presence of trust which could be crucial to B-SR building.

H2a: Top management support has a significant positive effect on buyer-supplier relationship

H2b: Trust has a significant positive effect on buyer-supplier relationship

Top Management Support, Trust and Sustainable Performance

This section reviewed literature in relation to (a) top management support (TMS) and (b) trust and sustainable performance (SP). In relation to TMS, it has largely been considered among the key drivers of supplier development which plays a crucial role in ensuring that firms are able to attain sustainable performance outcome. For instance, when top managers are in support of their firms' need to attain sustainable performance, they tend to invest heavily into its attainment. Hence, focal firms can achieve sustainable performance in areas of economic, social and environmental if they have the total support of their top management (Kiesnere & Baumgartner, 2019; Ilyas & Wiwattanakornwong, 2020; Siagian, 2021).

Kiesnere et al. (2019) specifically concluded that top managers do not only design incentives and allocate resources to execute sustainability initiatives but they also have strong influence on organisational decision-making processes which are crucial to attaining stronger economic, social and environmental outcomes. Ilyas (2020) similarly stressed that firms can only attain their sustainable development goals if they have maximum support from their top management. It could be argued that absence of TMS in SD activities within manufacturing firms could impede quality decision-making and resource

allocation which could consequently affect SD outcomes in areas of B-SR and SP.

Lee and Lim (2020) revealed that TMS positively influences the extent to which focal firms collaborate with their suppliers in order to attain positive environmental outcome, a key dimension of SP. Also, Siagian (2021) specifically revealed that SP requires huge financial commitments, faultless policies and sound internal controls in order to achieve it. As such, absence of or inadequacy of TMS could have severe effects on SP. Villena et al. (2011) revealed that establishing trust between buyers and suppliers is synonymous to cost minimisation, a dimension of sustainable performance (SP).

Some studies (Villena et al., 2011; Lee et al., 2020) have revealed that the presence of information transparency and trust enable buyers and suppliers to develop collaborative demand projections, identify product demands in real time and work towards the attainment of optimal inventories and higher customer satisfaction; situations which could consequently lead to higher sustainable performance in areas of economic, social and environmental. Also, trust in SD enables suppliers to willingly partake in designing products which are socially and environmentally friendly and this plays a crucial role in achieving sustainable performance outcome.

Kulangara et al. (2016) additionally stressed that trust in supplier relationships leads to minimised costs and lead time, improve product quality and ensure higher economic performance of focal firms. As such, it is imperative for manufacturing firms to emphasise trust when developing their suppliers in order to ensure that the latter conducts sustainable activities in line with the former's requirements. Therefore, developing suppliers on the basis

of trust could have significant impact on buyer-supplier relationship building and sustainable performance. Simply put, focal firms would struggle to build stronger relationships with their key suppliers and achieve SP if they fail to build trust in such collaborative relationships. It was, therefore, hypothesised that:

H3a: Top management support has a significant positive effect on sustainable performance

H3b: Trust has a significant positive effect on sustainable performance

Supplier Development effects on Buyer Supplier Relationship and Sustainable Performance

The effect of supplier development (SD) on (a) buyer-supplier relationship (B-SR) and (b) sustainable performance has not yielded the needed attention. Regardless, Hoque (2021) asserted that the relationships between buyers and suppliers can be strengthened if the former focus on SD. During SD, huge resources are committed into its attainment which is crucial to building stronger buyer-supplier relationships. Joshi, Shitole, Chavan and Joshi (2018) also revealed that buyer-supplier relationships can be improved through supplier development; as such, buyers who are willing to develop their suppliers are highly likely to achieve stronger buyer-supplier relationships. Glavee-Geo (2019) concluded that supplier development significantly predicted the future of business relationships between buyers and suppliers.

A study by Kivite (2015) revealed that during supplier development, issues such as supplier training, communication, recognition and financial support are recognised and emphasised and these are arguably key to building better relationships between the buyers and suppliers. Sillanpää, Shahzad and

Sillanpää (2015) also emphasised the need for buyers and suppliers to strategically collaborate via supplier development to build a stronger and long-term relationships. Kumar and Rahman (2015) (2020) similarly concluded that when suppliers are developed, they become actively involved in the activities of focal firms which is crucial to building long-lasting relationships. Simply put, suppliers who are willing to undergo development are highly likely to remain committed and thereby establish longer and healthier relationships with their investors (i.e., buyers). In view of this, the study proposed that:

Moreover, although literature abounds on supplier development, they have largely focused on various performance dimensions; but, with limited focus on sustainable performance. however, this section extensively reviews current research on supplier development and firm performance with much focus on sustainable performance. Kivite (2015), for instance, focused on how supplier development affects the operational performance of manufacturing firms in Nairobi City County, Kenya. Using the regression analytical tool, the study found that supplier development has a significant positive effect on the large manufacturing firms' operational performance in Kenya. Conclusively, the more focal firms focus on supplier development, the higher their operational performance outcome.

Lee, Chan and Pu (2018) investigated the impact of supplier development on supplier's performance and found the former to significantly improve the latter. They concluded that when suppliers undergo development, their capacity levels improve which is crucial to attaining higher performance. Blome et al (2014) analysed the effects of green procurement and green supplier development on supplier performance. Focusing on Western

European companies, the study developed a structural equation model to test its hypotheses and consequently found supplier performance to be positively affected by green supplier development. It was concluded that when buyers engage in green supplier development, the performance levels of their suppliers would also improve. Liu, Zhang, Hendry, Bu and Wang (2018), on the other hand, concluded that supplier development is a prerequisite for attaining sustainable performance.

Similarly, findings by Van der Westhuizen and Ntshingila (2020) indicated that supplier development and information sharing are key predictors of the performance of SMEs in Sedibeng. They concluded that when management of SMEs focus on developing their suppliers, it could play a significant role in their quest for better performance. According to Ağan, Acar and Neureuther (2018), firms can achieve their sustainability objectives if they emphasise supplier development. They explained that when suppliers are developed, they tend to supply sustainable or environmentally friendly raw materials and information which are key to achieving sustainable outcomes such as sustainable performance.

Arguably, when suppliers are developed, manufacturing firms can be able to interfere (i.e., to some extent), in their activities and invariably induce them to supply green or environmentally and socially conscious products and services. This situation could go a long way to help the manufacturing firms attain positive sustainable performance. In this effect, the study hypothesised that:

H4a: Supplier development has a significant positive effect on buyer-supplier relationship

H4b: Supplier development has a significant positive effect on sustainable performance

Mediation role of Sustainable Performance in (a) Top Management Support and (b) Trust on Buyer-Supplier Development

Top management support occurs when top managers devote ample time to firm initiatives in proportion to its costs, review plans, follow up on outcomes and facilitate the management of problems (Liu, Liu & Yang, 2020). It also describes the extent to which top management of focal firms commit or support firm-level initiatives and provide relevant resources to achieve them. As such, when top managers commit to relationship building with their crucial suppliers, its attainment would be possible (Adesanya, Yang, Iqdara & Yang, 2020). However, this goal would be more attainable in the presence of supplier development. Mandal (2020) asserted that even if top managers are committed to or supports firm-level initiatives including resilience, they would struggle to build stronger relationships in the absence of supplier development.

It could be argued that absence of supplier development could make suppliers feel that focal firms only prefer arms-length or transactional relationship. This situation could affect building healthier relationships with such suppliers if when there is top management support. More precisely, the level of buyer-supplier relationship would be low if top managers fail to emphasise supplier development. Although TMS support can lead to improved buyer-supplier relationship, the latter could be higher if more investment is made into SD (Gu, Zhou, Cao & Adams, 2021). Conclusively, suppliers who feel that top management of focal firms are committing huge resources into

their development are highly likely to feel recognised and in turn contribute massively to building stronger buyer-supplier relationships.

Moreover, supplier development focuses on working collaboratively with high-potential and critical suppliers in order to improve their current competitiveness and capabilities in areas of quality, costs, technology and time for mutual gains (Patrucco et al., 2021). As such, if focal firms that aim at building trust with their suppliers go further to develop them, their relationships would be strengthened. Simply put, trust alone may not serve as basis for building buyer-supplier relationships. As such, emphasising supplier development could be key to expanding and strengthening existing relationships between the buyers and the suppliers.

Shahzad et al. (2016) investigated how supplier development approaches can develop buyer-supplier relationships. The study presented a set of propositions that identify significant supplier development approaches critical for the development of buyer-supplier relationships and develop a theoretical framework that specified how these different supplier development approaches support in order to strengthen the relationships. The findings revealed that supplier development strategies i.e., supplier incentives and direct involvements strongly effect in developing buyer-supplier relationships.

Additionally, when partners in supply chains trust each other and aim at strengthening their relationships, they need to pay more attention to supplier development Brookbanks and Parry (2022) asserted that when suppliers undergo development, they begin to feel a part of the focal firm and subsequently build their trust levels which in turn leads to improved buyer-supplier relationships. Seyedghorban, Simpson and Matanda (2020) explored

the dynamics of trust creation in an early buyer–supplier relationship phase at the interpersonal level. Results of the study indicated that ability, credibility, benevolence and persona of supplier brand representatives (S-BRs) relate significantly to a buyers' trust in S-BR. In view of this, the study proposed that:

H5a: Supplier development significantly mediates the relationship between top management support and buyer-supplier relationship

H5b: Supplier development significantly mediates the relationship between trust and buyer-supplier relationship

Mediation role of Sustainable Performance in (a) Top Management Support and (b) Trust on Sustainable Performance

Sustainability is increasingly gaining attention in modern-day business environments (Norström, Cvitanovic, Löf, West, Wyborn, Balvanera & Österblom, 2020). This concept has been strengthened by numerous calls from stakeholders including customers for focal firms and their supply chains to ensure environmentally friendly operations. In view of this, some scholars have revealed that the goal of sustainability including sustainable performance can be achieved if focal firms obtain maximum support from their top management team (Ali & Johl, 2021; Lim, Lee, Foo, Ooi & Tan, 2021). Giannakis, Dubey, Vlachos and Ju (2020) particularly stressed that achieving sustainable performance requires heavy investments via commitment of resources; thus, having the support of top managers would make it achievable.

Other studies have also highlighted the relevance of key suppliers' involvement in achieving sustainable performance (Lim et al., 2021; Neri, Cagno, Lepri & Trianni, 2021). Neri et al. (2021), for instance, revealed that when suppliers are directly involved in business operations of focal firms, they

tend to supply quality raw materials and information to achieve successful outcomes like sustainable or operational performance. As such, focal firms can achieve the triple bottom line in areas of social, environmental and economic if they focus on supplier development (Jia, Stevenson & Hendry, 2021). Although these assertions can never be overruled, it could be argued that sustainable performance could be achieved at a faster rate if top management of focal firms pay maximum attention to supplier development.

Moreover, when top managers focus on supplier development, the key suppliers would tend to supply quality raw materials even during uncertain times in order to achieve sustainable performance. As such, the presence of supplier development could strengthen the association between top management support and sustainable performance. Arguably, top managers could help their manufacturing firms attain sustainable performance if they commit reasonable amounts of resources into developing their suppliers. On the basis of these assumptions, the study proposed that:

On the other hand, this section reviewed related studies on the mediating role of supplier development (SD) in the relationship between trust and sustainable performance (SP). Although previous studies seem scanty on this subject, the limited studies available were reviewed. A study by Li, Humphreys, Yeung and Cheng (2006), for instance, investigated whether supplier development efforts contribute to competitive advantage of electronic manufacturing firms in Hong Kong. Using the structural equation modelling approach, the found that joint actions and trust appear to be the two most critical elements that enhance buyers' operational effectiveness. The study concluded

that supplier development can play a crucial role in influencing the relationship between trust and the firms' competitive advantage.

Also, Narasimhan, Mahapatra and Arlbjørn (2008) conducted a study on impact of relational norms, supplier development and trust on supplier performance. The study aimed to understand whether supplier development initiatives should be emphasized if firms strive to achieve superior supplier performance. It was found that supplier development plays a crucial role in affecting the relationships between trust and supplier performance. They, therefore, concluded that if partners who trust each other focus on supplier development, the level of supplier performance would increase. Similarly, Maestrini, Patrucco, Luzzini, Caniato and Maccarrone (2021) also concluded that buyers who emphasise trust in their relationships with suppliers can perform sustainably if they focus on supplier development.

Parente, Murray, Zhao, Kotabe and Dias (2022) conducted a study on relational resources, tacit knowledge integration capability (TKIC), and business performance. The study aimed to investigate how relational resources, such as the buyer's trust in its suppliers and the level of supplier involvement, affect the level of TKICs of the firm, which, in turn, is hypothesized to affect business performance. The findings confirmed the importance of relational resources such as trust on business performance. The study concluded that two relational resources (supplier involvement and buyer's trust) are important drivers of TKICs and that the level of supplier involvement in the production process mediated the relationship between buyer's trust and TKIC. Given these assertions, the researcher hypothesised that:

H6a: Supplier development significantly mediates the relationship between top management support and sustainable performance

H6b: Supplier development significantly mediates the relationship between trust and sustainable performance

Conceptual Framework

This section presents a conceptual framework on the drivers and outcomes of supplier development among manufacturing firms in Ghana. Based on the study's purpose, the theoretical underpinnings, the propositions of the specific research objectives and trends identified through the empirical review, this conceptual framework was proposed to regulate the conduct of this study. In relation to the study, the independent variable was represented by the drivers of supplier development (SD) which comprised top management support (TMS) and trust. The dependent variable, on the other hand, was represented by supplier development outcome comprising buyer-supplier relationship (B-SR) and sustainable performance (SP). Finally, supplier development represented the mediating variable. These variables were used to develop 12 hypotheses which are shown in the framework in Figure 1.

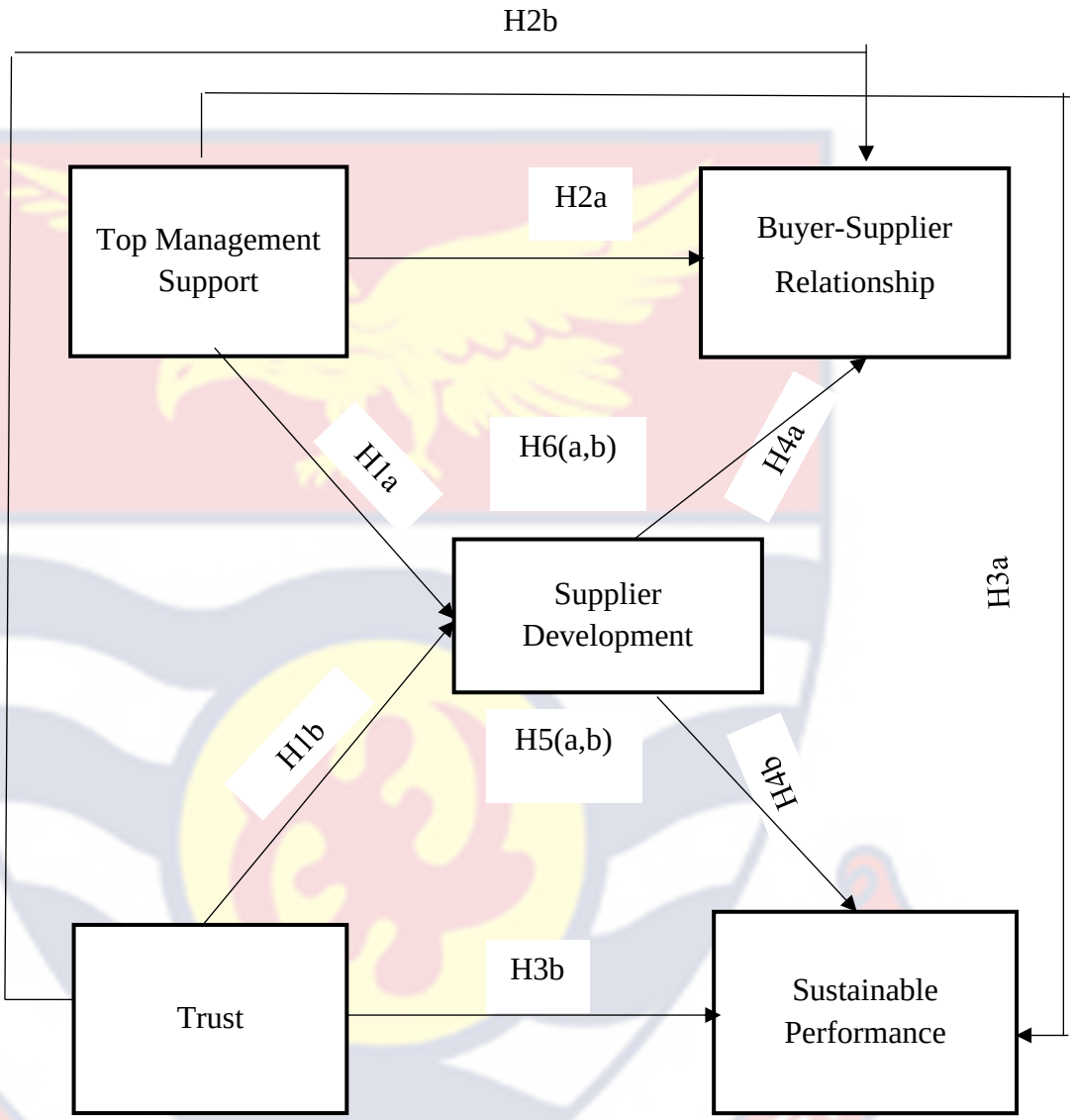

Figure 1: Conceptual Framework of the Study
Source: Author's Construct (2021)

From Figure 1, it is suggested that there are correlations between: top management support and the buyer-supplier relationship; trust and sustainable performance; top management support and supplier development; trust and supplier development, supplier development and buyer- supplier relationship; as well as supplier development and sustainable performance. It is also proposed that supplier development mediates the relationship between top management

support and supplier development outcome and also in the relationship between trust and supplier development outcome. The framework specifically suggests that an increase in sustainable performance and or buyer-supplier relationship will depend to a large extent on how favourable their supplier development is through trust and top management support. Supplier development is therefore relevant if the aim to build long-lasting relationships and or maximize sustainable performance are to be increased with the help of trust and top management support. The framework, therefore, clearly shows the hypotheses developed in support of the study's hypotheses.

Lessons learnt from the Literature Review

From the literature, it was realized that, TMS has a significant positive effect on SD; Trust has a significant positive effect on SD; TMS has a significant positive effect on BSR; Trust has a significant positive effect on BSR; TMS has a significant positive effect on SP; Trust has a significant positive effect on SP; SD has a significant positive effect on BSR; SD has a significant positive effect on SP; SD significantly mediates the relationship between TMS and BSR; SD significantly mediates the relationship between trust and BSR; SD significantly mediates the relationship between TMS and SP; SD significantly mediates the relationship between trust and SP.

Chapter Summary

This chapter has provided information relating to literature review in the light of the central theme of the study. Special attention was given to theoretical, conceptual and empirical reviews, and out of these reviews, the conceptual framework that guided the study was developed.

CHAPTER THREE

RESEARCH METHODS

Introduction

The study sought to examine the drivers and outcomes of supplier development among manufacturing firms in Ghana. This section presents the research methodology that is used in conducting the study. It discusses the philosophical perspective underpinning the study, research approach and design that were used to undertake the study. The chapter also gives detailed information about the study area, population, sampling techniques, ethical considerations, data collection instrument, processing and analysis.

Research Philosophy

Research paradigm is very key when it comes to conducting scientific research (Kivunja, & Kuyini, 2017). According to Aliyu, Singhry, Adamu and Abubakar (2015), the research paradigm consists of four main components which include epistemology, ontology, methodology, and axiology. The epistemological paradigm is a branch of philosophy that deals with the nature and forms of knowledge, how it can be obtained, and how these ideas can be communicated to others (O'Gorman, & MacIntosh, 2016). According to Bryman (2011), there are two epistemological positions namely; positivism and interpretivism. Positivism philosophy, according to Taylor and Medina (2011), looks at the only "factual" knowledge obtained through observation, including measurement, is reliable.

It also examines the relationship between variables, generates hypotheses about those relationships, and conclude based on how such variables

are employed (Sosa, Setup & Dancy 2009). The interpretivism paradigm opposes the idea that there is a single, verifiable reality that exists independently of our senses (Norwich, 2020). Interpretivist further believe in multiple realities that are socially constructed. Truth and reality are created rather than discovered and that reality cannot be known as it is because it is always mediated by our senses (Rehman & Alharthi, 2016). Ontology is a field of philosophy concerned with the assumptions we make in order to think that something makes sense or is real, as well as the basic nature or essence of the social phenomena under study (Cuthbertson, Robb & Blair, 2020).

It is the philosophical study of the character of existence or reality and the underlying concepts of being and becoming, things and their relationships that exist (Giordano, 2015). Ontology is critical to a paradigm because it aids in the understanding of the things that make up the world, as it is known. It attempts to ascertain the true nature, or the underlying notions that comprise themes that we analyse in order to make sense of the meaning embedded in research data (Yanow & Schwartz-Shea, 2015). The study adopted positivist research paradigm. The positivist research paradigm provides the philosophical basis for the study. The study followed the positivist concept, which holds that only "factual" information obtained via observation, including measurement, is reliable (Ayeni, Saman & Kasimu, 2019).

According to Rehman et al. (2016), the positivist paradigm assumes that there is an objective ontological framework in social reality and that individuals respond to this objective environment. Furthermore, the researcher is unrelated to the study, and there are no safeguards for human interests inside the study. Positivism is based on measurable observations that lead to statistical analysis.

It has also been highlighted that positivism is consistent with the empiricist notion that, knowledge arises from human experience, which has an atomistic, ontological view of the universe. As a result, the research followed the positivist philosophy, which holds that everything existing can be confirmed via experiments and observation.

Research Approach

A research design cannot be used in scientific research unless a research approach is provided. As a result, a quantitative research approach was deem fit the study based on the nature of the particular objectives/hypotheses, and main data to be gathered and analysed. According to Basias and Pollalis (2018), the quantitative approach is focused with describing phenomena through the collection of numerical data, which is then analysed using statistics and mathematically based approaches. The quantitative research method of analysis generally begins with data collection, which is based on the hypothesis or theory and is supplemented by the use of descriptive or inferential statistics. (Merriam & Grenier, 2019). When it comes to quantitative methods, research is performed at a rapid pace.

Furthermore, it is a quick and simple alternative that allows for statistical data analysis, generalization of findings, formulation of logical conclusions based on numerical values (Shekhar, Prince, Finelli, Demonbrun & Waters, 2019). The fundamental issue of quantitative analysis is that measuring is precise, truthful and generalizable in its simple prediction of cause and effect (Cassell & Symon, 1994; King, Cassell & Symon, 1994). The data collection techniques used in the quantitative method are usually questionnaires, surveys, personality assessments, and structured research instruments (Burell & Morgan,

1979). The study adopted quantitative approach because looking at the numerical nature and the objectives/ hypothesis of the study, it makes it very important to use the quantitative approach.

The data collected can be numerically interpreted as frequencies or values, and associations of variables can be examined using statistical techniques. The quantitative approach is relevant to the study because, quantitative approach presents straightforwardness in conducting research and can cover a wide scope of circumstances (Amaratunga, Baldry, Sarshar & Newton, 2002). Furthermore, because the quantitative results comprise a larger sample that was picked at random, they are likely to be extrapolated to an entire population or sub-population (Kumar et al., 2015). Also, the final findings are based not on interpretations but on quantities which might facilitate possible future development.

Research Design

Research design is a set of guidelines and instructions to be followed in addressing the research problem (Leedy & Omrod, 2010). Kumar et al. (2015) described research design as a master plan that specifies the techniques and procedures for gathering and evaluating the necessary data. The study employed the explanatory research design to examine the effects of drivers of supplier development on buyer supplier relationship and sustainable performances among manufacturing firms in Ghana. Explanatory research design aims to identify any causal links between variables that pertain to the research problem (Nyarku, Kusi, Domfeh, Ofori, Koomson & Owusu, 2018). According to Buchanan, Seligman and Seligman (2013), explanatory studies go beyond description. It attempts to explain the reasons for the phenomenon that the descriptive

study only observed. In an explanatory study, the researcher uses hypothesis to represent the forces that caused a certain phenomenon the occur (Kumar et al., 2015).

The rationale behind the adoption of explanatory research design in this study is for the researcher to identify the extent and nature of cause-and-effect relationships between the construct of interest – drivers of supplier development, buyer supplier relationship and sustainable performance. The explanatory design also focuses on a specific problem to explain the pattern of relationships between constructs considered in a study (Iphofen & Tolich, 2018). The researchers concern in explanatory research is how one variable (drivers of supplier development) affects other variables (buyer supplier relationship and sustainable performance).

Study Area

Accra, Tema, Kumasi, and Takoradi were the study area for this research. These areas were selected because it qualified as one of the major industrial hubs in Ghana. Presently, the registered manufacturing firms in Ghana is approximately 7105 according to Ghana Statistical Service (GSS) report in 2017. These firms are engaged in agro- processing, mining and mineral processing, light manufacturing, aluminium smelting, food processing, cement production, production of alcoholic beverages, chemicals, drugs, textiles, pharmaceutics, timber and wood processing, furniture manufacturing and other products. Specifically, the study concentrated on manufacturing firms operating in Ghana's aforementioned industrial cities as a result of manufacturing firms' concentration there.

Population

The term population refers to the researcher's target audience, or the total number of people to whom the study's findings apply as suggested by (Asiamah, Mensah & Oteng-Abayie, 2017). Majid (2018) posited that population is the target population of the study to be studied or investigated. The study's population included all procurement managers of both private and publicly-owned manufacturing companies in Ghana, with a focus on four selected metropolises: Accra, Kumasi, Tema, and Sekondi-Takoradi. More precisely, the study's target population consisted of procurement managers of 7,105 manufacturing firms based on GSS report in 2017 and cited in Oduro and Haylemariam (2019). Table 2 presented the sampling frame of the study.

Table 2: Target Population

Metropolis	Population	Proportion (%)
Accra	3198	45.0
Kumasi	1065	15.0
Tema	2131	30.0
Sekondi-Takoradi	711	10.0
Total	7105	100.0

Source: GSS (2017)

From Table 2, it could be deduced that there are 7105 manufacturing firms. Out of which 3198 constituting 45% are based in Accra. Also, 1065 (15%) are based in Kumasi, whiles 2131 (30%) and 711 (10%) are located at Tema and Secondi-Takoradi, respectively. It could be seen that majority of the manufacturing firms are located in the major cities due to access to market and infrastructure.

Sampling Procedure

According to Addo, Dun-Dery, Afoakwa, Elizabeth, Ellen and Rebecca (2017), sampling is the process of selecting appropriate and representative elements from a population. Sampling has also been defined as the act, process, or technique of selecting a suitable sample, or a representative part of a population, in order to determine the parameters or characteristics of the entire population (Lohr, 2021). According to Yong, Yusliza and Fawehinmi (2019) sampling is very essential because, in almost all cases, it is not possible to study all the members of a population. Until sampling, it is important that the sample size is first calculated. Via Adam's formula (2020), a total of three hundred and eighty-two (382) manufacturing firms were sampled. Based on this, the study's sample size consisted of 382 procurement officers of manufacturing firms selected for the study.

For selecting the number of respondents from the sampling frame, a stratified random sampling technique was used. Stratified sampling is a probability sampling procedure in which the target population is first separated into mutually exclusive, homogeneous segments (strata), and then a simple random sample is selected from each segment (stratum) (Sharma 2017; Taherdoost, 2016). The samples selected from the various strata are then combined into a single sample. This sampling procedure is sometimes referred to as "quota random sampling (Iliyasu, & Etikan, 2021; Etikan, & Bala, 2017).

For all elements of the population, the target population was defined to start the stratified sampling procedure, the stratification variables were identified to determine the number of strata to be used for the study. The stratification variables were related to the purposes of the study. The study made subgroup

estimates based on the stratification variables which were related to the sub-groups. The availability of auxiliary information often determines the stratification variables that are used. More than one stratification variable was used for the study. However, in order for the study to provide expected benefits, this was related to the variables of interest and be independent of each other. The existing sampling frame was identified and developed which included information on the stratification variable(s) for each element in the target population. The sampling frame included all information on the stratification variables.

The sampling frame was evaluated for under coverage, over coverage, multiple coverage, and clustering to make adjustments where necessary. The sampling frame was divided into strata, categories of the stratification variable(s), to create a sampling frame for each stratum. Within-stratum differences were minimized, and between-strata differences were maximized. The strata constituted the entire population. The strata were independent and mutually exclusive subsets of the population. Every element of the population was in one and only one stratum. A unique number were assigned to each element in the strata. A sample size was determined for each stratum.

The numerical distribution of the sampled elements across the various strata determined the type of stratified sampling that is implemented. The study used proportionate stratified sampling to select the sample size. In proportionate stratified sampling, the number of elements allocated to the various strata is proportional to the representation of the strata in the target population (Levy & Lemeshow, 2008). That is, the size of the sample drawn from each stratum is proportional to the relative size of that stratum in the target population. As such,

it is a self-weighting and EPSEM sampling procedure (Lavrakas, Traugott, Kennedy, Holbrook, de Leeuw & West, 2019). The same sampling fraction is applied to each stratum, giving every element in the population an equal chance to be selected (Creswell, 2017).

The resulting sample is a self-weighting sample. This sampling procedure is used when the purpose of the research is to estimate a population's parameters (Saunders et al., 2017). The study randomly selected the targeted number of elements from each stratum. At least one element was selected from each stratum for representation in the sample; and at least two elements was chosen from each stratum for the calculation of the margin of error of estimates computed from the data collected. This is also a necessary condition for predictive research. Given the possibility of non-responses, the study's minimum sample size of 255 members was increased by 50% (127) to 382 members. As such, this increment was provided to eliminate the consequences of non-responses. In view of this, the study's sample size was 382 members of a target population of 7,105 manufacturing firms in the four selected metropolises in Ghana.

Table 3: Proportional Stratified Sampling for Sample Size Used

Metropolis	Population	Sample (n)	Sample (%)
Accra	3198	172	45.0
Kumasi	1065	48	15.0
Tema	2131	115	30.0
Sekondi-Takoradi	711	32	10.0
Total	7105	382	100.0

Source: Author's Construct (2021)

Data Collection Instrument

A structured questionnaire was used as the primary data collection instrument to collect data from respondents based on the research objectives and approach to the study. A questionnaire is a data collection method in which each member is asked to answer the same set of questions in a predetermined order or in other words a questionnaire is a structured set of questions designed to elicit information from respondents (Malhotra & Birks, 2017). Accordingly, Pandey, Kala and Pandey (2015), suggested that questionnaire surveys are possibly the most commonly used data-gathering technique in research. It is the primary data collection instrument used in quantitative research and thus the most appropriate when compared to other methods such as observation and interviews, which are suitable for qualitative research.

The questionnaire used closed-ended questioning styles to approach the measurement of the scale's main items. Closed-ended questions require respondents to choose from a predetermined set of responses. The questionnaire was grouped in two parts – A and B. Part A of the questionnaire included question items about the drivers of supplier development (i.e., top management support and trust), supplier development and supplier development outcome (i.e., buyer-supplier relationship and sustainable performance). It is to note that this part was put into sub-sections to measure the various constructs. Finally, Part B provided information on the respondents' demographic characteristics.

The respondents' opinions on the items that measured the constructs in this study were measured using a 7-point Likert scale with 1 representing least agreement and 7 representing highest agreement. In today's social sciences, the Likert scale is the most widely used method of scaling. This is due to the fact

that they are much easier to construct and will, on average, be more reliable than other scales with a similar number of items (Willits, Theodori & Luloff, 2016).

Measurement of Variables

All the question items for this study were adapted from empirical reviews of related works of literature and some were slightly modified to reflect the context of this study. The variables and their respective measurement indicators and sources are presented in Table 4.

Table 4: Measurement of Variables

Variable	Measurement Indicator	Source
Top management support	top management supports improvement of purchasing department; purchasing is considered a vital part of our corporate strategy; purchasing views are considered by top management; top management is aware of supplier development	Ali, Li, Khan, Shah, and Ullah, (2020); Liu, Liu, and Yang (2020)
Trust	reliable information; supplier prioritizes our interest; supplier has our interest in mind	Maestrini, Patrucco, Luzzini, Caniato, and Maccarrone, (2021)
Supplier Development	training key employees of suppliers; direct investment in suppliers' facilities; advice suppliers on product development; advice suppliers on quality related issues	Shahzad, Sillanpää, Sillanpää, and Imeri (2016).
Buyer-supplier Relationship	perceive profitable relationship with suppliers; information sharing; sacrifice for suppliers; jointly plan with suppliers	Sillanpää, Shahzad, and Sillanpää (2014)
Sustainable Performance	increase in market share; increased return on investment; environmental impact minimisation; improvement in surrounding communities	Zaid, Jaaron, and Bon (2018)

Source: Author's Construct (2021)

Validity and Reliability

The reliability and validity of a research instrument reflect how well it measures the parameters it was designed to measure (Sürücü & Maslakçi, 2020). Validity describes how well a research instrument measures its research objectives (Bolarinwa, 2015). Validity was carried out in relation to the study

in order to validate and modify the questionnaire's content. Peer and expert reviews were used to accomplish this whereas a preliminary survey questionnaire was first created based on comprehensive reviews of related literature and given to two research-inclined peers for thorough review. The revised questionnaire was presented to three practitioners with relevant knowledge and expertise in the manufacturing industry.

Based on the practitioners' suggestions, the researcher ensured that all necessary modifications were done. Finally, the questionnaire was forwarded to the researcher's supervisor for further review. The research objectives, communication strategy, probable respondents, cost, and time constraints were all carefully considered. In addition, the layout structure (i.e., phrasing, ambiguity, sequence, length, structure, direction, language, etc.) and item design were given special consideration, with an emphasis on good and relevant questions. The drafted questionnaire was then checked for reliability using the reliability test in the SPSS software.

Reliability focuses on the degree to which a research instrument delivers consistent results when utilised several times in different locations and at different times (Beins & McCarthy, 2018). In accordance with the study, Cronbach's alpha was used to determine the internal consistency of the questionnaire items. Previous study has shown that the closer the Cronbach alpha value is to 1, the more reliable the research instrument is (Beins et al., 2018; Bolarinwa, 2015). A pre-test was carried out on 30 procurement officers of manufacturing firms. Blumberg et al. (2008) proposed that a sample size between 25 and 100 is ideal. As such, the choice of a sample size of 30 respondents was appropriate and used for the pretesting exercise.

The pretesting was done to check and address possible errors in each question item in the data collection instrument. Pretesting is suitable for testing validity, reliability and adequacy of the research instrument (Saunder et al., 2009; Sekaran, 2016; Zikmund, 2012). Hair et al. (2017) suggested that the coefficient alpha (α) of 0.70 or above implies that the questionnaire items truly measured the specific latent variable. Table 5 presents the results of the reliability and validity test of the pretesting.

Table 5: Reliability and Validity of Measurement Instruments

Construct	Cronbach's Alpha
Top Management Support	0.942
Trust	0.903
Supplier Development	0.943
Buyer-Supplier Relationship	0.942
Sustainable Performance	0.922

Source: Author's Construct (2021)

From Table 5, the independent variables (trust and top management support) had α of 0.903 and 0.942 respectively. The dependent variable (sustainable performance and buyer-supplier relationship) also had a α of 0.922 and 0.942 respectively, and the mediating variable (supplier development) had a α of 0.943. These indicated that all the questionnaire items measuring each construct in the questionnaire met the acceptability criteria. Therefore, the questionnaire was reliable for collecting data for the study.

Common-Method Bias

According to MacKenzie and Podsakoff (2012), the data received from single respondents has been proven to be prone to common-method bias (CMB). CMB relates to the possibility of measuring errors, which are worsened

by the sociability of respondents who wish to reply positively (Chang, positively (Witteloostuijn, Eden & Chang, 2020). CMB is also referred to as an instrument's variety in responses (Sharma et al., 2009). Previous research has suggested various techniques for addressing CMB (Tehseen, Ramayah & Sajilan, 2017; Jakobsen & Jensen, 2015; Rönkkö, Parkkila &Ylitalo, 2012) and one of them focuses on introducing unrelated questions into the relevant ones. This is done to check whether the respondents actually read the questions before responding. Also, VIF scores are used to check for CMB; where values > 5 suggests the presence of CMB and vice versa. The study used these two techniques to address CMB.

Data Collection Procedures

Before the data collection exercise, clarification was sought from the Institutional Review Board of university of Cape Coast, and an introductory letter was obtained from the Department of Marketing and Supply Chain Management which was then sent to the various manufacturing firms to seek permission to involve their members in the data collection exercise. The purpose of the research was clarified to the management of the manufacturing firms via the letter. Respondents' permission was obtained and the questionnaires were then distributed to them with assistance from two well trained and equipped research assistants. Given the scattered nature of the manufacturing firms within the four selected metropolises, took one month (i.e., between February and March, 2022) to complete. The challenges encountered during the data collection period included diverse locations of the manufacturing firms, and unwillingness of some respondents to partake in the study. All ethical issues were strictly adhered to during the exercise to obtain adequate and valid data.

Ethical Consideration

According to Patten and Newhart (2017), the major ethical issues that need to be considered in every research comprise voluntary participation, right to privacy, anonymity and confidentiality of information. As such, all efforts were geared towards ensuring that all these ethical issues are attended to. For instance, with voluntary participation, all respondents were allowed to participate in the data collection exercise willingly. Also, the possible issues of right to privacy were realised by allowing respondents to answer the questionnaires on their own and they were also informed to leave unclear statements unanswered for further explanations through their own convenient medium. The issue of anonymity was attended to by restricting respondents from providing their names and contact numbers on the questionnaire.

Respondents were, therefore, assured that none of their identities would be leaked to the public domain nor used for any purpose in the study. The study ensured confidentiality of information by assuring respondents that all information provided would be kept confidential. Respondents were also assured that none of their information shall be used against them nor found in the public domain. Also, the researcher obtained ethical clearance from the Institutional Review Board of the University of Cape Coast, attached as appendix B. Finally, all necessary documents obtained for the study was appropriately referenced to avoid an ethical issue of plagiarism. In view of these, all major ethical issues/considerations were met in the study.

Data Processing and Analysis

The data gathered from the exercise was scrutinized thoroughly to ensure that any errors resulting from incomplete or incorrectly filled

questionnaires were eliminated or drastically reduced. The data was then meticulously coded and edited to ensure that no missing values were present. After screening, 320 of the questionnaires received were deemed valid for data analysis. Given the 382 questionnaires distributed, attaining valid data set of 320 representing a response rate of 83.8% was deemed adequate for further analysis. To make the data entry easier, all variables in the questionnaire were given codes. The data was carefully screened once it was entered into the datasheets of the IBM SPSS software (version 26.0). Out-of-range values were detected by examining the frequency distributions for each variable.

According to Albers (2017), research study in data analysis has three goals: to get a feel for the data, to test the data's goodness, and to test the hypotheses developed in the research. The SMART PLS application is well-known for modelling in business-oriented studies (Hair, Black, Anderson, & Babin, 2018), particularly for estimating hypothesized models (Ahrholdt, Gudergan, & Ringle, 2019; Ringle, Wende, & Becker, 2015), as well as handling complex predictive-models (Ahrholdt, et al., 2019; Ringle et al., 2015).

Both descriptive and inferential statistical tools were used to analyse the processed data. The descriptive statistical tools included frequencies, percentages, means, standard deviations, Skewness, and kurtosis, while the inferential statistical tools included multiple regressions from Partial Least Square-Structural Equation Modelling (PLS-SEM). The PLS-SEM was used to analyse all of the research objectives and its assumptions include: (i) a uniform value of 1 must be used as starting weight for the approximation of the latent variable score; (ii) categorical scale must not be used in endogenous constructs;

(iii) number of bootstrap "samples" should be 5000 and number of bootstrap "cases" should be the same as the number of valid observations; (iv) should have a maximum iteration of 300; (v) must be robust and (vi) there should be no multicollinearity among the independent variables (Lew, Lau & Leow, 2019).

The set-up of the PLS tool for the formulation of the model was as follows: PLS Algorithm and Bootstrapping were dully marshalled for the analysis with 5000 maximum iterations. This is because, the study was predictive-oriented (Nikitina, Paidi & Furuoka, 2019; Ramli, Latan & Solovida, 2019). Reflective analysis was used to analyse the data in PLS-SEM. The model of the study was reflectively specified and assessed based on recognized procedures for assessment of reflective models. Casewise deletion was configured for missing values (Ringle et al., 2015) although there were no missing values in the data. A 95% confidence interval with a corresponding 5% level of significance was set for the reflective model.

As a decision rule, some indicators with outer loadings less than 0.7 (not statistically significant) were eliminated to improve the measurement model. Items with a threshold of less than 0.7 were retained because their deletion could not improve CA and CR (Manley, Hair, Williams & McDowell, 2020; Ringle, Sarstedt, Mitchell & Gudergan, 2020). The model configuration treated supplier development drivers comprising trust and TMS as exogenous variables whilst sustainable performance and B-SR were treated as endogenous variables in the context of the study. Finally, SD represented the study's mediating variable.

The evaluation of the models began with measurement model and then structural model because, PLS-SEM validates measurement models first before structural models are evaluated (Hair, Risher, Sarstedt & Ringle, 2019; Tabet,

Lambie, Jahani & Rasoolimanesh, 2020; Fami, Aramyan, Sijtsema & Alambaigi, 2019). Cronbach's Alpha (≥ 0.7) and Composite Reliability (≥0.7) were also computed. Cronbach Alpha and composite reliability are the most common measurement used for internal consistency (Ringle et al., 2015). Cronbach's alpha evaluates the reliability of the items in terms of the of scale-items. Particularly, it measures the extent to which all the variables in the scale are positively related to each other (Nunnally, 1978).

Cronbach's Alpha value for all the items exceeded the minimum 0.7 cut-off point (Hair, Hult, Ringle & Sarstedt, 2016). Composite reliability is considered a preferred alternative to Cronbach's Alpha to test convergent validity in the reflective model because Cronbach's Alpha may either overestimate or under-estimate scale reliability (Hair, Sarstedt, Ringle & Mena, 2012). It is however argued that even though, the values of the composite reliability somehow very high, this may signal some design problem, however, the indicators were represented of the desired constructs and simply correlate highly and were therefore considered acceptable (Garson, 2016). Both Cronbach's alpha and composite reliability refer to sum scores, not composite scores (Henseler, 2017).

The reliability of the scale was measured with the rho_A (≥ 0.7). The rho_A is therefore cognized as the most important PLS reliability measure (Dijkstra & Henseler, 2015), which is currently the only consistent reliability measure of PLS construct scores (Henseler, 2017). The reliability measure rho_A is an estimate of the squared correlation of the PLS construct score with the (unknown) true construct score. It must have a minimum score of 0.7 (Roemer, Schuberth & Henseler ,2021). Convergent validity was measured with

the Average Variance Extracted [AVE]. Convergent validity measures the level of correlation of multiple indicators of the same construct that agree (Ab Hamid, Sami & Sidek, 2017). AVE values must be or exceed 0.5 before they can adequately measure convergent validity (Ringle et al., 2015).

Discriminant validity was measured with Heterotrait-Monotrait Ration (should be less than 0.9 or 1). Discriminant validity represents the uniqueness and distinctiveness of each construct relative to other constructs in the model (Hair et al., 2019). Heterotrait-Montrait [HTMT] represents the geometric mean of the heterotrait-heterommothed correlation divided by the average of the monotrait-heteromethod (Henseler, Ringle & Sarsstedt, 2015) and best measures discriminant validity in the reflective model than Fornell-Larcker Criterion and Factor Loadings (Ringle et al., 2015). In a well-fitted model, the HTMT ratio should be below 0.9 in reflective constructs to measure DV.

In a more literal sense, Gaskin, Godfrey and Vance (2018) argued that to measure discriminant validity, HTMT ratio of less than one must be obtained. This stance is however debatable. Common method bias was measured with the Collinearity Statistics (VIF ≤5). Since reflective models are prone to biases and errors (Afum,Osei-Ahenkan, Agyabeng-Mensah, Owusu, Kusi & Ankomah, 2020), it became necessary to examine the test of collinearity statistics and report the same (Hair et al., 2017). This was measured with the VIF value as its usage in this context has been confirmed in reflective models in structural modeling (Kock, 2015). The VIF is also used to measure common method bias. Generally, it is acknowledged that when collinearity statistics is above 3.3 thresholds, it generally implies the model is prone to be affected by common method bias.

On the other hand, when the VIF is less than 3.3, such reflective models are deemed to be without common method bias (Ringle et al., 2020). However, Kock (2015) further argued that VIF needs to have a score of 5 or lower to avoid multicollinearity problem in situations where algorithms incorporate measurement error, especially for factor-based PLS-SEM algorithms. The structural model was evaluated as follows. Factors loadings for all significant indicators were measured accordingly, given cognizance top-values and t-statistics (Ringle et al., 2015). Factors loadings are considered as a form of item reliability coefficients for the reflective model (Henseler et al., 2015). The factor loadings are single regression results with a particular indicator in the measurement model as an independent variable (Ringle et al., 2020).

Measurement loadings are standardized path weights connecting the factors to the indicator variables and ranges from 0 to 1. Loadings should be significant (Garson, 2016). By convention, for a well-fitting reflective model, path loadings should be above 0.70 (Ringle, 2015: Henseler et al., 2015). In general, the larger the loadings, the stronger and more reliable the measurement model. Path-coefficients were used to assess the contributions of the predictors (Both direct and indirect) to the variance in the dependent variable (Schuberth et al., 2018). Effect size (f^2) was used to quantify the contributions of the predictors to the changes in the dependent variable (Ahrholdt et al., 2019; Ringle et al., 2015). Effect size values above 0.35, 0.15, and 0.02 can be regarded as strong, moderate, and weak respectively (Cohen, 1988).

This was assessed by the R-square which has been regarded as the most common effect size measure in path models (Garson, 2016). To this effect, tentative cut-off points have been recommended (Garson; Hock &

Ringle,2006). Results above 0.67 are described as being "substantial", those above 0.33 are moderate and those above 0.19 are "weak". The findings were presented in Tables and Figures for easy understanding and reporting.

Chapter Summary

This section has provided information regarding the methodological approaches that were employed to obtain the primary data, how data were processed and analysed given cognizance to the statistical tools and specific research objectives as well as how findings of the study were summarized and presented for easy interpretation and understanding.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

The study examines the mediating role of supplier development in the linkage between drivers of supplier development and outcomes of supplier development of manufacturing firms in Ghana. This1 chapter considers relevant tenets such as respondents' demographic characteristics, descriptive statistics of the constructs, model specification as well as critical assessments of both the measurement model and the structural model. As such, this chapter provides the study's results and associated discussion with respect to managerial, practical, and theoretical implications.

Demographic Characteristics of Respondents

The section discusses the respondents' demographic characteristics which include gender, academic attainment, employment status, number of years in operation and the type of industry. The result was presented in Table 4. The data obtained via the questionnaire revealed that, out of the 320 respondents, 217 (67.8%) of them were males 103 (32.2%) of them were females. In terms of academic attainment, 107 (33.4%) of the respondents had Diploma degree, 141(44.1%) had attained first degree, 58 (18.1%) had post graduate degree and 14(4.38%) had professional certificates. This demonstrates that the majority of respondents have received some type of formal education; indicating that all respondents were academically minded and capable of providing pertinent information

Table 6: Demographic Characteristics of Respondents

Item	Options	Freq (N)	Percent (%)
Sex	Male	217	67.81
	Female	103	32.19
	Total	320	100.00
Ed. Background	Diploma Degree	107	33.44
	Bachelor Degree	141	44.06
	Post Graduate degree	58	18.12
	Professional Qualification	14	4.38
	Total	320	100.00
Year of Service	1 year or less	37	11.56
	2 years	85	26.56
	3 years	61	19.06
	4 years	54	16.88
	5 years and above	83	25.94
	Total	320	100.00
Job Designation	Procurement Manager	82	25.63
	Assistant Procurement Officer	165	51.56
	Others	73	22.81
	Total	320	100.00
Industry/Sector	Construction	99	30.94
	Food and Beverage	112	35.00
	Textiles	45	14.06
	Others	64	20.00
	Total	320	100.00

Source: Field survey (2022)

Descriptive Statistics of Constructs

The means (M) and standard deviation (SD) were used to describe the study's constructs. As a result, Table 5 summarizes the study's constructs. The mean was interpreted using these subjectively generated criteria, which were

informed by prior studies and the scale of measurement. More precisely, using a 7-point Likert scale, where higher mean values indicate more positivity, a score of 3.5 is considered to be an appropriate average. In general, the mean values of all the study's constructs exceeded 3.5. For instance, from trust (lowest) and buyer-supplier relationship (highest), the mean values varied from 3.515 to 4.135. The standard deviation figures from trust to buyer-supplier relationship were also between 0.992 and 1.182.

Table 7: Descriptive Statistics of Study's Construct

Constructs	Mean	SD	Skewness	Kurtosis
Trust	3.515	0.992	-0.295	-0.662
TMS	3.990	1.121	0.477	1.537
SD	3.715	1.039	0.342	0.370
B-SR	4.135	1.182	-0.096	-0.616
SP	3.680	0.887	0.639	0.274

Source: Field survey (2022)

Additionally, skewness and kurtosis values for each construct were also examined to ensure that the data was normal. The absolute skewness values for the model's constructs varied from 0.096 for Buyer-supplier relationship to 0.639 for Sustainable Performance, while the absolute kurtosis values ranged from 0.274 in the case of sustainable performance to 1.537 in the case of top management support. According to Azzalini (2005), survey data is considered normally distributed when the absolute values of skewness and kurtosis of a construct normality test are less than 3 and 10, respectively. Due to the fact that the values of the skewness and kurtosis are significantly less than 3 and 10, respectively, the

constructs used in this study are regarded to have met the criterion as juxtaposed by Azzalini (2005).

Model Specification

The specification of the model is the initial stage in the use of PLS-SEM. A sub-step in this process is the specification of the measurement model followed by a second phase in which the structural model is specified (Hair et al., 2017). The measurement model depicts the link between the constructs and their indicators or measurements, whereas the structural model depicts the relationships between the constructs and the hypothesised relationships between them (Hair et al., 2019). There are two sub-sections to this section: one that describes the measurement model specification and another that describes the structural model specification.

Measurement Model Specification

The measurement model refers to the items that are used to measure the variables in each model set. In this study's model, forty-five (45) indicators were employed to measure the five constructs that were under consideration. With supplier development (SD), for instance, 23 indicators were derived from Humphreys, Li and Chan (2004) and Modi and Mabert (2010) and labelled as SD1, SD2, SD3, SD4, SD5, SD6, SD7, SD8, SD9, SD10, SD11, SD12, SD13, SD14, SD15, SD16, SD17, SD18, SD19, SD20, SD21, SD22 and SD23. Trust, a driver of SD, was measured with three indicators derived from Gullett, Canuto-Carranco, Brister, Turner and Caldwell (2009) and Hosmer (1995) and labelled as T1, T2 and T3. Top management support (TMS) had three indicators which were

labelled as TMS1, TMS2 and TMS3. The indicators were adapted Handfield, Sroufe and Walton (2005) and Ali, Li, Khan, Shah and Ullah (2020)

Also, for buyer-supplier relationship (B-SR), seven items were adapted from Govindan et al. (2010) and Humphreys et al. (2003) and labelled as B-SR1, B-SR2, B-SR3, B-SR4, B-SR5, B-SR6 and B-SR7 respectively. In terms of sustainable performance (SP), nine items were employed to measure it and labelled as SP1, SP2, SP3, SP4, SP5, SP6, SP7, SP8 and SP9. Per this study, the measurement items were adapted from Abdul-Rashid et al. (2017), and Sezen and Cankaya (2013). The next section discussed the structural model specification.

Structural Model Specification

Two exogenous constructs and two endogenous constructs were used to develop the study's structural model. The model specifically includes exogenous variables such as top management support and trust which represented the drivers of supplier development. The endogenous constructs include buyer-supplier relationship and sustainable performance and they represented the outcomes of supplier development and finally, supplier development represented the mediation variable. These structures were represented as circles with a blue background (see Figure 2).

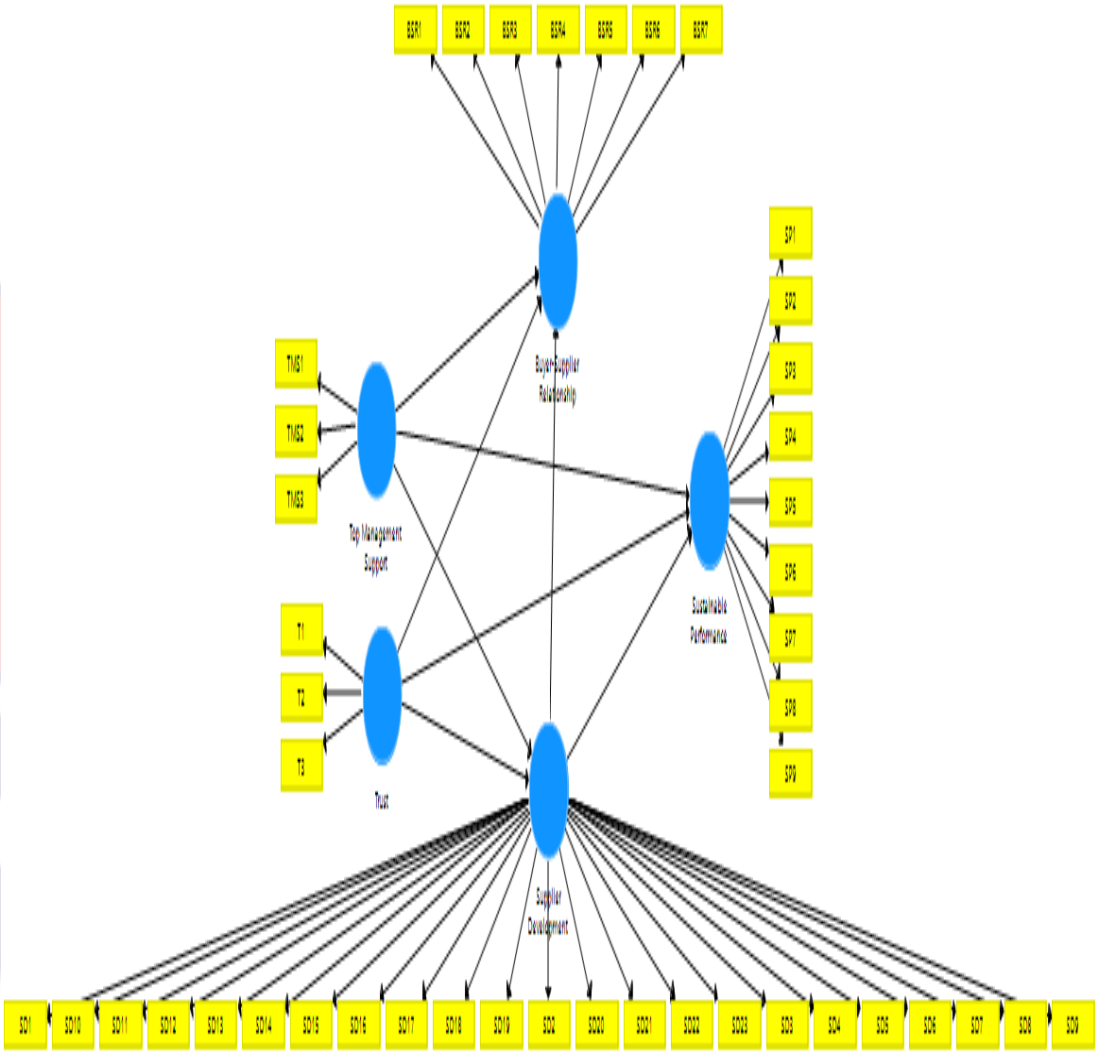

Figure 2: Specified Measurement and Structural Model
Source: Field survey (2022)

Measurement Model Assessment

The study's PLS-SEM analysis began by explaining the structural model specification in Figure 2. It also analysed the measurement model quality criteria in PLS-SEM consisting of the internal consistency reliability, convergent validity and discriminant validity. The results were presented in tables to bring forth adequate validity and reliability so as to make the model's results purposeful.

Table 8: Measurement Model Assessment

Construct	Items	Loadings	Cronbach Alpha	Convergent Validity	AVE
Top Management Support	TMS1	0.891			
	TMS2	0.916	0.942	0.913	0.778
	TMS3	0.838			
Trust	T1	0.890			
	T2	0.939	0.903	0.939	0.837
	T3	0.915			
Supplier Development	SD2	0.832			
	SD3	0.716			
	SD5	0.710			
	SD14	0.703			
	SD15	0.766	0.943	0.951	
	SD16	0.778			
	SD17	0.818			0.617
	SD18	0.822			
	SD19	0.822			
	SD20	0.792			
	SD21	0.855			
	SD23	0.792			
Buyer-Supplier Relationship	B-SR1	0.817			
	B-SR2	0.871			
	B-SR3	0.896			
	B-SR4	0.891	0.942	0.953	0.744
	B-SR5	0.883			
	B-SR6	0.881			
	B-SR7	0.794			
Sustainable Performance	SP1	0.842			
	SP2	0.740			
	SP3	0.784			
	SP4	0.746			
	SP5	0.773	0.922	0.935	0.617
	SP6	0.716			
	SP7	0.751			
	SP8	0.861			
	SP9	0.841			

Source: Field survey (2022)

Internal Consistency Reliability

As a necessity, this study first tested for internal consistency reliability (ICR) (Hair et al. 2019). Table 6 showed the Cronbach alpha (α) and composite reliability (CR) of the study's variables. α is used to check ICR but in PLS-SEM, it tends to give conservative measurements (Wong, 2013; Hair et al., 2019). According to Hair et al., (2019), with α, items are not weighted and so it becomes a less precise way of measuring reliability whilst with CR, based on the indicators' loadings, items are weighted and reliability is greater than α. In view of this, the use of the CR is preferred to α when determining ICR (Bagozzi & Yi, 1988; Hair et al., 2012; Hair et al., 2019). To evaluate ICR, the CR value should be 0.700 or higher (Bagozzi & Yi, 1988; Hair et al., 2019). Table 7 present the ICR using both α and CR.

From Table 6, all the constructs under investigation had a CR value above 0.700, thereby signalling that composite reliability as a preliminary quality criterion of ICR was met (Ringle, Wende & Becker, 2015). For instance, the CR values ranged between 0.913 and 0.9533 where TMS had the lowest CR value of 0.913 while B-SR had the highest CR value of 0.953. Simply put, the constructs were reliable and could be repeated under similar circumstances.

Convergent Validity

Convergent validity was also assessed to indicate the level to which a study's construct converges so as to help describe the variance of its indicators (Hair *et al.*, 2019). In SEM, the Average Variance Extracted (AVE) is used to measure convergent validity (Gotz, Liehr-Gobbers & Krafft, 2010). AVE consists of the variance of its items captured by the construct relative to the full amount of

variance as well as the variance resulting from the measurement error (Gotz *et al*., 2010). According to, Rogers and Pavlou (2003), The value of AVE which is less than 0.500 is not sufficient as more variance is as a result of error variance than to indicator variance. Hence, it is suggested that AVE values for each construct should be 0.500 or higher to reveal that the construct explains at least 50% of the indicators' variance (Hair et al., 2017; Hair et al., 2019). Table 7 presents the convergent Validity of the various constructs.

From Table 6, the constructs' AVEs demonstrate that they properly measured convergent validity, since all of the values were higher than the minimum threshold of 0.500. The next stage discussed discriminant validity. Also, in terms of the item loadings, all the items for each construct had loadings greater than 0.70. This result indicates that the items are true and accurate measures of their assigned constructs within the study area. More precisely, since the study's constructs had indicators with loadings above 0.70, the implication is that they offer quality measures of their constructs; thus, the study's model is valid and its outcome can be relied upon for further analysis.

Discriminant Validity

This study tested for discriminant validity (DV) which showed the degree to which a construct in a structural model is empirically different from other constructs (Hair et al., 2017). DV ensures that a model's latent variables are independent of each other. Collinearity issues of a structural model can also be evaluated by the use of DV (Hair et al. 2014). If variables achieve DV, then they may not have collinearity at significant levels (Hair, Sarstedt, Ringle & Gudergan, 2017). To meet its requirement, the factorial loadings of each construct should be higher than the correlations that exist among them (Chin, 1981; Fornell & Larcker,

1981). The HTMT criteria is the optimal criterion for determining discriminant validity. This criterion demands that the value of each construct should be less than 0.9. The outcome was displayed in Table 7 based on HTMT criteria.

Table 9: Heterotrait-Monotrait (HTMT)

	B-SR	SD	SP	TMS	T
B-SR					
SD	0.642				
SP	0.582	0.772			
TMS	0.641	0.560	0.499		
T	0.568	0.447	0.507	0.524	

Field survey (2022)

According to Table 7, all constructs had an HTMT ratio smaller than 0.9, indicating that they properly measured discriminant validity. As a result, discriminant validity has been confirmed using HTMT criteria. However, the next section in this chapter discusses structural Model Assessment.

Structural Model Assessment

After assessing the measurement model, the study also assessed the structural model. According to Hair et al. (2019), structural model assessment helps in evaluating the structural interaction among key constructs. Prior to the assessment of the structural paths, this aspect of the model assessment looked at evaluating the absence of multicollinearity issues among the constructs using variance Inflation Factor (VIF) and tolerance level. Also, the exogenous constructs were assessed for predictive accuracy using coefficient of determination (R^2), effect sizes (f^2) and predictive relevance (Q^2). Finally, the significance of the structural paths and the indirect specific effect for the mediation analysis were assessed and discussed (see Table 8).

Table 10: Structural Model Assessment

Item	VIF (B-SR)	VIF (SD)	VIF (SP)
SD	1.451		1.451
TMS	1.503	1.276	1.503
T	1.367	1.276	1.367
R^2	0.518	0.311	0.566
Adjusted R^2	0.514	0.306	0.562
Predictive Relevance (Q^2)	0.375	0.182	0.323

Source: Field survey (2022)

Collinearity Assessment

Multicollinearity was checked using the constructs' VIF values in the model. Every set of exogenous latent constructs in the model were examined for potential collinearity issues to find out if any of them should be ignored, put together or create a theory based higher order model (Wong, 2013; Hair et al., 2017). Multicollinearity assessment was also carried out to find out if the path coefficients were free from bias and to minimize the predictor constructs' levels of collinearity (Hair et al., 2019). The rule suggests that, the model would be exposed to multicollinearity when the VIFs of the exogenous constructs are greater than 10 (kock, 2015); however, VIFs of 3 or lower are recommended (Hair et al., 2019). Table 8 represents collinearity assessment of the constructs.

From Table 8, the VIF values among the variables ranged from 1.276 to 1.503; thereby, falling within the recommended value below 3. In terms of tolerance level, the study's constructs had a tolerance level above the minimal threshold of 0.200. It can, therefore, be said that there is the absence of multicollinearity among the variables. The VIF is also used to measure common

method bias (Hair et al., 2019). The VIF scores for the inner model, therefore, portray there is no common method bias for all constructs.

Coefficient of Determination (R^2)

The model's predictive accuracy was checked using the R^2 values of the endogenous variables as shown in Table 8. The R^2 values assess the variance that is explained in every endogenous variable and it is a measure of the explanatory power of the model (Shmueli & Koppius, 2011). R^2 indicates the combined effect of the exogenous constructs (Hair *et al*., 2012). The R^2 values ranges between 0 and 1 where higher values of R^2 depict higher explanatory power. In this study, Hair et al.'s (2019) criteria for assessing R^2 was used; where, R^2 values of 0.75, 0.50 and 0.25 respectively indicate substantial, moderate and weak explanatory powers. Table 8 presented the R^2 of the endogenous construct.

The result in Table 8 reveals that the R^2 for the latent construct, B-SR as 0.518. This indicate that the latent variables of TR, TMS and SD moderately explain about 51.8% of variation in B-SR. Also, SD had R^2 of 0.311 which means that TR and TMS averagely account for 31.1% variation in SD. Also, SP had R^2 of 0.566 to imply that the exogenous constructs of TR, TMS and SD moderately explain 56.6% of the variance in SP.

Predictive Relevance (Q^2)

Also, another way to evaluate the model's predictive accuracy is through the measurement of the Q^2 values (Stone 1974; Geisser 1975). Q^2 measures a model's predictive validity and it depends on the blindfolding process which eliminates single points found in the data matrix, computes the eliminated points including the mean and finally evaluates the model's parameters (Rigdon, 2014;

Sarstedt, Ringle & Henseler, 2014). Q^2 does not only measure out-of-sample prediction but also includes in-sample explanatory power put together out of sample prediction (Sarstedt, Ringle & Hair, 2017). Using these measures as input, the blindfolding process predicts the data points which were eliminated for all constructs. The rule suggests that values of Q^2 should be greater than 0 so that a particular dependent variable can reveal the predictive accuracy for that particular dependent variable (Hair et al., 2019).

The criteria for assessing Q^2 is that, values < 0.25 (small), 0.25 to 0.5 (medium) and values above 0.5 indicate large Q^2 (Hair *et al*., 2019). Based on the criterion of Hair *et al*., (2019), Table 8 shows the Q^2 values in the model. All the values were greater than zero (0) which showed predictive relevance. More precisely, B-SR, SD, and SP all have predictive value when TMS and trust are considered.

Effect Size (f^2)

The study also assessed how the elimination of a particular predictor construct will affect a dependent variable's R^2 through the use of the f^2 metric (Hair *et al*., 2019). The f^2, presented in Table 9, shows the extent to which an independent latent construct contributes to a dependent latent construct's R^2. It simply examines the strength of the relationships among the latent variables (Wong, 2013). f^2 also assist researchers to evaluate the overall contribution of a particular study. The f^2 values comprising 0.02, 0.15 and 0.35 indicate small, medium and large f^2 respectively (Cohen, 1988; Wong, 2013).

Table 11: Effect Size

Structural Path	Effect Size	Std. Error
SD -> B-SR	0.206	0.064
SD -> SP	0.646	0.242
TMS -> B-SR	0.107	0.034
TMS -> SD	0.178	0.048
TMS -> SP	0.002	0.016
T -> B-SR	0.081	0.059
T -> SD	0.071	0.039
T -> SP	0.051	0.042

Source: Field survey (2022)

The f^2 results as evidenced in Table 9 shows that SD causes a medium statistically significant variance in B-SR (f^2=0.206). Similarly, the f^2 shows that SD causes a weak statistically significant variance in SP (f^2=0.101). However, SD had the largest f^2 on SP, while, TMS had the smallest f^2 on SP. The results imply that supplier development would have a larger f^2 on sustainable performance when top management support (0.178) and trust (0.051) are implemented at the same time. Similarly, TMS (0.107) would have a better f^2 on B-SR when it is implemented together with trust (0.081).

Direct Effects of Path Coefficients and their Significance

After assessing both the measurement and structural models, the hypotheses were tested in line with the objectives. The study's objectives to examined the effects of top management support (TMS) and trust (T) on supplier development (SD); the effects of TMS and T on buyer-supplier relationship (B-SR) on sustainable performance (SP); the effect of supplier development (SD) on

B-SR and SP; the mediating effects of SD in the relationship between TMS and B-SR and T and B-SR and the mediating effects of SD in the relationship between TMS and SP and T and SP of manufacturing firms in Ghana.

These objectives were evaluated by examining their relationships' strengths and directions using the path coefficients and their t-statistics. According to Hair et al. (2017), PLS-SEM does not interpret the p-values but the t-statistics with the rule that the values should be greater than 1.96. This result implies that the relationships among the constructs are significant and as such, the hypotheses with direct effects (8) can be supported (Wong, 2013; Hair et al., 2019). The β value indicates the strength and direction of the relationship. As such, positive βs indicate that the relationships are positively directed. Also, the βs indicate the relationship's strength in terms of weak (<0.30), medium (0.30-0.50), moderate (0.50-0.70) and strong (>0.70) respectively. Table 10 presented the results of objectives 1 to 5 by testing eight direct hypotheses.

Table 12: Specific Direct and Indirect Structural Paths

Structural Path	β-value	T- Stat	P-Values	Decision Rule
Direct effects				
$H1_a$ TMS -> SP	0.038	0.474	0.636	Reject
$H1_a$ T -> SD	0.250	3.881	0.000	Accept
$H2_a$ TMS -> B-SR	0.278	8.795	0.000	Accept
$H2_b$ T -> B-SR	0.231	3.678	0.000	Accept
$H3_a$ TMS -> SD	0.395	7.960	0.000	Accept
$H3_b$ T -> SP	0.174	2.748	0.006	Accept
$H4_a$ SD -> B-SR	0.379	8.299	0.000	Accept
$H4_b$ SD -> SP	0.638	8.922	0.000	Accept
Indirect (Mediation) Effects				
$H5_a$ TMS -> SD -> B-SR	0.150	5.327	0.000	Accept
$H5_b$ T -> SD -> B-SR	0.095	3.898	0.000	Accept
$H6_a$ TMS -> SD -> SP	0.252	4.995	0.000	Accept
$H6_b$ T -> SD -> SP	0.159	3.990	0.000	Accept

Source: Field Survey (2022)

The results in Table 10 which presented the structural path significance results indicate that top management support (TMS) made a statistically significant positive contribution to causing any change in buyer-supplier relationship (B-SR) (β =0.278; t=8.795; p=0.000: p<0.05). This means that the study's H1a was accepted/supported; thus, any unit increase in TMS would cause a unit improvement in B-SR of Ghana's manufacturing firms by 27.8% (weak). This implies that when the firms' top management support supplier development, the firm's relationship with its key suppliers would improve by about 28% and vice versa. The result also implies that TMS plays a key role in improving B-SR.

However, the study's result revealed that that TMS did not make any statistically significant contribution to causing any variance in SP (Beta=0.038; t=0.474; p=0.636: p>0.05). The result means that the study's H1b was rejected to indicate that any unit change in TMS does not lead to any significant unit change in SP. Simply put, when manufacturing firms obtain support from their top management in terms of supplier development, sustainable performance would remain the same or unchanged. It can also be inferred that a unit fall in TMS causes no significant reduction in the SP of Ghana's manufacturing firms.

Also, Table 11 revealed that trust (T) had a statistically significant positive effect on B-SR (Beta=0.231; t=3.678; p=0.000: p<0.05); indicating acceptance of the study's H2a. The result can be expressed that a unit increase or fall in value for trust causes 0.231 significant improvement or decrement in the focal firms' relationships with their key suppliers. It can, therefore, be inferred that trust has a significant positive but weak effect on B-SR; yet, continuous improvement in building trust would yield about 23.1 percent improvement in buyer-supplier relationship. Therefore, trust is a key driver of supplier development because its

presence strengthens buyer-supplier relationship by 23.1% within the manufacturing industry of Ghana.

Similarly, the study's result supported H2b by revealing that trust has a statistically significant positive influence on SP (Beta=0.174; t=2.748; p=0.006: p<0.05). Thus, a unit increase in trust causes a 0.174 significant improvement in the SP of Ghana's manufacturing firms. On the other hand, a unit fall in trust among partners would cause a 0.174 significant reduction in the SP of Ghana's manufacturing firms. In view of this, trust has a weak significant effect on SP; however, its adoption is key to improving the sustainable performance of the manufacturing firms by 17.4% as compared to top management support which played no significant role.

Additionally, the study's result supported H3 by revealing that TMS has a significant positive effect on SD (Beta=0.395; t=7.960 > t=1.96; p=0.000). The result also indicates that TMS has a medium significant effect on SD; implying that obtaining support from top management would lead to a significant improvement in supplier development by 39.5%. Similarly, the study's result in Table 11 proved that the trust made a statistically significant positive contribution to causing the positive variance in supplier development (Beta=0.256; t=3.881; p=0.000: p<0.05). As such, H4 was accepted; thus, a unit increase in trust causes about 25.6 (weak) significant improvement in the SD of Ghana's manufacturing firms. Therefore, SD would decrease by 25.6% if focal firms fail to build trust with their key suppliers.

Furthermore, Table 10 revealed that SD has a statistically significant positive effect on B-SR (Beta=0.379; t=8.299: t>1.96; p=0.000); thereby, accepting H5a. Thus, a unit increase in SD causes a 0.379 (medium) significant

improvement in B-SR of manufacturing firms in Ghana. Simply put, SD plays a medium significant role in ensuring stronger relationships between manufacturing firms and their suppliers. Finally, the study's result proved that SD made a statistically significant positive contribution to causing variance in SP (Beta=0.638; t=8.922: t>1.96; p=0.000). Thus, a unit change in scores for SD causes a 0.638 (moderate) significant improvement in the SP of Ghana's manufacturing firms and vice versa. The result implies that SD is a better predictor of SP; thus, continuous investment in SD would lead to a significant improvement in the manufacturing firms' sustainable performance.

After assessing the structural path for direct effects, the next section focused on the specific indirect effect structural paths which showed the mediation effects of SD between the drivers of SD and SD outcomes (B-SR and SP).

Mediation Effect

This section assessed the study's final two objective s (6 and 7) which sought to investigate the mediating role of SD in the predictive relationships between TMS and B-SR; TMS and SP; trust and B-SR and trust and SP of Ghana's manufacturing firms. The study followed the parameters and guidelines set out by Nitzl, Roldan and Cepeda (2016) for the mediation analysis. The results of the specific indirect effects were illustrated in Table 10.

The results from the specific indirect effect in Table 10 suggest that, the relationship between TMS and B-SR is indirectly significant when there is the presence of SD. In view of this, H6a was supported to suggests that SD significantly mediates the predictive linkage between TMS and BSR (Beta=0.150; t=5.327; p=0.000: p<0.05). Similarly, the study's H6b was accepted because it was found that the linkage between TMS and SP was indirectly significant when

SD is implemented (Beta=0.252; t=4.995; p=0.000: p<0.05). This implies that TMS-SP linkage is significantly mediated by SD.

The study's result affirmed that there is a positive and significant indirect effect of trust on B-SR when SD is present (Beta=0.095; t=3.898; p=0.000: p<0.05). This proves that SD significantly mediates trust and B-SR. Finally, there exist an indirect relation between trust and SP when there is the presence of SD (Beta=0.159; t=3.990; p=0.000: p<0.05). Thus, SD positively and significantly mediates the causal linkage between trust and SP of Ghana's manufacturing firms. After assessing the specific indirect effects of SD on the exogenous and endogenous constructs, the study presented its structural model in Figure 3.

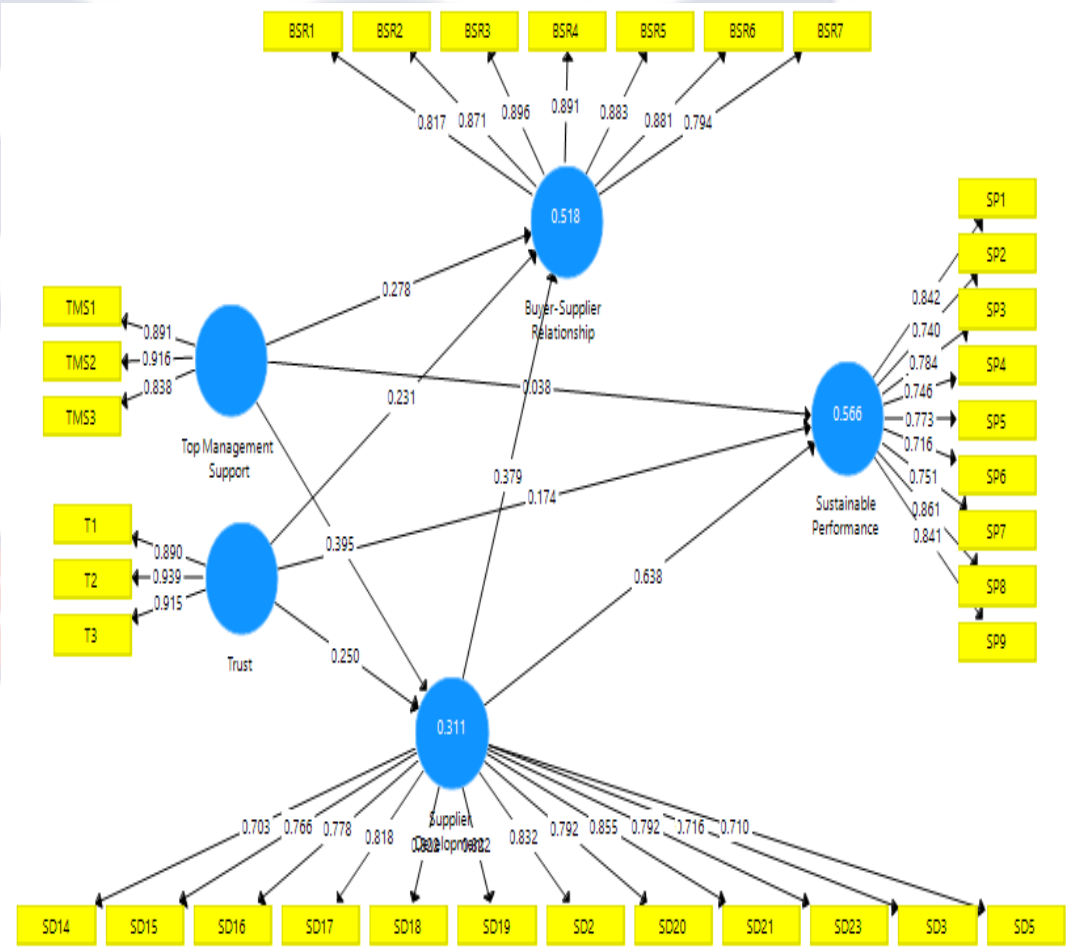

Figure 3: Assessed Structural Model
Field survey (2022)

Discussion of Results

Generally, the study examined the mediating role of supplier development in the causal linkage between the drivers of supplier development (top management support and trust) and outcomes of supplier development (buyer-supplier relationship and sustainable performance) of Ghana's manufacturing firms. To achieve the study's purpose, six research objectives with twelve (12) hypotheses were developed and tested. Per the study's results, their implications and validations were discussed below:

Top Management Support, Trust and Supplier Development

The study objective one assessed the effects of (a) TMS and (b) Trust on SD of manufacturing firms in Ghana.

Hypothesis 1a: Top Management Support and Supplier Development

To achieve this, H1a was developed and tested, of which it was accepted based on the PLS outcome. As such, the study confirmed that TMS is responsible for achieving SD within the manufacturing industry of Ghana. The result implies that when top management of the firms support supplier development initiatives, they tend to commit relevant resources to achieve it. The result also implies that the presence of top management support is key to ensuring that the firms' key suppliers are developed in line with expectations.

The study's finding corroborates with other empirical studies (Lo, Zhang & Zhao, 2018; Yawar & Seuring, 2018; Dubey, Gunasekaran, Childe & Helo, 2018) who collectively affirmed that suppliers play a key role in the attainment of firms' operational goals; as such, when top management commits organisational resources such as time, manpower efforts, technical resources and financial resources to their development, the focal firm can obtain value for money. These

studies also concluded that top management support in any initiative like supplier development is key to its achievement because they are in charge of making the strategic decisions and also committing the firms' resources. In view of this, supplier development can be achieved when top management of the manufacturing firms studied support this initiative.

Hypothesis 1b: Trust and Supplier Development

Also, the study's objective one (H1b) focused on investigating the influence of trust on supplier development of manufacturing firms in Ghana. In view of this, H1b was tested and it was revealed that trust is a positive and significant contributor to the variations being experienced in manufacturing firms' supplier development. In other words, trust was observed to have a direct influence on supplier development. The study's outcome implies that manufacturing firms would struggle to develop their suppliers if there is no trust. Simply put, absence of trust among partners (focal firms and suppliers) in the manufacturing industry would impede supplier development. Therefore, trust is an essential element in supplier development; thus, its absence could affect supplier development.

The finding of other empirical studies is coherently in line with this study's objective finding (Narasimhan, Mahapatra & Arlbjorn, 2008; Mallet, Kwateng & Nuertey, 2022; Pradhan & Routroy, 2018). This is because, previous studies have unanimously advanced that the presence of trust between a focal firm and its suppliers fosters mutually satisfying problem-solving skills, promote information sharing, secures business continuity which consequently promote supplier development. Thus, when trust exists among business partners, developing suppliers is achievable.

Top Management Support, Trust and Buyer-Supplier Relationship

The study's objective two examined the effects of (a) top management support (TMS) and (b) trust on B-SR of the manufacturing firms in Ghana. To achieve this, two hypotheses were tested where H2a proposed that TMS has a significant positive effect on B-SR and H2b hypothesised that trust has a significant positive effect on B-SR. Given the study's results, the two sections below discussed the findings.

Hypothesis 2a: Top Management Support and Buyer-Supplier Relationship

Hypothesis 2a was established to assess the direct effect of TMS on the B-SR of manufacturing firms in Ghana. The study found that TMS significantly and positively influence B-SR of manufacturing firms in Ghana. Managers of focal manufacturing firms are employed to see to the judicious use of scarce organisational resources for the achievement of all organisational objectives not limited to only strategic but tactical objectives as well. As such, the study's finding confirmed the solitary stance of some past empirical studies conducted on this subject matter (Gualandris & Kalchschmidt, 2015; Agan, Acar & Neureuther, 2018; Maestrini, Patrucco, Luzzini, Caniato & Maccarrone, 2021; Mallet, Kwateng & Nuertey, 2022).

A critical synthesis of the findings of these past empirical studies opines that for firms to effectively develop a fruitful B-SR, such relationships will need the strategical endorsement of the top management of the focal firm. This is because, most business organisations operate with limited financial resources; as such, for the relationship between the buyer (i.e., manufacturing firm) and supplier to be practically successful, top management efforts and resources must be effectively and efficiently allocated. In view of this, the assertions of previous

studies have been buttressed in this study. Therefore, top management support can play a crucial role in improving the relationships between manufacturing firms and their key suppliers within the scope of Ghana.

H2b: Trust and Buyer-Supplier Relationship

The study's H2a was accepted to indicate that trust significantly causes a positive influence on B-SR of Ghana's manufacturing firms. To build the argument for this stance, trust is deemed as an essential virtue that is highly valued by parties to a business arrangement such as trading contract. Thus, trust harnesses openness among business trading partners such as a buyer and a supplier. When a party to a commercial relationship acknowledges the trust of the other party, there is always transparency in dealing with such parties; thereby, strengthening the relationship between/among them. This is because, the presence of trust among buyers and suppliers in the business environment improves the level and quality of information shared in a supply market.

Therefore, the study's finding is in accordance with the findings of past scholarly studies (Gualandris & Kalchschmidt, 2015; Agan, Acar & Neureuther, 2018; Maestrini, Patrucco, Luzzini, Caniato & Maccarrone, 2021; Mallet, Kwateng & Nuertey, 2022). A critical review of these studies stressed the objective view that trust is inevitable if partners aim to harness a smooth and serene business relationships among them. In line with this, the study revealed that the presence of trust between focal firms and key suppliers would lead to improved relationships within the context of manufacturing firms in Ghana.

Top Management Support, Trust and Sustainable Performance

The study's objective three examined the effects of (a) top management support (TMS) and (b) trust on sustainable performance (SP) of the manufacturing

firms in Ghana. To achieve this, two hypotheses were tested where H3a proposed that TMS has a significant positive effect on SP and H3b hypothesised that trust has a significant positive effect on SP. Given the study's results, the two sections below discussed the findings.

Hypothesis 3a: Top Management Support and Sustainable Performance

The study also hypothesised (H3a) that TMS has a significant and positive effect on SP of manufacturing firms in Ghana; however, after applying the PLS-SEM, the study's finding had a differing outcome. More precisely, it was revealed that TMS does not significantly contribute to improving the SP of Ghana's manufacturing firms. The result suggests that suggest that top management of manufacturing firms in Ghana seldomly relents their organisational efforts to champion the implementation of operational initiatives that are geared towards improving sustainable outcomes. Also, the study's finding could arise from the fact that top management of manufacturing firms in Ghana generally perceive investment in sustainable initiatives as costly and thus, are generally reluctant to commit their firms' limited resources into achieving sustainable performance.

More precisely, top management of Ghanaian manufacturing firms generally perceive that pursuing sustainable initiatives will only increase business spending with either minimal or no short-term benefits. Similarly, top management's unencouraging efforts to invest significantly in the championing of sustainable initiatives that could harness an improved sustainable performance among Ghana's manufacturing firms was the surge in conflicting interest observed among some top officials in Ghana's manufacturing industries. As such, the study's finding opposes the aggregated views of some past scholars who advanced that TMS significantly influences firms' SP (Gualandris & Kalchschmidt, 2015;

Agan, Acar & Neureuther, 2018; Maestrini, Patrucco, Luzzini, Caniato & Maccarrone, 2021; Mallet, Kwateng & Nuertey, 2022).

More specifically, past studies concluded that when firms' top management supports the ideas of integrating sustainable initiatives into business processes, they invest heavily into such initiatives so as to improve the sustainable dimensions of business performances. Previous studies have also acclaimed that when managers are in consonance with the idea to pursue sustainable programmes as a means of ensuring improvement in the business' sustainable operational outcomes, they tend to align their individual interests with that of the business organisation or let the interests of the organisations supersede that of their individual interest(s). As such, the study's finding offer an interesting information that top management support does not always lead to sustainable performance and this could arise when top managers perceive it as costly and thus, not ready to fully commit to its success.

Hypothesis 3b: Trust and Sustainable Performance

Using the PLS-SEM algorithm, the study accepted H2b by evidencing that trust among partners yields better sustainable performance of Ghana's manufacturing firms. This implies that, trust among partners in the industry would help in achieving sustainable outcomes including sustainable performance. For instance, the presence of trust among stakeholders such as shareholders and managers would help the latter to follow some set of stipulated industrial or statutory standards, laws or norms that ensure that focal manufacturing firms operate in a very sustainable manner. Similarly, when management of manufacturing firms trust their employees and suppliers to achieve sustainable

outcomes in business operations, their latter could return the trust being instilled in them by dedicating all efforts and resources in to attaining this goal.

The findings of this survey corroborate with the unitary stance derived from past empirical studies (Gualandris & Kalchschmidt, 2015; Agan, Acar & Neureuther, 2018; Maestrini, Patrucco, Luzzini, Caniato & Maccarrone, 2021; Mallet, Kwateng & Nuertey, 2022). Drawing objective conclusions from these past studies, it was advanced that when there is trust among business stakeholders such as managers and directors or shareholders, managers and employees, managers and suppliers, such virtue increases the commitment of the stakeholders in order to achieve desired business goals such as improved sustainable outcomes. More precisely, the presence of trust among business partners in the manufacturing industry in Ghana would produce significant outcomes such as sustainable performance both in the short and long terms.

Supplier Development and (a) Buyer-Supplier Relationship and (b) Sustainable Performance

In terms of objective four, two hypotheses were developed to test whether (a) SD has a significant positive effect on B-SR (H4a) and (b) SD has a significant positive effect on SP. The hypotheses were tested and accepted and the ensuing sections presented the associated discussion.

H4a: Supplier Development and Buyer-Supplier Relationship

In terms of H4a, the study's finding evidenced a strong and significant influence of SD on B-SR among manufacturing firms in Ghana. Thus, the finding that SD is a potent organisational tool or intervention in harnessing a fruitful or beneficial relationship between manufacturing firms and their suppliers. Through the engagement of suppliers in a supplier-driven developmental process or

agenda, suppliers see them more or less as an integrated element of the focal firm's business due to the long-term trading engagement perceived with the supplier's business when effectively developed. Similarly, relationships between suppliers and focal manufacturing firms in Ghana have in recent years seen a significant improvement. As a result of manufacturing firms now knowing the key role suppliers play in harnessing competitive advantages for their varying lines, these firms have seen the dying need to develop suppliers in order to strengthen the relationships among them into the foreseeable future.

The study's finding corroborates with previous studies on SD and S-BR (Sillanpaa, Shahzad & Sillanpaa, 2015; Glavee-Geo, 2019; Joshi et al., 2018; Saghiri & Mirzabeika, 2020; Hoque, 2021; Jia, Stevenson & Hendry, 2021; Patrucco, Harland, Luzzini & Frattini, 2022). These studies asserted that, the practice of SD is claimed to be a prerequisite endeavour by focal firms when there is the operational need to harness a fruitful and mutually exclusive relationship with suppliers. Therefore, when manufacturing firms focus on supplier development, it offers a platform into strengthening relationships with such suppliers.

H4b: Supplier Development and Sustainable Performance

In terms of H4b, the study's finding positioned that SD has a positive and significant effect on the SP of manufacturing firms in Ghana. This result could be because, manufacturing firms in Ghana, have over the years, prioritised the suppliers in their operations as a result of the cascading effects of the suppliers' operations and the enormous roles suppliers play in ensuring the sustainability of the business environment. With growing concerns emanating from consumers for manufacturing firms to operate in a sustainable manner, these firms have been

found to focus on supplier development because they provide the crucial resources needed. Furthermore, the conscious efforts of focal manufacturing firms in Ghana to develop their suppliers have widened the benefits such as sustainable performance accrued to such firms.

According to Kivite (2015), when supplier development is prioritised, manufacturing firms can then source their productive resources such as inventories, technology, information, manpower, etc., from ethical or sustainable suppliers in order to meet sustainable standards. The study's finding is also in line with past empirical studies (Modi & Mabert, 2010; Blome, Hollos & Paulraj, 2014; Liu, Zhang, Hendry, Bu & Wang, 2018; Kivite, 2015; Busse, Schleper, Niu &. Wagner, 2016; Lee, Chan & Pu, 2018). This is because, over the years, scholars in the field of management science have come to agree that developing suppliers offer a great deal of competitive edge that manufacturing firms can harness to achieve sustainable performance in areas of economic, environmental and social outcomes. Simply put, for Ghana's manufacturing firms to achieve sustainable performance, supplier development must be prioritised.

Supplier Development Mediates the Relationship between (a) Top Management Support and (b) Trust and Buyer-Supplier Relationship

This research objective focused on the mediating role of supplier development (SD) in the linkage between (a) top management support (TMS) and (b) trust on buyer-supplier relationship within the manufacturing industry of Ghana. To achieve this objective, two hypotheses (H5a and H5b) were tested and eventually supported. The ensuing sections discussed the findings in line with the hypotheses.

H5a: Supplier Development Significantly Mediates the Relationship between Top Management Support and Buyer-Supplier Relationship

After testing H6a, it was found that SD positively and significantly mediates the predictive relationship between TMS and B-SR of Ghana's manufacturing firms. With both the direct and indirect effects revealing significant effects, the implication is that SD has a partial mediation effect in the relationship. This result specifically implies that SD does not totally mediate the linkage between TMS and B-SR; as such, in the absence of SD, TMS can still significantly affect B-SR. The result could emanate from the assertion that top management of manufacturing firms has over the years seen SD as a key SC practice that they can adopt to establish positive and progressive relationships with their suppliers to attain mutual benefits. As such, developing suppliers could play a significant role in ensuring that supports or assistance from top management leads to positive relationships with suppliers.

The study's outcome is in line with previous empirical studies (Li, Humphreys, Yeung, 2007; Narasimhan, Mahapatra & Arlbjorn, 2008; Busse, Schleper, Niu & Wagner, 2015; Gualandris & Kalchschmidt, 2015; Agan, Acar & Neureuther, 2018; Maestro, Patrucco, Luzzini, Caniato & Maccarrone, 2021; Mallet, Kwateng & Nuertey, 2022; Parente, Murray, Zhao, Kotabe & Dias, 2022). These studies argued that TMS significantly influence the ability of manufacturing firms to foster a progressive B-SR which can be attained via SD. Therefore, supplier development significantly but partially mediates the relationship between top management support and the buyer-supplier relationship.

H5b: Supplier Development Significantly Mediates the Relationship between Trust and Buyer-Supplier Relationship

Based on the PLS-SEM output, the study's hypothesis (H5b) was accepted to indicate that SD significantly mediates the relationship between trust and B-SR in the manufacturing industry of Ghana. The study also found the relationship to be partially mediated by SD. This result implies that SD accounts for some of the relationship between trust and B-SD. As such, there is not only a significant association between SD and B-SR, but also some direct correlation exists between trust and B-SR. Therefore, when there is trust between manufacturing firms and their suppliers, the relationship between them can be strengthened. Also, the presence of supplier development would similarly ensure that trust leads to improved relationships between the focal firms and their suppliers among the manufacturing firms in Ghana.

Also, the result implies that the presence of SD presents an able environment for suppliers and manufacturing firms to continue interacting progressively via trust which would in turn strengthen their relationships. This finding corroborates with empirically validated findings of past studies (Humphreys, Li & Chan, 2004; Shahzad, Sillanpaa, Sillanpaa & Imeri, 2016; Seyedghorban, Simpson & Matapatra, 2020; Patrucco, Harland, Luzzini & Frattini, 2022; Brookbanks & Parry, 2021; Faruquee, Paulraj & Irwan, 2021; Mallet, Kwateng & Nuertey, 2022; Parente, Murray, Zhao, Kotabe & Dias, 2022). This is because, previous studies have concluded that SD has a significant influence on both harnessing trusts among SC partners as well as fostering a positive buyer-supplier relationship to achieve mutual benefits.

Supplier Development Mediates the Relationships between (a) Top Management Support and (b) Trust and Sustainable Performance

This study finally developed two hypotheses to investigate the mediating role of SD in the causal linkages between (a) TMS and (b) trust and SP. The hypotheses (H6a and H6b) were analysed based on the t-stats and this section extensively discussed the findings.

H6a: Supplier Development Mediates the Relationship between Top Management Support and Sustainable Performance

The study's H6a was accepted and this was because supplier development (SD) significantly and positively mediates the link between top management support (TMS) and sustainable performance (SP) of Ghana's manufacturing firms. With the study reporting an insignificant direct effect but a significant indirect effect, it was found that SD fully mediates the association between TMS and SP. The implication is that TMS cannot directly affect SP in the absence of SD. As such, the relationship between TMS and SP will remain the same if suppliers remain underdeveloped by the manufacturing firms in Ghana. This finding arises from the fact that, stakeholders including customers are mounting more pressures on top management of various businesses including manufacturing firms to adopt sustainable ways of operating in order to attain sustainable outcomes. This situation has also pushed top management to develop their suppliers because of their vital roles in terms of providing sustainable inventories and information.

As such, through supplier development, top management would be able to realign the operational intuitions of suppliers toward providing sustainable inventories in order to achieve sustainable performance. Therefore, top management of the firms studied would struggle to achieve sustainable

performance if they fail to develop their suppliers. The study's finding is similar to previous studies (Busse, Schleper, Niu & Wagner, 2015; Gualandris & Kalchschmidt, 2015; Agan, Acar & Neureuther, 2018; Maestrini, Patrucco, Luzzini, Caniato & Maccarrone, 2021; Mallet, Kwateng & Nuertey, 2022; Parente, Murray, Zhao, Kotabe & Dias, 2022). These studies revealed that SD is a viable SC practice that top management can use to achieve SP.

Hypothesis 6b: Supplier Development Mediates the Relationship between Trust and Sustainable Performance

The last hypothesis (H6b), proposed that the relationship between trust and SP is significantly mediated by SD in the manufacturing industry of Ghana. Based on the PLS output, the result was accepted to advance that SD successfully mediates in positive terms the predictive relationship between trust and SP. More precisely, the study revealed that SD plays a partial mediation role in the relationship; thus, SD accounts for some, but not all, of the linkage between trust and SP in the manufacturing industry. The implication is that SD does not only have a significant relationship with SP, but also trust has some direct correlation with SP. As such, manufacturing firms can still achieve their sustainable performance goals if they trust their suppliers with or without developing them. Also, the firms' ability to develop their suppliers and also trust would yield better sustainable performance; thereby, meet stakeholders' expectations.

The study's finding is in line with related studies (Agarwal & Narayana, 2019; Seyedghorban, Simpson & Matapatra, 2020; Patrucco, Harland, Luzzini & Frattini, 2021; Brookbanks & Parry, 2021; Mallet, Kwateng & Nuertey, 2022; Parente, Murray, Zhao, Kotabe & Dias, 2022) who agreed that SD is an effective practice that has the ability to influence the sustainable outcomes of businesses

when resources are adequately and efficiently allocated. Also, trust harnesses SC relationships which could have positive influence on the probability of manufacturing firms wanting to engage a supplier for an extended period of time or develop them for both current and future supply interactions. Therefore, ensuring supplier development plays an important role in the relationship between trust and sustainable performance within the scope of manufacturing firms in Ghana.

Chapter Summary

The chapter has provided information regarding the findings in respect of the specific research objectives that were considered in the study. The findings were fully discussed, given their practical relevance, managerial implications and previous empirical postulations as evidenced in the literature review. The next chapter focused on the concluding sections of the study.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

The chapter emphasised on the research's summary, conclusions made, and recommendations. It concluded with some proposals for further research.

Summary of the Study

The study purposely investigated the mediating of supplier development in the relationship between drivers of supplier development and supplier development outcomes in the manufacturing sector of Ghana. To achieve the study's purpose, the succeeding specific objectives were developed to:

1. examine the effect of top management support and trust on supplier development of manufacturing firms in Ghana
2. evaluate the effect of top management support and trust on buyer-supplier relationship of manufacturing firms in Ghana
3. assess the effect of top management support and trust on sustainable performance of manufacturing firms in Ghana
4. investigate the effect of supplier development on buyer-supplier relationship and sustainable performance of manufacturing firms in Ghana
5. ascertain the mediating effect of supplier development on the relationship between (a) top management support and (b) trust and buyer-supplier relationship of manufacturing firms in Ghana
6. analyse the mediating effect of supplier development on the relationship between (a) top management support and (b) trust and sustainable performance of manufacturing firms in Ghana.

With reference to the study's purpose, 12 hypotheses were developed and tested based on the positivism paradigm, quantitative approach and explanatory research design. The study was also underpinned by the resource-based view theory and network theory. With an estimated number of 7,105 manufacturing firms operating with the Accra, Kumasi, Tema and Takoradi metropolises, the study randomly sampled 365 of them. Structured questionnaires were distributed to key personnel comprising procurement officers, purchasing and supply chain officers and a valid data set of 320 with a valid response rate of 87.7% was obtained. The study then processed the data using the IBM SPSS Statistics (v. 26) and Smart-PLS3. The hypotheses were tested using the PLS-SEM technique and extensively discussed in Chapter four. The ensuing sections focused on the study's summary of major findings.

Effect of top management support and trust on supplier development of manufacturing firms in Ghana

Research objective one, for instance, investigated whether (a) TMS and (b) trust directly affects SD of manufacturing firms in Ghana. To attain this objective, hypotheses 1a and 1b were tested and subsequently accepted. The implication is that when top management supports their firms' initiatives notably supplier development, it could be directly achieved. Simply put, manufacturing firms in Ghana can be able to develop their suppliers if they receive the support of their top management. Thus, any improvement in TMS would lead to a direct improvement in SD of manufacturing firms in Ghana. Also, after developing and testing H1b, the result revealed that trust building has a direct positive effect on SD. The implication is that trust building between manufacturing firms and their suppliers would play a significant role in supplier development. Thus, when SC

actors such as focal firms and suppliers continue to trust each other, it would play a beneficial role in achieving supplier development.

Effect of top management support and trust on buyer-supplier relationship of manufacturing firms in Ghana

Research objective two investigated the effects of (a) top management support (TMS) and (b) trust on buyer-supplier relationship (B-SR). To achieve this, two hypotheses (H2a and H2b) were tested, of which the outcomes were reported. In terms of H2a, the study revealed that TMS has a direct positive effect on buyer-supplier relationship (B-SR). These results imply that when top management supports manufacturing firms' operational activities, it would strengthen existing relationships with suppliers; but, have no influence on the firms' SP. Also, the study revealed that trust among supply chain partners play crucial roles in improving B-SR. The results imply that trust building plays valuable roles in strengthening existing relationships between the manufacturing firms and their suppliers.

Effect of top management support and trust on sustainable performance of manufacturing firms in Ghana

In terms of objective three, the study tested two hypotheses (H3a, H3b) to reveal the effects of (a) TMS and (b) trust on SP. In terms of H3a, the study revealed that TMS has no direct effect on the sustainable performance (SP) dimension of SD outcome. Therefore, SP would remain the same while B-SR improves when top management supports the activities of their manufacturing firms in Ghana. The study also revealed that trust among supply chain partners play crucial roles in improving SP. It also plays an important role in ensuring that these firms attain their sustainable performance goals.

Effect of supplier development on buyer-supplier relationship and sustainable performance of manufacturing firms in Ghana

The study also established the effects of supplier development on (a) B-SR and (b) SP by testing two hypotheses (H4a, H4b). After the PLS analysis, it was revealed that SD plays a crucial role in improving both B-SR and SP. The results imply that when manufacturing firms focus on developing their suppliers, it would yield stronger relationships with their suppliers and also help them attain their sustainable performance objective. Simply put, focusing on SD would lead to significant improvement in B-SR and SP of the manufacturing firms in Ghana. *The mediating effect of supplier development on the rela-tionship between (a) top management support and (b) trust and buyer-supplier relationship of manufacturing firms in Ghana*

Research objective five also investigated the mediation role of SD in the relationship between (a) TMS and (b) trust on B-SR. To attain this objective, H5a and H5b were tested and the study revealed that SD significantly mediates the relationship between TMS and B-SR. After further analysis, it was revealed that SD plays a partial mediation role in the linkage between TMS and B-SR, the implication is that, SD does not completely affect B-SR, although it affects SP totally. As such, the relationship between TMS and B-SR can still exist without SD. Also, the study revealed that SD significantly mediates the relationship between trust and B-SR. Precisely, the link between trust and B-SR is partially mediated by SD. The implication is that, although manufacturing firms can directly build stronger supplier relationships via trust, this goal can also be indirectly achieved when suppliers are developed.

The mediating effect of supplier development on the relation-ship between (a) top management support and (b) trust and sustainable performance of manufacturing firms in Ghana.

Finally, the study investigated the mediating role of SD in the correlation between (a) TMS and (b) trust and SP in the manufacturing firms in Ghana. It was found that SD plays a full mediation role in the causal linkage between TMS and SP. As such, the association between TMS and SP cannot exist in the absence of SD. Thus, manufacturing firms in Ghana would struggle to perform sustainably even when their top management supports them unless they emphasis SD. The study also revealed that the link between trust SP is partially mediated by SD. The implication is that, although manufacturing firms can directly achieve sustainable performance via trust, this goal can also be indirectly achieved when suppliers are well developed.

Conclusions

The study established the effects of drivers of supplier development (trust [T] and top management support [TMS]) on supplier development outcomes (sustainable performance [SP] and buyer-supplier relationship [B-SR]) with the mediating role of supplier development (SD) within the manufacturing industry of a developing economy like Ghana. The study developed six (6) specific objectives which were largely achieved. The following conclusions were hereby drawn based on the key findings:

In relation to objective one, the study found both TMS and trust to promote SD of the manufacturing firms in Ghana. The resource-based view theory asserts that support from top management is an important resource that cannot be downplayed if firms aim to develop their suppliers. Similarly, the network theory

suggests that manufacturing firms can successfully build networks and subsequently develop their suppliers if there is adequate trust among the parties whereas top managers are in support of such development. Previous studies have asserted that top management support and trust building are crucial to supplier development. In conclusion, top management support and trust are crucial elements in supplier development within the manufacturing industry in Ghana.

With respect to objective two, the study found TMS and trust to significantly and positively affect B-SR. These findings were marginally supported by previous studies which revealed that when top management team supports a firm's suppliers, it could play crucial roles in relationship building and sustainable performance. Previous studies have also similarly revealed that relationships between focal firms and suppliers cannot be built without trust. Hence focal firms would struggle to develop their suppliers if the level of trust among them is low. Hence, it was concluded that both TMS and trust are key predictors of buyer-supplier relationships within Ghana's manufacturing sector.

In terms of objective three, the study found that TMS has no significant effect on SP; suggesting that receiving adequate support from top managers with respect to a firm's sustainability initiatives does not necessarily lead to SP. However, the study found that trust among focal firms and their suppliers to promote SP. According to the network theory, trust is a key element in developing strong networks with SC actors; thus, lack of trust would impede relationship building and invariably affect sustainable performance. Therefore, the study concluded that manufacturing firms in Ghana would not witness any improvement in SP regardless of the quantum of support or assistance they would receive from

top managers. Trust, on the other hand, is a necessity for firms that intend to attain higher sustainable performance.

In relation to objective four, the study found that SD plays a significant positive role in B-SR and SP of manufacturing firms in Ghana. Previous studies have revealed that when manufacturing firms focus on developing their suppliers, it could be key to establishing stronger relationships between them. Also, these firms would be able to achieve their performance outcomes including SP because the suppliers would be willing to supply sustainable materials and also actively involve themselves throughout the production stages. These assertions are also in line with the network theory which posited that firms can achieve better outcomes including SP and B-SR if they focus on SD. The study, therefore, concluded that, SD is an important element in relationship building and sustainable performance of Ghanaian manufacturing firms.

In terms of objective five, the study revealed that the relationship between (a) TMS and (b) trust and B-SR are partially mediated by SD. The finding was in line with similar studies which asserted that developing suppliers plays a role in ensuring that top management support leads to better relationship building with suppliers in a given manufacturing industry. Other studies have also revealed that developing suppliers would ensure that the trust a focal firm has for its suppliers could lead to positive outcomes such as relationship building. Therefore, it was concluded that SD plays a partial mediating role in the causal link between (a) TMS and (b) trust and B-SR Hence, supplier development is needed to achieve stronger buyer-supplier relationships when there exist trust and top management support within Ghana's manufacturing industry.

With respect to objective six, it was found that the causal relationship between TMS and SP is fully mediated by SD. In line with related studies, top management can achieve SP when they invest in their suppliers via SD., it, however, plays a full or complete role in the link between TMS and SP. However, SD plays a partial mediation role in the relationship between trust and SP. This finding was buttressed by previous studies that revealed that although trust can directly affect lead to improved sustainable performance, ensuring supplier development could play indirect roles in this regard. The study, therefore, concluded that SD fully mediates the link between TMS and SP while partially mediating that of trust and SP within the manufacturing industry in Ghana.

Generally, the study concluded that SD drivers comprising TMS and trust play significant roles in SD outcome comprising B-SR and SP within the manufacturing industry in Ghana. The study also concluded that SD significantly mediates the linkage between the drivers of SD and SD outcome in the industry understudy. The study's conclusions were largely in line with previous studies.

Recommendations

Based on the conclusions drawn, the following recommendations were hereby made:

In terms of objective one, it was concluded that TMS and trust significantly influence SD within Ghana's manufacturing industry. In view of this, the study recommended that top managers should actively involve themselves in supplier development by creating conducive environments for it via allocating adequate resources and technologies and also, involving the suppliers in corporate or strategic decision-making processes. It was also recommended that management of the manufacturing firms should continue to build trust with their

suppliers in order to achieve stronger supplier development. Suppliers can never be developed when focal firms do not trust them; thus, absence of trust in relationship building is a recipe for disaster.

In terms of objective two, the study recommended that top management of manufacturing firms in Ghana should support and commit to building stronger relationships with their suppliers. This can be achieved when top managers do not only support relationship building by mere words but by actions such as allocation of resources, information sharing, among others. It was also recommended that management of these firms should continue to build trust with their suppliers in order to continuously attain stronger relationship building. More precisely, top management should ensure that they build mutual trust with their suppliers and other partners in the supply chain.

Regarding objective three, the study recommended that top managers should continue to support and invest in sustainable initiatives of their respective firms in order to achieve SP although the relationship was not significant. Despite this study's finding, top managers involvement in attaining SP within the manufacturing industry can never be understated; hence, TMS should be considered as an important resource in the RBV theory as far as B-SR is concerned. It was also recommended that management of these firms should continue to build trust with their suppliers in order to continuously attain better sustainable performance in the manufacturing industry of Ghana. Similarly, management should also that they trust and actively involve their suppliers throughout their operational activities in order to achieve expected sustainable initiatives including sustainable performance.

In terms of research objective four, the study concluded that SD plays a valuable role in B-SR and SP of the manufacturing firms' understudy. In light of this, the study recommended that policymakers including the Ministry of Trade and Industry and key industry players notably Ghana Enterprise Agency should develop policies that aim at supplier development in the manufacturing industry. More precisely, these authorities should provide a comprehensive framework to guide management of the manufacturing firms during supplier development in order to promote B-SR and sustainable performance. Also, management should consider SD as a key strategic tool and give it the needed attention in order to attain SD outcomes in the manufacturing industry of Ghana.

The study also recommended that management of the manufacturing firms should emphasise or prioritise SD so far as the relationship between (a) TMS and (b) trust and buyer-supplier relationship is concerned. Top management, for instance, should channel maximum efforts and resources into SD in order to promote relationship building with their suppliers. Also, they should provide adequate training packages and also invest in their suppliers amid trust building in order to achieve the SD outcomes in Ghana's manufacturing industry.

With respect to objective six, the study finally recommended that management of the manufacturing firms should allocate adequate resources (i.e., technology, technical expertise, funds, information) into supplier development in order to enjoy associated benefits such as sustainable performance. Also, for the relationship between trust and supplier development to be stronger, focal firms should encourage supplier development. It was finally recommended that supplier development should be considered as a key element in the network theory so far as the issues of TMS and SD outcomes are concerned.

Suggestions for Further Research

This study investigated the mediating role of SD in the relationship between drivers of SD and SD outcomes of manufacturing firms within the Takoradi, Tema, Kumasi and Accra metropolises of Ghana. As such, the study was limited in geographical scope; thus, further studies could address this by including other manufacturing firms across the country in order to promote generalisation of findings. Also, potential researchers could conduct this study on the sub-sectors of the manufacturing industry since this study focused on the composite of the firms in the industry. Finally, this study relied on the quantitative approach; thus, future researchers could adopt the mixed methods approach in a bid to obtain both qualitative and quantitative outcomes in order to expand current literature on the issue investigated.

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APPENDIX A

Questionnaire on "Drivers and Outcomes of Supplier Development among Manufacturing Firms in Ghana."

Dear Sir/Madam,

I am a master student from the Department of Marketing and Supply Chain Management, University of Cape Coast Business School. I am carrying out a study on the topic, **"Drivers and Outcomes of Supplier Development among Manufacturing Firms in Ghana"** and your reputable institution has been selected for data for this academic purpose only. Your views are very relevant to the study and every information you provide would remain highly confidential. Thank you so much for accepting to participate in the study.

PART A

Please on a scale of 1 to 7, indicate the extent to which you agree to each of the statements below, where **1 – strongly disagree, 2- Disagree, 3- Somewhat disagree, 4- Neutral, 5- somewhat agree, 6-Agree and 7 – Strongly agree.**

DRIVERS		**RESPONSES**						
		1	2	3	4	5	6	7
T1	We believe the information provided by the supplier							
T2	The supplier is concerned that our business succeeds							
T3	The supplier keeps our interest in mind							
TMS1	Top management is supportive of our efforts to improve purchasing department							
TMS2	In this company, purchasing is considered a vital part of our corporate strategy							
TMS3	Purchasing views are considered important in most top managers eyes							
TMS4	The company's top management is aware of supplier development importance							
SUPPLIER DEVELOPMENT								
DS1	Training of employees of key suppliers							

DS2	Our firm has undertaken supplier development with supplier X through training of employees from supplier X							
DS3	Direct investment in supplier facilities							
DS4	Direct investment in supplier training							
DS5	Our firm has undertaken supplier development with supplier X through giving technological advice							
DS6	Our firm has given product development advice							
DS7	Our firm has given quality related advice							
DS8	Our firm has undertaken supplier development with supplier X through the transfer of implicit knowledge							
DS9	Does your organization regularly attend meeting at supplier locations							
DS10	Do representatives of your organization regularly attend formal support groups at suppliers' locations							
DS11	Does your organization have a supplier certificate program in place							
IND1	Promise of current benefits such as higher volume of present item							
IND2	Promise of future business such as consideration for future business							
IND3	Recognition of suppliers' achievement or performance in the form of awards							
IND4	We have a formal certification program							
IND5	Our company has a formal system to track the performance of the suppliers we deal with							
IND6	Our firm has a formal program for evaluating and recognizing suppliers							
IND7	Our firm has undertaken supplier development with supplier X through auditing supplier X							

IND 8	Our firm rewards or give recognition for progress							
IND 9	Our firm visits suppliers' premises to help supplier improve its performance							
IND 10	We use supplier certification program to certify supplier quality							
IND 11	We evaluate suppliers' price, quality and delivery performance regularly							
IND 12	We regard the evaluation results as the basis to determine if assistance required to suppliers							
BUYER-SUPPLIER RELATIONSHIPS								
BSR 1	We believe that over the long run, our relationship with suppliers will be profitable							
BSR 2	Maintaining a long-term relationship with this supplier is important to us							
BSR 3	We focus on long term goals in this relationship							
BSR 4	We willing to make sacrifices to help this supplier from time to time							
BSR 5	We share information with our suppliers							
BSR 6	We frequently interact with our suppliers							
BSR 7	We jointly plan with our suppliers							
SUSTAINABLE PERFORMANCE								
SP1	Supplier development effort has increased our market share							
SP2	Supplier development effort has increased return on investment							
SP3	Supplier development effort has increased our sales growth							
SP4	Supplier development has reduced odour emissions and solid waste							

SP5	Supplier development effort has helped minimize the environmental impact of its activities							
SP6	Supplier development efforts has reduced the consumption of hazardous materials							
Sp7	Supplier development effort has improved work safety							
SP8	Supplier development has improved relationship with community and stakeholders							
SP9	Supplier development effort has improved living quality of surrounding community							

PART B: DEMOGRAPHIC INFORMATION

Please give answers by ticking (√) in the box for each statement/question and kindly write when applicable.

1. Sex Female [ ] Male [ ]

2. What is your highest level of educational qualification?

a) Diploma Degree [ ] **b)** Bachelor Degree [ ]

c) Post Graduate degree [ ] **d)** Professional Qualification [ ]

3. I have worked with this institution for about **a)** 1 year [ ] **b)** 2 years [ ] **c)** 3 years [ ] **d)** 4 years **e)** 5 years and above

4. What is your job designation? **a)** Procurement Officer/Manager **b)** Assistant/Deputy Procurement Officer/Manager c) others

5. Which sector of the manufacturing firm are you employed? **a)** construction **b)** food and beverage **c)** Textile d) others

Thank you so much