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Achieving Sustainability in Global Supply Chains

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Walden University

College of Management and Technology

This is to certify that the doctoral study by

Parthiv G. Patel

has been found to be complete and satisfactory in all respects,
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Walden University

2020

Abstract

Achieving Sustainability in Global Supply Chains

by

Parthiv G. Patel

MS, San Diego State University, 1986

MBA, University of Cincinnati, 1983

B.Com, University of Bombay, 1979

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

February 2020

Abstract

Most multinational company leaders lack effective strategies to achieve sustainability in their supply chains. Multinational company leaders who struggle to sustain supply chains, experience poor business performance creating risks of business failure. Grounded in systems theory, a qualitative multiple case study was conducted to explore successful strategies that leaders of multinational companies implemented to achieve sustainability throughout their supply chains. The participants comprised 6 business leaders of multinational consumer packaged goods companies in northern Vermont who have successfully implemented strategies for achieving sustainability in their global supply chains. Data were collected through semistructured face-to-face interviews, internal company supply chain documents, and supply chain partner company websites. Thematic analysis of the collected data was performed. Five themes coalesced from the analyzed data: consumer brand-led sustainability initiatives, cross-cultural communication of mutual business objectives, training and education of supply chain partners, technology platform alignment between supply chain partners, and mitigation of political influences. Implementing the findings of this study may contribute to positive social change by increasing employment opportunities resulting from stable businesses and economic development in the communities where the companies operate.

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Dedication

This dissertation is in memory of my late parents, who would have been so proud to see me continue my lifelong learning process. I also dedicate this to my wife, Kosha, and my son, Rishi, who have not only encouraged me in my long and intense doctoral journey, but have also supported me in more ways than I can count. Thanks from the bottom of my heart.

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First and foremost, I want to thank my committee chair Dr. Carol-Anne Faint who has been an absolutely wonderful mentor and a constant source of guidance, support and encouragement throughout my doctoral journey. I also want to thank my second committee member Dr. Tim Truitt, and my URR Dr. Deborah Nattress for their guidance and support. Additionally, I thank my academic advisors and the librarians at Walden University who provided assistance every time I needed it. And finally, I want to thank my colleagues in the DBA program and my colleagues at work who encouraged and supported me along the way to the completion of this most rewarding doctoral program.

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Section 1: Foundation of the Study

Leaders of multinational companies face challenges in implementing product and environmental sustainability goals due to the complex network of global supply partner companies with whom they have to coordinate their operations. Supply chain managers across the globe are finding it difficult to manage the increasingly complex supply chains despite adopting a variety of risk mitigation strategies (Gouda & Saranga, 2018). The modern global economy has developed interconnected and complex supply chains, and firms with global supply chains face more potential points of failure due to global customs, foreign regulations, and the possibility of political and economic instability in a source country (Jabbarzadeh, Fahimnia, & Sabouhi, 2018). Despite the challenges and problems involved in managing global supply chains, leaders of multinational companies are expected to develop strategies for gaining competitive advantages in their markets and for the financial performance of their companies. Effective management of a company's supply chain has been recognized as a critical factor for firms in gaining a competitive advantage, and the success of any firm depends on its ability to manage and integrate its intricate network of relationships with its suppliers and customers (Afshan, Chatterji, & Chhetri, 2018). Because successful management of global supply chain partners is critical for the success of multinational companies, my objective in this study is to explore strategies that leaders of multinational companies use to coordinate and manage their global supply chains.

Background of the Problem

In highly globalized and fragmented business environments, corporations do business with external supply chain partners, and without the truly reliable supply chain partners, they may not be able to achieve sustainability goals (Ha-Brookshire, 2017). Global supply chain disruption risk management has become a vital part of supply chain management strategy and supply chain disruptions, and the resulting losses may threaten the financial state of firms (Tadeusz, 2017). Disruptions in the production process of a supplier may lead to ripple effects, which cascade downstream to the local firm and increase its risk exposure, which in turn makes it challenging for managers to design resilient supply chains (Mizgier, 2017).

Leaders of multinational companies are also expected to achieve environmental and social sustainability within their global supply chains. Gouda and Saranga (2018) contended that firms have been adopting various kinds of environmental and social sustainability practices in recent times to reduce their carbon footprints and to improve their image on the social front. The adoption of environmentally-friendly practices in logistics and business operations throughout a company's supply chain provides opportunities to build competitive advantages against the company's competitors (Zhang, Golpira & Khan, 2018). Companies can either improve or worsen social conditions by making changes in their global supply chains, and empirical evidence suggests that companies that adopt sustainable practices in their supply chains significantly outperform their counterparts over the long term both in terms of stock market and accounting performance metrics (Sodhi & Tang, 2018).

Problem Statement

Supply chain sustainability is strictly correlated to the performance of the entire supply chain, and all the companies that contribute to manufacturing the final products and semifinished goods require consideration and tracking (Marconi, Marilungo, Papetti, & Germani, 2017). Companies with unsustainable supply chains, due to frequent supply chain disruptions, experience 33-40 % lower stock market returns compared to industry benchmarks (Yang & Fan, 2016). The general business problem is that multinational companies face multiple challenges in implementing sustainability policies throughout their supply chains. The specific business problem is that some leaders of multinational companies lack strategies to achieve sustainability throughout their supply chains.

Purpose Statement

The purpose of this qualitative multiple case study was to explore strategies that leaders of multinational companies implement to achieve sustainability throughout their supply chains. The participants for the proposed study included business leaders of three medium sized consumer packaged goods companies in northern Vermont, selected because they have successfully implemented strategies to achieve sustainability development in their supply chains. The study's contribution to social change may include potential improvement in the ability of leaders in the consumer-packaged goods industry to develop and implement more effective sustainability development strategies in their supply chains, thus enhancing societal, environmental, and economic outcomes. Sustainability development can be defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Steen & Palander, 2016). Companies implement sustainability around the triple bottom line of people, planet, and prosperity, implying the social dimension of human well-being, the ecological dimension of environmental stewardship, and the economic dimension of human welfare (Van Dam & Van Trijp, 2011). The study's findings may help other business leaders in improving their strategies to achieve sustainability in their particular supply chains, and thus enhance their own societal, environmental, and economic outcomes.

Nature of the Study

For the proposed study, I employed a qualitative multiple case study method because a qualitative research method is best suited to answer my particular research question. Typically, studies in the field of management will include one of three methods: quantitative, qualitative, or mixed methods (Antonakis, Bastardoz, Liu, & Schriesheim, 2014). The characteristics of a qualitative method include scholarship that primarily relies on nonquantitative data and inductive theorizing in a natural setting (Bansal, Smith and Vaara, 2018). Qualitative data are nonreduceable text, including words and visuals, delivered in static or dynamic form. Although these qualitative data can be digitized, synthesized, and even counted, doing so first requires interpretation of the data to discern patterns and insights (Bansal et al., 2018). Conversely, quantitative research involves testing theories using hypotheses (Antonakis et al., 2014). Under the quantitative approach, a researcher uses hypotheses to test the relationship between dependent and independent variables. Due to the exploratory nature of this study, examining the relationship between dependent and independent variables is not appropriate and thus a quantitative method is not suited for this study. The mixed methods research method requires the integration of both qualitative and quantitative data (Sligo, Nairn, & McGee, 2018). Due to the required inclusion of the quantitative method, a mixed methods approach is not suitable for this study.

The four designs I considered in employing a qualitative research method included (a) narrative, (b) ethnography, (c) phenomenology, and (d) case study. Narrative research is suitable to study life stories of individuals but not the organizations (Germeten, 2013). The focus of this study was on companies rather than on individuals, and because of this, a narrative research design was not be appropriate. In ethnography, the main strategy is purposive sampling of a variety of key informants, who are most knowledgeable about a culture and are able and willing to act as representatives in revealing and interpreting the culture (Moser & Korstjen, 2018). As the study relates to companies rather than specific cultural groups, I chose not to use ethnography as a research design. Phenomenology is a research approach to understand and capture the meanings of individuals' lived experiences experiencing a common phenomenon (Berglund, 2015). Since my study focused on business issues rather than individual experiences, phenomenology as a research design was not appropriate. A qualitative case study research method was the most appropriate because the purpose of the study was to explore the issues and obstacles that arise in achieving sustainability in global supply chains. Case study research is an investigation and analysis of a single or multiple cases, intended to capture the complexity of the object of study, and as a study design, a case study makes use of naturally occurring sources of knowledge, such as people or observations of interactions that occur in a physical space. Multiple data collection and analysis methods are adopted to further develop and understand the case, shaped by context and emergent data (Hyett, Kenny & Dickson-Swift, 2014).

Research Question

The central research question for this study was: What strategies do leaders of multinational consumer packaged goods companies implement to achieve sustainability throughout their supply chains?

Interview Questions

The strategy related interview questions for this study included:

1. What strategies does your organization have to ensure product sustainability throughout your supply chain?
2. What strategies are currently employed by your organization to realize environmental sustainability in your supply chain?
3. What strategies are used by your organization to impact social sustainability among your supply chain partners?
4. How does your organization measure the success and the impact of the current strategies you have for both environmental and social sustainability?
5. What are the major internal as well as external obstacles your organization has encountered in implementing the current sustainability strategies?
6. How has your organization dealt with these obstacles?

7. How successful have your attempts been in dealing with the obstacles you mentioned?
8. In dealing with international partner companies within your supply chain, what specific cultural and political issues prevent the achievement of product sustainability?
9. How does your organization deal with such cultural and political issues?
10. What additional information can you provide to assist me in understanding your organization's long-term outlook on achieving global supply chain sustainability?

Conceptual Framework

This study drew upon key elements of systems theory as applied to management functions within organizations. Von Bertalanffy (1972) pioneered the concept of general systems as the coordination of parts and processes within organized entities such as social groups and technological devices. Systems theory is a body of literature that explores the dynamic relationship between humans and material objects and technology in the generation of action (Booth, Sinclair, Brennan, & Strudwick, 2017). Because I focused on global supply chains, its very nature involves a dynamic relationship between humans, material objects, and technology that leads to the creation of products. Some of the key concepts in complex adaptive systems theory are self-organization, emergence, interdependencies, and hierarchical nesting of levels (Ludvigsen, Law, Rose, & Stahl, 2017). Global supply chains involve many different companies that have their own self-designed organizations and that need to interact with each other in a hierarchical structure in an interdependent manner. As such, the key concepts of a theory addressing complex adaptive systems directly applied to my study.

Systems theory provides a framework for studying the interactions of parts of the system, and it places emphasis on the structure of organizations as a series of interrelated sub-systems in which each subsystem is interdependent on the other (Mania-Singer, 2017). Systems theory views all organizations as open systems in that each system is constantly influenced by and places influence on the larger environment by operating in a continuous feedback loop that consists of inputs, internal transformation, outputs, and recursive feedback (Mania-Singer, 2017). The strong interdependence between all companies in a global supply chain is due to each company in the supply chain receiving inputs, performing internal transformation of the inputs, and producing outputs in a recursive feedback loop, which are the key elements of systems theory.

Operational Definitions

The following operational definitions assist readers in comprehending the meaning of some specialized terms I used throughout the study.

Business Sustainability: Business sustainability is the process of achieving financial economic sustainability performance in creating shareholder value while protecting the interests of all other stakeholders by focusing on non-financial environmental, social, ethical, and governance sustainability performance (Zabihollah, 2018).

Customer Relationship Management: Customer Relationship Management (CRM) is a philosophy to manage relations with customers and other stakeholders associated with an organization and focuses on customer retention, identification and selection with the enablement of technology to deliver value (Mukherjee & Prasad, 2017).

Global Operations Network: A global operations network consists of the firm's own component and manufacturing plants, distribution system, transportation within the network as well as key suppliers and markets (Olhager, Pashaei, & Olhager, 2017).

Logistics: Logistics is the process of implementing and managing the efficient, cost effective forward and reverse flows of goods, services, and information between the point of origin and the point of consumption to meet customer requirements (Chang, 2017).

Procurement: Procurement is the act of buying products or services from an external supplier (Abolbashari, Chang, Hussain & Saberi, 2018).

Sales and Operations Planning: Sales and operations planning is a process to develop tactical plans that provide management the ability to strategically direct its businesses to achieve competitive advantage on a continuous basis by integrating customer-focused marketing plans for new and existing products with the management of the supply chain (Noroozi & Wikner, 2017).

Supply Chain: A supply chain is a set of three or more entities (organizations or individuals) directly involved in the upstream and downstream flows of products, services, finances, and/or information from a source to a customer (Jianlan, Yuzhong, & Tu, 2016).

Supply Chain Management: Supply chain management involves suppliers, manufacturers, distribution centers, and retailers to ensure the efficient flow of raw materials, work-in-process inventory, finished products, information, and funds among different facilities (Moghaddam, 2015).

Assumptions, Limitations, and Delimitations

The assumptions, limitations and delimitations for my study were as follows:

Assumptions

Assumptions in research are elements that researchers understand to be facts without proof (Kirkwood & Price, 2013). The assumptions that I included in my study, which all proved to be true, were as follows. First, I assumed that my interview participants had the freedom from their companies to answer my interview questions as fully as they possibly can without any organizational constraints put upon them. Second, I assumed that my interview participants had the requisite knowledge and information with which to answer all my interview questions. Third, I also assumed that the interview participants' responses regarding their supply chain partner companies were based upon sufficient knowledge about their partner companies' operations.

Limitations

Limitations include possible restrictions or weaknesses in the research study (Holloway & Galvin, 2016). My proposed study included the two primary limitations. First, the three companies that formed the basis of my case studies represented only three sub-sectors within the consumer-packaged goods industry, thus making the findings of the proposed study hard to generalize over the entire consumer packaged goods industry. Second, my study included responses only from leaders of multinational consumer packaged goods companies, who may lack some of the perspective of the lower-level managers within their companies. Both limitations made the findings of the study hard to generalize across multiple industries and different employee perspectives.

Delimitations

Delimitations represent the scope and boundaries of a research study (Snelson, 2016). The delimitations of my proposed study are as follows. First, my study included only three consumer packaged goods companies whose manufacturing operations are located in northern Vermont, and as a result, their manufacturing operations are not national in scope. Second, all three participant companies in my proposed study are medium-sized consumer packaged goods companies. Medium-sized businesses are businesses employing fewer than 500 employees (Lingard, Turner, & Charlesworth, 2015). Due to their medium sized operations, their supply chain issues may sometimes be different from those faced by larger companies.

Significance of the Study

The study is significant to business leaders in the consumer-packaged goods industry because it may have the potential to help them improve their strategies and business practices in achieving sustainability and minimizing disruptions in their global supply chains. Privett and Gonsalves (2014) identified the major issues leading to supply chain disruptions including a lack of coordination among the fragmented parts of the supply chain, differing inventory management systems among the various companies in the supply chain, incomplete demand-related information between the companies in the supply chain, and human resource dependency on expertise, training, and personnel capacity between the companies in the supply chain.

Contribution to Business Practice

The study may have significance to business leaders in consumer packaged-goods companies as it holds the potential for them to improve their supply chain management strategies and practices. Extended supply chains are more vulnerable, exposing organizations to higher levels of risk due to the continuing uncertainty for the world economy and business. Trends such as increased outsourcing/offshoring, advances in information technology, the development of complex global supply chains, and supply chain sustainability are increasingly perceived as an important source of cost reduction and essential for the long-term profitability of a firm (Giannakis & Papadopoulos, 2016). Global supply chain disruption risk management has become a vital part of supply chain management strategy and supply chain disruptions and the resulting losses may threaten financial state of firms (Tadeusz, 2017).

In today’s highly globalized and fragmented business environments, corporations do business with external supply chain partners, and without the truly sustainable supply chain partners, they may not be able to achieve sustainability goals (Ha-Brookshire, 2017). This study explored best practices in global supply chain sustainability, and the findings and recommendations of this study may help inform the strategies and business practices that business leaders formulate and implement to enhance sustainability and to reduce disruptions in their global supply chains.

Implications for Social Change

The findings and recommendations from the study may have implications for positive social change including potential improvements in the ability of business leaders in consumer-packaged goods companies to implement effective supply chain strategies that minimize disruptions and enhance sustainability. Sustainability in the supply chain is of paramount importance to production economies as it results in reduced health and safety costs, lower labor costs, better product quality, shorter lead times, and enhanced reputation of companies (Mani, Gunasekaran, & Delgado, 2018). Achieving supply chain sustainability can contribute to stable employment conditions for multinational companies, which in turn, can lead to employees with healthier, more balanced lives, and a reduced feeling of job insecurity (Snorradottir, Tomasson, Vilhjalmsson, & Rafnsdottir, 2015). The findings of this study could also help leaders in other industries improve their supply chain sustainability strategies thus realizing the social benefits that come from more stable businesses including a more secure and productive employee base that in turn results in happier employees working to support their families and the communities in which they live.

A Review of the Professional and Academic Literature

In this study, I explored strategies that successful leaders in the consumer-packaged goods industry use to achieve sustainability in global supply chains. Supply chain sustainability is correlated with the performance of the entire supply chain, and all the companies that contribute to manufacturing the final products and semifinished goods require consideration and tracking (Marconi, Marilungo, Papetti, & Germani, 2017).

Companies with unsustainable supply chains, due to frequent supply chain disruptions, experience 33-40% lower stock market returns compared to industry benchmarks (Yang & Fan, 2016). Global supply chain disruption risk management has become a vital part of supply chain management strategy and supply chain disruptions, and the resulting losses may threaten financial state of firms (Tadeusz, 2017). In highly globalized and fragmented business environments, corporations do business with external supply chain partners, and without the truly sustainable supply chain partners, they may not be able to achieve sustainability goals (Ha-Brookshire, 2017).

Sources I used included Google Scholar, ABI/Inform Complete, Business Source Complete, and ProQuest Central. My search criteria included the following key terms: *supply chains, supply chain logistics, global operations networks, supply chain sustainability, supply chain resilience, supply chain disruptions, and supply chain management*. I also reviewed other materials, including books, dissertations, and government publications. In compliance with Walden University doctoral study requirements, I used 143 peer-reviewed publications, 77% published within 5 years of my graduation date of November 2019. Table 1 visually captures a summary of the sources of professional and academic literature I reviewed in this study.

Table 1

Literature Review Source Summary

	Older	2015	2016	2017	2018	2019	Total
Peer-reviewed journals	34	26	21	28	29	5	143
Government	2	0	0	0	0	0	2
Other	2	4	2	0	0	0	8
Total	38	30	23	28	29	5	153

In the following subsections, I provide a comprehensive synthesis of existing literature to broaden the understanding of concepts pertinent to the achievement of sustainability in global supply chains. I have organized this literature review into the following subsections: (a) the relevant theories, (b) alternative theories, (c) business sustainability in global supply chains, (d) environmental sustainability in global supply chains, and (e) social sustainability in global supply chains. The comprehensive analysis starts with a discussion of theories relevant to my proposed study. Then, I discuss alternative theories that I considered but were not appropriate to my proposed study. Finally, I address the topics that are pertinent to my proposed study relating to the achievement of sustainability in global supply chains.

The Relevant Theories

In this study, I explored and discussed theories relevant to the achievement of sustainability in global supply chains, including general systems theory, organizational decision-making theory, and resource dependency theory. Of the relevant theories, I focused on general systems theory as the conceptual framework of this study. Moreover, my discussion included the basis for not including the alternative theories that were also discussed in this section.

Systems theory. Von Bertalanffy (1972) pioneered the concept of systems theory as the coordination of parts and processes within organized entities such as social groups and technological devices. Systems theory is a body of literature that is characterized primarily by the dynamic relationship between humans and material objects and technology in the generation of action (Booth, Sinclair, Brennan & Strudwick, 2017). Because I will focus on global supply chains, their very nature involves a dynamic relationship between humans, material objects, and technology, which leads to the creation of products. Some of the key concepts in systems theory are self-organization, emergence, interdependencies, and hierarchical nesting of levels (Ludvigsen, Law, Rose & Stahl, 2017). Global supply chains involve many different companies that have their own self-designed organizations that need to interact with each other in a hierarchical structure in an interdependent manner, and as such, the key concepts of systems theory directly apply to my proposed study.

Systems theory provides a framework for studying the interactions of parts of the system and places emphasis on the structure of organizations as a series of interrelated subsystems in which each subsystem is interdependent on the other (Mania-Singer, 2017). Systems theory views all organizations as open systems in that each system is constantly influenced by, and places influence on the larger environment by operating in a continuous feedback loop that consists of inputs, internal transformation, outputs, and recursive feedback (Mania-Singer, 2017). In a global supply chain there is a strong interdependence between all companies involved and each company in the supply chain receives inputs, performs internal transformation of the inputs, and produces outputs in a recursive feedback loop, which are the key elements of systems theory.

McMahon and Patton (2018) contended that systemic thinking requires thinking in wholes, rather than individual parts of a system, and that although systems theory originated in the field of biology, the principles of systems theory could have applications in other fields including in the human sciences. Attesting to this wider application, systems theory has influenced disciplines as diverse as communication, business, ecology, philosophy, physics and engineering, and developments such as air conditioning, computers, and robotics (McMahon & Patton, 2018). The notion of systemic thinking as thinking of the whole system, and not just the individual parts of a system, logically and directly applies to global supply chains because the final products that are sold by multinational consumer packaged goods companies are made possible by the whole system of raw materials suppliers and intermediate parts producers which contribute to the final products sold to the end customers of multinational consumer packaged goods companies. Further, systems theory also encompasses the concept of open systems which are characterized by entities that interact and make exchanges with each other in the environments in which they exist (McMahon & Patton, 2018). The key characteristic that defines global supply chains is the existence of individual companies that comprise the supply chain and which interact and make exchanges with each other in the form of products, services, and financial payments.

Haye, Matus, Cottet, and Nino (2018) observed that systems theory developed the notion that in order for a living being to maintain itself against the background of the multiplicity of entities, levels, and processes of which it is a part, it should imply keeping the organization intact by self-governance over multiple local operations in order to make them work together towards one global end. The characteristics of self-governance and interdependence among all entities working towards the same goal in a system, as observed by Haye et al. (2018), describes the structure and the goals of global supply chains in the business world. Every company in a global supply chain maintains itself through self-governance and works with multiple other companies in an effort to work together to achieve the commonly shared objective of producing goods and services demanded by the end consumer. As such, systems theory directly applies to and adequately describes the operation of global supply chains.

Simola (2018) contended that systems theory remains highly valued, not only as a tool for understanding the relatively stable and persistent patterns that emerge within relational groups, but also for the insights into the processes through which relational groups might move toward greater growth and vitality. Systems theory applies directly to understand the business patterns that emerge within the companies that interact with each other in global supply chains, and it can also provide insights into the processes that occur within supply chains with a goal to move all companies in the supply chain towards greater growth and vitality. Within systems theory, each person comprises an element of various systems and also interacts both with and within a complex of lower-, higher-, and same-level systems. All inter-related systems and subsystems are believed to influence one another in reciprocal ways. Further, individual behaviors and outcomes both influence, and are influenced by, the systems and subsystems within which they occur (Simola, 2018). The companies that form global supply chains interact with each other at a variety of systems levels, and the actions of each company in the supply chain influence the actions and outcomes of all other companies in the chain in mutually reciprocal ways.

Dominici (2017) emphasized the need for systems thinking in the contemporary global business world by observing that the complexity of our times is due to social, economic, and organizational factors that imply relentless changes in the logic and the methods needed to steer business systems. Nowadays, the global business arena is more dynamic and interconnected than in the last century. Hence, it is necessary to implement a systemic view that considers business systems as complex systems. Considering firms and organizations as complex and interconnected systems means that it is not possible to comprehend them by taking into account only their components as separate and separable entities (Dominici, 2017). Global supply chains and the companies that participate in them are constantly impacted by social, economic, and organizational factors. Because they are interconnected in ways that make each company dependent on every other company in the supply chain, systems-level thinking is necessary to successfully anticipate events throughout the supply chain and to manage the operations within individual companies within the supply chain.

Puche, Ponte, Costas, Pino, and de la Fuente (2016) proposed that the systems theory approach of taking a holistic view of global supply chains, based on global optimization of the entire supply chain, performs significantly better than the traditional approach based on local optimization of operations within each company in an overall supply chain. Taking a systems approach to supply chain management enables companies within the supply chain to reap the benefits that accrue from collaboration and coordinated strategies among all the companies in the supply chain (Puche et al., 2016).

Yasar (2017) described the main elements of systems theory as a theoretical framework developed to explain the properties of organic and inorganic complex structures. According to the systems view, an organism or a living system has some holistic properties that cannot be found completely in the parts of the system. These properties arise as a result of the interaction between the parts, and they disappear if the system is reduced to physical or theoretical independent parts. All the parts become meaningful when they relate to each other. Contrary to the Cartesian view which is characterized by the need to analyze each part separately in order to understand the whole, the systems view is characterized by a holistic approach in which the parts can only be understood within the whole and within a context where the parts interact with the other parts (Yasar, 2017). The description of systems theory offered by Yasar (2017) mirrored the actual characteristics of global supply chains because the companies in the supply chain interact with each other constantly in a holistic system where the outputs of upstream companies in the supply chain become the inputs of downstream companies in the supply chain, and all parts of the supply chain become meaningful only when they relate to each other.

Ceric (2015) applied systems theory to the evaluation and management of information and communications technology and explained the elements of a system as being a set of two or more interrelated elements wherein the behavior of each element has an effect on the behavior of the whole. Further, the behavior of the elements, and their effects on the whole, are interdependent, as determined by the state or type of activity in at least one other part of the system, and that all subsystems have an effect on the behavior of the system, but none has a solely independent effect on it. Global supply chains reflect Ceric's (2015) characterization of how systems work because companies in a supply chain are interrelated in their operations, and the behavior of one company in the supply chain has an effect on the behavior of the whole supply chain due to the mutual interdependence of all companies that comprise the entire supply chain.

Araujo, Bucher-Maluschke, and Pedroso (2016) utilized systems theory in the study of the dynamics of family businesses, and they found that difficulties encountered by families in setting up boundaries between work and family were the cause of conflict, and that it was necessary, in the case of family businesses, to understand the bonds between people, the boundaries of the subsystems, the values, culture, and roles of both family and business, and the issues of power distribution and hierarchies among members of the various subsystems. Further, drawing on systems theory, Araujo et al. (2016) explained that it is important to regard every business as part of a larger social system with mutual interactions among all entities within the system, and controlling just the internal aspects of a business is not enough for defining the best strategies for competitiveness and sustainability of the business because systems theory views a family business as a system embedded in another larger one in which its members play an active part, have an impact on it, and are affected by the larger social system (Araujo et al., 2016). Similarly, global supply chains comprise a larger system within which individual companies are mutually interdependent in a manner that each individual company in the supply chain plays an active part, has an impact on all other related companies, and the actions within each company have to be monitored and adjusted based on the outputs and the actions of all other companies throughout the supply chain.

Gonul-Kochan, Nowicki, Sauser, and Randall (2018) employed an extension of systems theory called system dynamics in their study of issues and problems that arise in hospital supply chains, and emphasizing cloud-based technology solutions, they discovered that a lack of visibility of demand conditions, inventory levels, and production plans among the companies that form hospital supply chains caused shortages of required medications and supplies, the need for emergency orders and deliveries, and disruptions in hospital patient recovery experiences. Using a system dynamics approach, enabled by deploying appropriate cloud-based technology platforms, which elucidated and synchronized the interdependencies among all companies in hospital supply chains, hospitals were better able to improve demand and inventory visibility, reduce lead times, control and manage inventory levels, and improve patient care outcomes. Gonul-Kochan et al. (2018) demonstrated that implementing systems theory and thinking, along with appropriate technology solutions, helps deliver better outcomes in the management of hospital industry supply chains. Although the issues discussed in Gonul-Kochan et al.'s (2018) article pertained to the hospital industry, the same types of issues arise in supply chains in a variety of industries, which could also similarly benefit from the conceptualization and thinking underlying systems theory.

Alternative Theories

An analysis of the alternative theories I considered is contained in this section to ensure the appropriateness of selecting systems theory as the basis for the conceptual framework for my study. Each of the theories considered are relevant to the study of global supply chains. The alternative theories considered were the resource dependency theory and game theory. The following offers a discussion of the alternative theories and the basis for their exclusion in the conceptual framework for the study of achieving sustainability in global supply chains.

Resource dependence theory. One of the alternative theories I considered using was the resource dependence theory. One of the main issues addressed by resource dependence theory is why organizations constitute or join inter-organizational relationships. Klein and Diniz Pereira (2016) stated that one of the central propositions of resource dependence theory is that an organization's survival depends on its ability to acquire critical resources that it needs from the external environment, and that instead of passively subjecting itself to environmental forces, organizations actively devise and execute strategies to somehow acquire the critical resources they need. External dependencies in the business environment can result from factors such as increased market competition, limited credit supply, shortages of raw materials and energy caused by geopolitical changes, and the demands of industry-wide production (Klein et al., 2016).

Resource dependence theory considers organizations as coalitions that depend on their contexts and will adjust their structures and behavioral patterns in order to acquire and maintain external resources. Organizations are thus neither self-sufficient nor independent from resources of other organizations, and this interdependence leads to behavioral and outcome uncertainties regarding the actions of interdependent organizations (Schnittfeld & Busch, 2016). Mandrinos and Mahdi (2016) stated that resource dependence theory focuses on the relationship between organizations, resource dependence, and market recipients, and it produces mixed results due to the presence of various constituents. The theory, in particular, concentrates on how organizations access resources and how scarcity may drive the use of alternative resources. When organizations face scarcity in natural resources, they depend on other market players, while organizations with the most resources have the least dependence on others. Similarly, when organizations try to reduce resource dependence, different constituents come to the fore to form an environment that is better for organizations, and that the theory displays the relationship between organizations and market recipients as a platform to exert influence in order to reduce uncertainty emerging from dependence on vital natural resources (Mandrinos and Mahdi, 2016).

Shirodkar and Mohr (2015) approached the theory of resource dependence from an emerging markets perspective and they contended that one of the postulates of resource dependence theory is that the government is one of the most powerful actors in the external environment and is a major source of threat as well as opportunity to firms. Therefore organizations depending on resources held by external actors attempt to ‘‘create an environment’’ through political action. In emerging economies, foreign firms depend on resources such as access to local markets, low cost labor, and natural resources that are frequently controlled by the government and its regulatory agencies. Recent research in emerging economies has shown that firms can manage their external dependence on resources by adopting information based, financial incentives, and constituency building political strategies. Thus from a resource dependence theory perspective, different political strategies constitute distinct means to absorb the constraints associated with continued access to critical resources.

Doyle, Kelly, and O'Donohoe (2016) used the largest teaching hospital in Ireland as a case study to examine the effects of resource dependence theory, and they contended that resource dependence theory is an organizational theory that illustrates how organizations act in acquiring and maintaining the resources paramount for their ultimate survival. These resources can range from material ones (money, human resources) to information, social, or political support. Central to this theory is the environment in which organizations are embedded and which facilitates interconnections with other organizations that are crucial to resource acquisition. Environmental uncertainty and scarcity of resources may constrain organizations or threaten their survival, and this is more pronounced the more critical the resources are to an organization. Power and its inverse, dependence, are vital as inter-organizational dynamics of resource dependence as power accrues to those in control of resources, while dependence, experienced by others, is determined by the importance and concentration of resources provided (Doyle et al., 2016).

Loes (2015) adopted the tenets of resource dependence theory and applied them to internal decisions made by companies regarding personnel for expatriate positions and proposed that resource dependence theory (RDT) suggests that organizations seek control over resources to reduce uncertainty in future situations, identifying three conditions that are likely to affect the use of power in organizations: scarcity, criticality, and uncertainty. Although much of the research on RDT is focused on the organization and its external environment, the theory is useful to understand internal decisions and power struggles between departments (Loes, 2015).

Biniari, Simmons, Monsen, and Pizarro (2015) recognized the scarcity and concentration in the hands of a few of critical resources that organizations depend on and explained resource dependence theory as driving organizations to minimize their dependence on critical resources that are under the control of others through a variety of tactics. They cultivate alternative sources of supply, form cooperative agreements with the actor that holds the critical resources in order to stabilize the flow of resources, or merge with or acquire the actor who holds the critical resources in order to absorb their resource constraints. In effect, by successfully negotiating exchanges for resources, actors increase their ability to cope with environmental contingencies.

Although prior research shows that the resource dependence theory causes organizations to depend on each other and to form inter-organizational relationships with each other to secure the critical resources that they need to survive and stay in business, the theory is based on the fact that critical resources needed by organizations are in scarce supply, which in turn, causes organizations to form relationships based on scarcity of resources, and it does not provide an explanation for the voluntary nature of the association between organizations in global supply chains wherein business partner companies are chosen based on an organization's production requirements rather than on a scarcity of resources, and therefore, resource dependence theory is not appropriate as a conceptual framework for this study and is excluded from this study.

Game theory. Game theory is another theory that was considered for inclusion in the conceptual framework for this study. Er and Demir (2017) characterized game theory as a discipline that examines the process of sharing in which two or more decision makers are in an environment where resources are scarce. Decision makers in game models are called players, and these players prefer to earn a certain gain. In order to make a player's choice have a strategic meaning, a player plans to obtain a certain gain, and the determination of the gain is dependent not only by his own choices but by the decisions of other players who are also interacted with at the same time. There is interdependence among players, and decision-makers who are seeking to maximize their gain are either in conflict or in cooperation. Game theory is a mathematically-based conceptual framework, originally developed for economics, for predicting, describing, and explaining behavior in strategic situations, specifically those in which another person's decision-making will directly affect the outcome (Blake & Carroll, 2016).

Game theory is a theory of logical decision-making in humans which is applied to an extensive range of behavioral relations, and it typically involves several players, strategies or actions, and payoffs. Players usually select a strategy based on the expected payoffs, and they apply learning methods, such as reinforcement learning, belief learning, imitation, directional learning, and rule learning to guarantee gains. A player makes a decision based on his/her perception of the actions of other players (Yang, 2017).

Similarly, Heap (2017) characterized game theory as a theory of interactive decision-making by people when they are aware that the impact of their decisions and actions will depend on what other people in the situation also decide to do. In an application of game theory to the mobile communications industry, Gato Diaz, Ortiz Bouza, and Gomez (2017) contended that game theory provides the required analytical tools to study the behavior of rational players when they cooperate, and that in a cooperative scenario, players are allowed to form agreements among themselves that may impact their strategic choices as well as the results they realize.

The anticipatory and interactive decision-making that is central to game theory was described by Anantsuksomri and Tontisirin (2016) as being able to explain the competitive/cooperative behaviors of agents based on their strategic interactions. It is the study of how people behave when considering how others might respond to such behavior. In particular, the paradox of prisoner's dilemma has been extensively examined in the field of sociology and biology as a metaphor of a simple and interesting situation occurring when actions of rational individuals pursuing their self-interest lead to a worse outcome as a whole than if they had cooperated (Anantsuksomri and Tontisirin, 2016). Some of the major difficulties with game theory were discussed by Hedoin (2015) who explained that game theory is a theory of rational decision-making in strategic interactions that are characterized by the consequences of all players' decisions being a function of others players' decisions. One of the hallmarks of game theory is that it assumes that the players possess practical rationality, which assumes that players choose whatever is best for them according to their preferences and their beliefs, and that players also have epistemic rationality which guarantees that the players' beliefs are consistent between them and with the available information. However, the systematic study of the behavior of rational agents in both the practical and epistemic meanings has revealed unanticipated difficulties preventing game theorists to establish a fully predictive and explanatory theory of rational agents in strategic interactions (Hedoin, 2015).

Vesperman and Clark (2016) applied game theory and offered examples of game theory in the field of education and observed that a game tries to model any situation where independent decision-makers make choices, and that most game theory models focus on situations where individual choices impact the decisions that other people make. It is assumed that individuals are pursuing their own goals and that the combination of choices made in any given situation often results in a predictable result or equilibrium. However, when individuals solely pursue their own self-interests, while ignoring the decisions others may be making, they may hinder one another to the point where nobody achieves their goals (Vesperman & Clark, 2016). Game theory can be applied to both cooperative games in which the participants seek to form binding agreements and behave in ways that fulfil the requirements of the agreement, as well as in the situation of non-cooperative games which are characterized by the players deciding to not cooperate and instead seek to only satisfy their own goals and objectives, without regard to the decisions made by other individuals (Jobin & Lawal, 2017).

Elbeck, DeLong, and Zank (2016) also applied game theory in the field of higher education, and they contended that according to the tenets of game theory, strategic interactions are modeled between two or more decision-makers within an environment that contains a governing set of rules and outcomes. The findings of the model are then used to predict and understand the actions of all the decision-makers who are involved in the competitive situations and to examine the relative strengths of the different choices and strategies that were implemented. However Elbeck et al. (2016) pointed out the main critique of game theory as being based on its axiomatic approach with the implicit assumption it makes that all the decision-makers are rational individuals.

Although there are certain aspects of game theory which partially apply to this study, such as the features of cooperative game theory in which the decision-makers seek to form binding agreements with each other to deliver agreed-upon products and services and behave in ways that fulfil the requirements of the agreement (Vesperman and Clark, 2016), as well as another element of game theory in which the participants anticipate the actions of others and then make choices and decision to account for the anticipated actions in an interdependent and interactive way (Anantsuksomri and Tontisirin, 2016; Heap, 2017; Hedoin, 2015; Yang, 2017), a game theory lens is not appropriate for this study because it is predicated on the notion of a scarcity of resources and the potential for conflict as participants make decisions and choices based on perceived scarcity of resources and competition to acquire them at the expense of other participants (Er & Demir, 2017).

Business Sustainability in Global Supply Chains

The viability of a supply chain depends on the sustainability of the businesses that are integral and interdependent members of the supply chain. The concept of sustainability is defined in the Brundtland Report as development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Maniora, 2018). Modern supply chains must incorporate environmental, social, and economic goals to achieve triple bottom line sustainability in all partner companies associated with a supply chain (Treiblmaier, 2019). Sivarajah, Irani, Gupta and Mahroof (2018) defined the theory of triple bottom line sustainability management as requiring managers to consider economic, social, and environmental objectives in making decisions which result in their businesses making profits while, at the same time, giving back to the communities they operate in and taking initiatives to conserve and replenish natural resources in the process of producing products and services.

Freudenreich, Ludeke-Freund and Schaltegger (2019) contended that business sustainability can be achieved when a business captures economic value for the business while it maintains or regenerates natural, social, and economic capital beyond the boundaries of the focal organization. Building on the Brundtland Report's concept of sustainability, Jim-Yuh, Kao-Yi, Joseph and Gwo-Hshiung (2019) proposed that business sustainability should be viewed as a long-term requirement and argued that the concept of business sustainability be redefined as meeting the needs of the company's stakeholders, including investors, employees, clients, and managers, without compromising its ability to satisfy the needs of future stakeholders in the long term.

The requirement to meet the different needs of current and future stakeholders in a business is central to the achievement of business sustainability. Camilleri (2015) acknowledged the need to involve all the stakeholders in a business and to seek and implement their inputs to enhance management's efforts to achieve sustainability in their company. Further, Camilleri (2015) advocated for the establishment of international standards for reporting on sustainability issues to stakeholders relating to their company's actions and impacts on social and environmental issues. In a similar vein, Freudenreich et al. (2019) argued that all stakeholders in a company should be part of the value creation process through a stakeholder value creation framework. The framework should allow all stakeholders of the company to bring their expectations and contributions in the value creation process the goal which is to enhance the sustainability prospects for their company.

Companies that focus on the needs of all stakeholder groups in their business sustainability programs and actively report out on the performance of their business sustainability efforts are also rewarded by the investor community in terms of their stock market performance. Du, Yu, Bhattacharya and Sen (2017) examined the stock market performance of companies that reported their business sustainability programs covering key environmental, social, and governance related dimensions and found a positive impact on stock price performance of companies that comprehensively reported their business sustainability results. Laurell, Karlsson, Lindgren, Anderssen and Svensson (2019) also contended that the integration of sustainable values into business through systematic and holistic thinking by business managers could result in positive long-term impact on profits and market values, while also delivering social and environmental benefits. Mohamad and Chin (2018) studied the effects of incorporating stakeholder-driven financial, social and environmental goals in business decision-making by managers of small rural businesses and found that doing so resulted in enhancing the prospects of keeping their small businesses more sustainable for the long run, as well as making them more profitable.

The concept that business sustainability requires stakeholder-focused strategies for achieving an organization’s social, environmental, and economic goals has also taken root in developing economies. Ray and Ray Chaudhuri (2018) studied stakeholder-driven business sustainability initiatives in for-profit companies in India and found that companies that were affiliated with business groups, defined as family-controlled conglomerates, made important contributions to shared value creation for all stakeholder groups. Additionally, for sustainable business development, they tended to adopt both environmental as well as social sustainability strategies more so than their counterpart companies that were not affiliated with business groups. As a result, business group affiliated companies tended to also perform better on economic sustainability measures (Ray and Ray Chaudhuri, 2018). Masocha and Fatoki (2018) studied business sustainability practices of companies in South Africa and concluded that coercive isomorphic pressures had a significant impact on economic, environmental and social dimensions of sustainable business development within companies, and that governmental agencies, environmental pressure groups, and other stakeholders needed to apply coercive pressures such as laws and regulations to companies to enhance business sustainability practices in their operations.

Roxas, Chadi, Jesus and Cosape (2017) also examined the issues related to business sustainability in small manufacturing firms in developing economies and posited that due to the severe resource constraints faced by small firms, the goal of sustainability could be achieved only by enhancing the firms' human and social capital. Specifically, Roxas et al. (2017) contended that human capital in the form of experience and education of top management in small firms plays a key role in augmenting the resources of their firms to achieve greater business sustainability, as well as social capital of small firms in the form of management's social networks and personal relationships outside of their firms which enables them to gain access to and leverage valuable resources, in the form of financial, technological, and knowledge-based resources, outside their firms which further facilitates their ability to achieve their sustainability goals (Roxas et al., 2017).

Asarin and Danang (2018) explored the role of technology in fostering business sustainability in developing economies, and discovered that the use of social media platforms and mobile apps in the ride-sharing industry in Indonesia allowed multiple stakeholders including the customer, the ride provider, and the mobile app development company to implement a joint business model for sustainability that benefited the environment in the form of reduced gas consumption and emissions, provided social benefits in the form of subsidized driver costs and relatively inexpensive transportation for the customer, and financial benefits for the ride provider as well as the mobile app developer. Francis and Willard (2016) also studied the impact of using information and communications technology on small and medium sized businesses and reported that the companies that utilized current information and communications technologies realized the benefits accruing from more efficient, collaborative, and consistent operations including time savings, cost reduction, improvements in business partner and customer relationships, increased revenues and profits, greater business productivity, and a reduction in environmental pollution. Firms that strategically implement modern information and communications technologies realize greater competitive advantages for their businesses and are better positioned to keep their companies more sustainable in the long term (Francis and Willard, 2016). Assessing the contributions of eco-innovations to business sustainability, Hanelt, Busse and Kolbe (2017) surmised that future environmental impacts will largely be determined by the technologies deployed by businesses in their operations, however, the eco-innovations employed by businesses in their operations will need to serve the dual purposes of reducing the business' environmental footprints as well as improving organizational performance in order to achieve the goal of enhanced business sustainability.

Environmental Sustainability in Global Supply Chains

Globalization and worldwide economic trends have given rise to highly interconnected and complex supply chains, and there has been a significant shift to companies outsourcing non-core activities to overseas suppliers. Ashby (2018) noted the shift towards outsourcing as well as offshoring of non-core activities and observed that waste and emissions caused by production processes throughout the global supply chain are major sources of environmental problems. Every product manufactured, transported, used, and discarded within a global supply chain, has some degree of impact on the environment. The degree of impact is a function of the amount of materials and energy consumed, and waste released in its lifecycle. Focusing on the clothing industry, Ashby (2018) attempted to address the problem of environmental sustainability in the industry's global supply chain by proposing a closed-loop supply chain in which the focal firm, its end customers, and its global suppliers are managed in a coordinated way such that appropriate environmental practices are followed by all members of the global supply chain including the end customers who would initiate the reverse flows of used clothing to maximize value and minimize waste throughout the supply chain (Ashby, 2018).

Green, Inman, Sower and Zelbst (2019) acknowledged growing demands by immediate and end customers of manufacturing organizations for eco-friendly products and services that do not damage the environment, which in turn requires manufacturers to modify their operations to reflect these new customer demands. Noting that it has been empirically established that green supply chain management practices lead to better environmental performance as well as organizational performance, Green et al. (2019) examined the effects of combining the lean manufacturing practices of just-in-time inventory (JIT) management and total quality management (TQM) with green supply chain practices, and discovered that unique JIT and TQM practices combine to support the implementation of green supply chain management processes which lead to improved environmental performance of the manufacturers' entire global supply chain. Zhang, Golpira and Syed (2018) approached the issue of environmental sustainability in global supply chains from a worldwide logistics management perspective, specifically focusing on the global goods transportation industry, which employs almost 10 million people and generates about 4.6 % of global gross domestic product but is also one of the main contributors to air pollution in terms of burning fossil fuels and energy. Implementing green logistics management practices in the global goods transportation industry will not only improve its environmental performance in terms of reduced carbon emissions but will also enhance the industry's economic performance and build competitive advantages for companies within the industry (Zhang et al., 2018).

Xu, Boh, Luo and Zheng (2018) studied the environmental performance of supply chains from the standpoint of industry practices and standards by surveying 205 manufacturing firms in China that had adopted RosettaNett standards and found that as a result of implementing industry standards, environmental collaboration and control was enhanced among supply chain partners and greater knowledge-sharing and process integration was realized by all firms adhering to industry standards, which led to improved overall environmental performance of the entire supply chain. Kersten (2015) also explored the effectiveness of industry practices and standards in promoting environmental performance among companies in supply chains using the Global Organic Textiles Standards' (GOTS) framework and concluded that companies in the textile industry that followed the GOTS standards were not only able to achieve better environmental results but were also positioned to gain competitive advantages over their competitor companies who did not subscribe to GOTS industry standards. Caritte, Acha and Shah (2015) reinforced the need for and the importance of establishing industry standards for environmental performance of companies within the industry by studying food retailers in the United Kingdom and concluded that there was a significant lack of standards and consistency in the environmental indicators being reported in all areas of environmental performance relevant to the food retail industry. Further, it was also discovered that due to a lack of industry standards, food retailers in the United Kingdom reported their individual companies' performance on differing indicators of environmental performance; for example, some companies reported on only the food transportation aspects of their environmental performance, whereas other companies focused their reporting on their water consumption and wastewater disposal, which indicated a lack of consistent standards on reporting, which in turn resulted in suboptimal industry-wide environmental performances (Caritte et al., 2015).

Organizational learning by each of the separate yet connected companies in a supply chain plays a key role in the environmental sustainability of the overall supply chain. Silvestre (2015) examined the ways in which organizational learning happened in supply chains in emerging economies and discovered that supply chains learn and evolve just as other organizations do and that both the trajectory of sustainability as well as the pace of change are relevant factors in fostering sustainability practices among member organizations in supply chains. Further, supply chain members learn over time what their roles and responsibilities are within the supply chain and what the partners expect from each other, and this enables them to learn new capabilities that allow them to jointly develop technological, organizational, and business model innovations that move the entire supply chain towards enhanced integration, collaboration, and sustainability performance. However, in emerging economies there are barriers to integration, collaboration, innovation, and sustainability in the form of a lack of infrastructure, high levels of corruption, pressing social issues, and informal business practices, which increase the degree of complexity that supply chains in emerging countries face and reduce the overall level of trust within the business environment, which in turn increases environmental turbulence and leads to a lower overall level of environmental sustainability of supply chains in emerging economies (Silvestre, 2015). Chin, Tat, and Sulaiman (2015) also explored environmental sustainability in emerging economies' supply chains and concluded that collaboration between supply chain members was an indispensable requirement if the supply chain was to achieve environmental sustainability. Additionally, top management's commitment to collaborating with their supply chain partners, sharing resources, and manufacturing practices and processes was absolutely essential for enhancing their supply chain's environmental sustainability performance.

With the growth in outsourcing of manufacturing operations to developing countries, there has been a concomitant increase in third-party logistics and transportation (TPL) providers who have stepped in to serve manufacturing supply chains in developing countries. El Baz and Laguir (2017) studied third-party logistics organizations in the emerging economy of Morocco that served manufacturing supply chains and the impact of their industry on overall environmental sustainability and concluded that some of the unique challenges to environmental sustainability in developing economies include a lack of collaboration between TPL partner companies, weak customer demands for environmental performance by companies, a lack of governmental regulations for environmental standards, a lack of clear environmental performance initiatives and commitments by the managements of companies, and the relatively immature stage of economic development in the country (El Baz and Laguir, 2017). Tomossy and Alam (2017) contrasted the environmental sustainability initiatives of the public procurement of goods and services by governmental agencies in Indonesia and Australia and found that in the case of Indonesia, the provisions of existing environmental legislation were inconsistent, unclear, and overlapping, causing reduced environmental performance by the supply chains that provided goods and services to governmental agencies. In contrast, the Australian government's top-down approach established a national framework for sustainable procurement by governmental agencies that provided clear and consistent rules and guidelines, making it easier for manufacturing and service companies in the supply chains that served Australian governmental agencies to deliver enhanced environmental performance.

The concept of environmental sustainability in supply chains has received the most attention in the manufacturing sector of the world's economies. However, the notion of green supply chains is also taking root in the tourism sector. Chen, Guan, Xu and Clergeau (2018) explored the idea of green supply chains in the rural tourism industry in China and proposed a decoupling of backstage functions of members in the tourism supply chain and forming shared service centers that provided services to Tier 1,Tier 2, and Tier 3 suppliers such that Tier 1 suppliers included those entities that directly interact with tourists and include farmhouses, working farms, local restaurants, and tourist transportation companies, Tier 2 suppliers comprise back-stage functions that are outsourced from Tier 1 organizations, such as the primary food processors, handicraft manufacturers, laundry facility providers and marketing, training and recycling service providers, and Tier 3 members mainly include businesses such as equipment and furniture manufacturers, water and energy suppliers, and institutional suppliers including government, non-profit, and educational institutions. Decoupling backstage functions and forming shared service centers that served all organizations in the tourism supply chain provided benefits realized from factors such as economies of scale, specialization of functions, and consistency in the quality of backstage services provided to the customer-facing business in China's rural tourism supply chain, while also contributing to improved environmental sustainability performance of the entire supply chain (Chen et al., 2018).

Much of the research on environmental sustainability in supply chains focuses on existing product manufacturing, distribution, transportation, and logistics by member firms, yet environmental consequences also occur when products reach their end-of-life stages, and products are eliminated by manufacturing companies. Zhu and Shah (2018) examined the effects of product deletion by manufacturing firms, and they found significant impacts and relationships between how companies delete products from their product portfolios and the environmental sustainability of the supply chains they are part of. Supply chain activities such as sourcing, operations and manufacturing, distribution and logistics, and usage to reverse logistics in closed loop supply chains are directly influenced by product deletion, and each activity bears the potential to impact the environmental sustainability of the entire supply chain. In the sourcing function, when an environmentally-focused product is deleted, it could result in a lesser need for requiring suppliers to have environmentally sound practices, potentially resulting in less resource conservation practices. In manufacturing, when a green product is deleted, it could result in less emphasis on pro-environmental initiatives, and organizations may trade off the environmental benefits of green products for internal operational investment savings. One area where product deletion may benefit environmental sustainability is when the product is deleted in a closed-loop supply chain in which both forward activities such as sourcing, manufacturing, distribution, and retailing, as well as reverse activities such as recollecting, repairing, remanufacturing, recycling, and reuse exist, and deleting a product from a closed-loop supply chain helps firms to reallocate resources from underperforming products to better performing products which could yield financial benefits in the form of increased profitability as well as environmental advantages in the supply chain in the form of fewer natural resources consumed while generating less waste throughout the supply chain (Zhu and Shah, 2018).

Coordination of initiatives between member organizations of supply chains to enhance environmental sustainability is seen as a prerequisite for achieving sustainability goals. Zissis, Saharidis, Aktas, and Ioannou (2018) emphasized the need for coordination of activities among supply chain partners to satisfy environmental demands imposed by governmental legislation as well as the need to improve their companies' environmental profile for their clientele as it is increasingly deemed to be a competitive necessity. Using an emissions model to measure the environmental impact of transportation activities among decentralized nodes in a supply chain in which one node is the buyer ordering from a second node, who is a supplier operating under the lot-for-lot policy, the supplier is permitted to use quantity discounts to manipulate the buyer's purchasing decision, which resulted in reducing both the supplier's individual cost as well as the system's operational costs, while simultaneously decreasing the frequency of deliveries which in turn caused fewer emissions overall. Hence it was shown that if the independent and decentralized member nodes in the supply chain coordinated their transactional activities in a mutually beneficial way, the twin objectives of fewer greenhouse gas emissions due to reduced number of product deliveries as well as cost savings due to quantity discounts were both realized, and the goal of enhanced environmental sustainability of the overall supply chain was also served (Zissis et al., 2018).

Social Sustainability in Global Supply Chains

In addition to environmental sustainability considerations, supply chain partners and managers also need to address human capital and stakeholders' needs within supply chains to achieve durable supply chain sustainability results. Croom, Vidal, Spetic, Marshall and McCarthy (2018) described socially sustainable supply chain practices as involving a range of initiatives that are critical for global supply chains including health and safety programs for employees, protections against child and slave labor, providing proper working conditions, supporting human rights, and sponsoring community impact programs. However, different socially sustainable practices by companies can yield different business outcomes. For example, process-oriented practices such as implementing codes of conduct and monitoring systems within supply chain organizations may serve as guides and monitoring systems, and they may improve supplier sustainability behaviors, but they do not necessarily lead to better sustainability performance outcomes (Croom et al., 2018).

Emphasizing the need for a long term orientation on the part of member organizations in supply chains, Croom et al. (2018) distinguished between basic and advanced supply chain practices, describing basic practices as including programs that focus on the health and safety of workers in the supply chain, and advanced practices as measures that redefine the entire supply chain through new products and processes that benefit multiple stakeholder groups, promote transparency of social sustainability information, and include non-governmental organizations and communities in the supply chain decision making process. While basic social sustainability practices are essential to the longevity and functioning of supply chains, they are not, by themselves, sufficient to achieve sustainability goals, and managers in the supply chain need to implement advanced social sustainability practices with a long-term orientation mindset accepting that advanced practices might be costly in the short term, but have the potential of providing important long term benefits that ultimately serve the purpose of enhancing the performance and durability of the entire supply chain.

A long term orientation and adherence to socially sustainable advanced supply chain practices produce positive results in making supply chains more sustainable (Croom et al., 2018). However, supply chains which are global in scope sometimes involve partner companies that operate in more restrictive economic environments which impair their ability to take a long term view and apply advanced socially sustainable practices. Najjar, Shahwan and Yaseen (2017) explored socially sustainable supply chains in countries with restrictive economic environments and discovered that many firms have struggled in managing their suppliers' operations and activities, especially distant suppliers in developing countries. To address this issue, they have adopted new practices to ensure compliance with social requirements such as performing field visits to check on whether agreed-upon socially sustainable operating practices are actually being implemented. In addition, they have also taken measures like requiring non-compliant suppliers to put in place corrective action plans, and if no corrective actions are taken, the company then moves to replace the supplier with another company with the objective of assuring that socially sustainable practices are being followed throughout the supply chain (Najjar et al., 2017).

Mani and Gunasekaran (2018) also extended the geographic scope of socially sustainable supply chains and examined supply chains that included companies from both advanced economies in Europe, as well as companies in Asian emerging markets, and identified four distinct forces that shape the implementation of practices leading up to socially sustainable supply chains. Customer social pressure from customers in European markets demanded the adoption of socially sustainable practices in the making of their products by emerging country manufacturers in Asia; the acceptance of sustainability culture among all supply chain partner companies also influenced the degree of social sustainability in supply chains; regulatory compliance also positively impacted the social sustainability of supply chains, and external stakeholder pressure on supply chain partners, both in Europe and in Asia, also positively influenced the development of socially sustainable supply chains (Mani and Gunasekaran, 2018). Advocating for a similar but more comprehensive approach to assuring social sustainability in supply chains, Hannibal and Kauppi (2017) also recognized the differences in characteristics of the advanced economies and the developing economies and advocated for third-party assessment and scrutiny of the entire multi-tiered supply chains that characterize global business today. Recognizing that the market for socially sustainable products features raw material suppliers and manufacturing companies largely in developing countries, and the buying firms and customers largely in the developed economies of the West, Hannibal et al. (2017) proposed that third party assessors and non-governmental organizations were best positioned to ensure that robust quality assurance systems were being used all across multi-tiered supply chain partner organizations, which in turn, would enhance the overall social sustainability of global multi-tiered supply chains.

The effectiveness of an organization's efforts to enhance the social sustainability of the supply chain which it is a part of depends on other supply chain partner organizations' efforts in social sustainability as well. Sodhi and Tang (2018) conducted a thematic analysis of the literature on socially sustainable supply chain management and purported that in any supply chain, the focal company seeks to coordinate with its supply chain partners to improve performance to achieve greater sustainability of the entire supply chain, and argued that unless all partners have aligned incentives to coordinate efforts, it is unlikely that any targeted social problem could be alleviated. Additionally, incentives need to be aligned not just between immediate supply chain partner companies, but also among tertiary stakeholders such as governmental and non-governmental organizations and forming partnerships with all market and non-market stakeholder groups may be necessary along with the need to set up performance measurement metrics designed to assess both economic as well as social outcomes of programs implemented to achieve the desired social outcomes to enhance the supply chain's social sustainability (Sodhi and Tang, 2018).

De Morais (2017) also examined the literature on socially sustainable supply chain management and professed that social issues are under-represented in supply chain sustainability management literature and that economic and environmental sustainability are disproportionately covered in sustainability research. Using a multinational agri-business organization as a case study, De Morais (2017) enumerated social issues in supply chain management as including working conditions, societal corruption, product health and safety concerns, human rights, ethics in the workplace, employee health and wellbeing, workplace equity, child labor, training and advancement opportunities, and community support and development programs, and posited that social issues can be tackled by the focal companies in supply chains through governance mechanisms such as internal corporate governance, screening of suppliers, partner incentive programs for improvements, assessment of partner activities, and the monitoring, collaboration, and development of upstream and downstream supply chain partners.

Ahmadi, Kusi-Sarpong and Rezaei (2017) also endeavored to address issues related to social sustainability in supply chains using the best-worst method and applying it to the manufacturing industry in emerging countries, and contended that social sustainability enables other sustainability initiatives in the economic and environmental dimensions to succeed, and that overlooking social considerations can have adverse impacts across supply chains. Based on studying socially-focused initiatives in focal companies in manufacturing supply chains in emerging countries, factors that had the greatest impact on fostering social sustainability and benefits included contractual stakeholder influence, work safety and employee health, training and educational opportunities, community involvement and development programs, and full information disclosure to concerned stakeholder groups (Ahmadi et al., 2017). Mani, Agrawal and Sharma (2016) also performed a study on social sustainability issues in manufacturing supply chains in an emerging economy and observed that in developing countries, glaring social issues such as income inequality, poor living conditions, child and bonded labor, wage and gender discrimination are increasingly being challenged by increased stakeholder awareness and thus pressure is being exerted on managements of companies to address issues on social sustainability. Among the causes for a relative lack of progress on social issues in supply chains in developing countries were a lack of awareness, lack of competitive pressure, lack of customer requirements for social justice, lack of investor pressure, lack of labor union pressure, lack of governmental oversight, and a general lack of societal concern (Mani et al., 2016).

Transition

In Section 1, I provided an overview of the issues and problems, as well as the opportunities facing businesses in achieving sustainable global supply chains. Businesses, such as multinational consumer packaged goods companies, rely on worldwide supply partner companies in different countries for the final production of their products, and disruptions in the operation of any partner company within their global supply chains can impact the operations and production schedules of their downstream partner companies. Supply chain disruptions are events that interrupt the flow of materials between raw material and subcomponent production companies and the end customer, and supply chain disruptions can have severe negative business impacts on firms (Bode &

MacDonald, 2017). I conducted a multiple case study of three medium-sized consumer packaged goods multinational companies in northern Vermont to explore strategies that business leaders in the consumer packaged goods industry implement to achieve sustainability in their global supply chains. The case study method was the most appropriate method for answering the research questions of what strategies leaders of multinational consumer packaged goods companies implement to achieve sustainability throughout their supply chains. Multinational business leaders who comprehend the potential adverse effects of supply chain disruptions and who develop better strategies to foster greater sustainability in their supply chains can achieve better business performance.

Section 2 will include the research procedure with a detailed explanation of the role of the researcher, the participants, the research method and design, data collection instruments and techniques, and how to assure reliability and validity. Section 3 will include the presentation of the findings from the study, interpretations, and recommendations for further research.

Section 2: The Project

In this section I focus on strategies business leaders use to achieve sustainability in global supply chains. Achieving sustainability in global supply chains requires the simultaneous execution of environmental management practices, socially inclusive practices for employees and communities, operations management practices, and supply chain integration practices (Das, 2018). However, globally dispersed supply chains also make it difficult to implement sustainability policies and practices (Kim & Davis, 2016). In this section, I describe the approach taken to explore the strategies that leaders in the consumer-packaged goods industry use to achieve sustainable global supply chains. The major topics I discuss in Section 2 include the role of the researcher, the research method, research design, the participants, and ethical considerations in research.

Purpose Statement

The purpose of this qualitative multiple case study was to explore strategies that leaders of multinational companies implement to achieve sustainability throughout their supply chains. Sustainability can be defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Steen & Palander, 2016). The population for the study included business leaders of three medium sized consumer packaged goods companies in northern Vermont, selected because they have successfully implemented strategies to achieve sustainability in their supply chains. The study's contribution to social change may include potential improvement in the ability of leaders in the consumer packaged goods industry to develop and implement more effective sustainability strategies in their supply chains, thus enhancing societal, environmental and economic outcomes.

Role of the Researcher

My role as a researcher included selecting the research methodology and design, choosing a conceptual framework, selecting prospective participants, collecting data using semi-structured interviews and document gathering and analyzing and evaluating the data collected from the research participants. The role of the researcher is to listen, learn, and observe (Rossetto, 2014). Kavoura and Bitsani (2014) noted that the role of the researcher is to ensure the presentation of varying views and perspectives that emerged from the study. A researcher from outside the organization can ensure the objectivity of the research (Collins & Cooper, 2014). Further, the researcher will work to avoid research bias by maintaining an awareness of personal biases and potential ethical issues. Maintaining a neutral perspective when analyzing participants' responses is vital to enhancing the research quality (Collins & Cooper, 2014).

Although I currently work in the Burlington, Vermont area, I do not have any business relationship with the organizations and research participants. I used an interview protocol to ensure consistent focus on the recorded interview only, to consciously separate my views from the objectives of gathering data, and I used member checking to ensure that my data collection was accurate. Data collection by me began only after I receive approval from Walden University's Institutional Review Board (IRB). The IRB provides oversight and ensures the research complies with ethical standards and the three foundational ethical principles outlined in the Belmont Report (Connolly, 2014). Ethical considerations are a core feature of qualitative research practice as ethical questions may arise in every phase of the research process (Roth & von Unger, 2018).

The Belmont Report provides three principles guiding the conduct of research involving human participants in order to protect vulnerable people who may have limited capacity for decision making and self-determination such as the elderly, prisoners, children under the age of majority, or people with mental health issues (Wessels & Visagie, 2015). The three foundational principles of the Belmont Report are respect-for-persons, beneficence and nonmaleficence, and justice (Schrems, 2014). Respect-for-persons involves respecting and protecting the human participants with limited autonomy. The human participant should fully agree to participate, and researchers should use informed consent to ensure the research participants are aware of the purpose of the study. Beneficence and nonmaleficence are the ideas of avoiding the risk of doing more harm than good, that is, maximizing the benefit and reducing the risk of harm. Justice is the concept of equal treatment for everyone (Schrems, 2014). Wessels and Visagie (2015) underscored that full compliance with the Belmont Report's ethical principles is a way to ensure the research is ethical.

For this qualitative multiple case study, I collected data from three primary sources. First, I collected data from interviews with leaders of three medium sized consumer packaged goods multinational companies. According to Yin (2014), the interview is an important mode of data collection during a qualitative research study. Second, I collected data from internal company records and publications such websites, annual reports and social media pages. For the interviews, I used an interview protocol.

An interview protocol contains the interview questions and step-by-step guidance that a researcher can use consistently for several interviews (Jacob & Furgerson, 2012). An interview protocol includes having a ready set of interview questions and using a script, so the researcher maintains focus. Jacob and Furgerson (2012) noted that an interview protocol includes providing an informed consent form to participants, ensuring participants meet the established criteria, arranging a location for the interview, providing information on the interview process, maintaining confidentiality, and following-up via member checking. Yin (2014) emphasized that the interview protocol is a significant way to increase the reliability of the multiple case study.

Participants

For this multiple case study, I selected participants located in northern Vermont for my interviews. I used purposive sampling and selected the participants intentionally to represent the predefined conditions of my study. Purposive sampling commonly appears in case study research (Suen, Huang, & Lee, 2014). Researchers use this technique expecting that each participant will add value to the study by providing unique information (Suen et al., 2014). I determined the sample size using data saturation as my criterion. Thematic data saturation is reached when there are no new emerging ideas in the data and instead of relying on the number of participants, qualitative research focuses on different perspectives and opinions of participants (Hancock, Amankwaa, Revell, & Mueller, 2016). For a robust case study, researchers collect evidence from multiple sources to ensure rigorous research quality (Yin, 2014), and therefore my selection of senior level executives from three distinct consumer goods companies operating on a global scale was appropriate.

I selected the participants based on the following criteria: (a) size and scale of the business–medium sized consumer goods companies operating on a global scale, (b) position held in the company-- supply chain managers or CEOs will be targeted, and (c) location–participant companies will be based in northern Vermont with offices and operations in multiple countries. Hence, the selected participants will be senior level executives of multinational consumer packaged goods companies, having served in leadership positions for at least 5 years, who have developed successful strategies to achieve sustainability in their organizations' global supply chains.

After I developed the pool of potential research participants, I obtained the organization's cooperation and permission to identify and contact potential participants. I contacted potential participants via telephone and (a) requested their assistance in conducting the research study, (b) determined their role in developing and implementing strategies and processes for their supply chain partner companies, and (c) determined if they are responsible for achieving sustainability in their global supply chains. I provided a copy of the informed consent form to the business managers who met the screening requirements and established a working relationship with the research participants as this is important to support the interview process. I also engaged the participants through the informed consent process and explained the purpose of the interview process with them to maximize the efficacy of the interview process.

Research Method and Design

For my study I selected a qualitative research method over a quantitative and mixed methods approach to help me explore and describe data, and arrive at my findings. Marshall and Rossman (2016) underscored that the selection of research method and design flows from the research question. The three research methods are quantitative, qualitative, and mixed methods (Mukhopadhyay & Gupta, 2014). Generally, researchers using the quantitative method work within the *positivist paradigm* (Mukhopadhyay & Gupta, 2014), and test theories using hypotheses (Antonakis, Bastardoz, & Schriesheim, 2014). Qualitative researchers explore a phenomenon where little or no understanding of the subject phenomenon exists (Johnson, 2014). Mixed methods research besides the qualitative elements, requires quantitative viewpoints and techniques (Halcomb & Hickman, 2015), and the integration of both methods was not required to meet the research objectives of my study.

Research Method

For this study, I determined that qualitative research was the most appropriate methodology because my research question is explorative in nature and because qualitative research takes place in the natural world, focuses on the context, and is mostly interpretive (Marshall & Rossman, 2016). A qualitative research method is also appropriate for this study because it allows for more flexibility than quantitative research does due to the inclusion of historical narratives allowed by qualitative research (Gorylev, Tregubova, & Kurbatov, 2015). Researchers can use qualitative research in 46 diverse research contexts, and the ability to observe objects in their natural settings allows researchers to understand the phenomena (Lach, 2014). The phenomenon that I investigated is appropriate for this type of research since it allows for the subjective experience of the research participants.

The quantitative researcher uses numerical evidence to explain relationships and differences among variables but does not take into consideration the context in which the studied relationships exist (Mukhopadhyay & Gupta, 2014). An examination of the relationship or differences between variables was not needed for this study because of the explorative nature of this study. The mixed method approach is a research method that involves collecting, analyzing, and interpreting both qualitative and quantitative data in the same study (Makrakis & Kostoulas-Makrakis, 2016). Neither the quantitative nor the mixed method would have been appropriate for this study, and therefore, I selected a qualitative research method for this study.

Research Design

The focus of this study was on exploring strategies that managers in the consumer goods industry use to achieve sustainability in their global supply chains. Since I investigated and explored real-life situations that companies face in managing their global supply chains, I chose multiple case studies as my research design for this study. A case study is an investigation of a single or collective case, and it is the common approach to studying real-life phenomena (Hyett, Kenny, & Dickson-Swift, 2014). Case study research offers a greater level of flexibility than the other qualitative approaches (Hyett et al., 2014). Case studies capture the particularity of a case that the researchers explore in depth (Hyett et al., 2014). Researchers study cases in detail to gain a better understanding of a particular situation and improve the understanding of events (Hyett et al., 2014).

Colorafi and Evans (2016) posited that the four most frequent designs for the qualitative inquiry are narrative, ethnography, phenomenology, and case study. Narrative research is suitable to explore life stories of individuals, but not organizations (Germeten, 2013). Therefore, the narrative approach was not appropriate for this study. Ethnographers focus on studying the cultural behavior of groups (Cayla & Arnould, 2013). Given that studying the cultural behavior of groups was not my intention, the ethnographic approach was not appropriate for this study. Phenomenology is an approach researchers use to understand and capture the meanings of lived experiences of a common phenomenon (Berglund, 2015; Gill, 2014). My intention was to explore strategies that leaders in the consumer goods industry use to achieve sustainability in global supply chains, rendering a phenomenological study inappropriate.

Population and Sampling

The purpose of this qualitative multiple case study was to identify strategies used by consumer goods companies who have successfully achieved sustainability in their global supply chains. The population for this study was three medium-sized consumer goods companies operating in northern Vermont. The participants selected for this study possessed direct experience in implementing strategies that have led to success in achieving sustainability in their global supply chains and who were capable of providing insights into the most effective strategies for achieving sustainable global supply chains. To be considered eligible participants for this study, candidates had to satisfy several qualifications. First, eligible participants needed to occupy high-level executive positions which involve direct responsibility for crafting and implementing global supply chain management strategies for their respective companies. Second, the selected participants needed to have been in their respective positions for at least 5 years in order to ensure depth of experience and knowledge in managing global supply chains. Third, participants were selected based on the number of countries and cultures their supply chain partners come from in order to be considered global supply chain managers. All participants needed to indicate that they meet the qualifications by signing a consent form.

Recruiting the sample involved contacting executives at the selected consumer goods companies via phone and e-mail, as well as through business seminar events and other business networking events. I selected and recruited six senior executives from three different multinational companies to obtain multiple viewpoints and data sources. Using multiple data sources can provide substantial and reliable data (Yin, 2014). The goal for participant selection in a specific study was to engage those individuals who can provide the most relevant and plentiful data regarding the topic; therefore, people who are most likely to be knowledgeable in the topic of interest must be the ones selected for the study (Yin, 2014). I also used the strategy of purposive sampling when selecting eligible participants for this study. A purposive sampling strategy will be suitable for choosing the most insightful cases to study. A purposive strategy is an ideal method to explore a targeted population group, especially for studying cases in small to medium organizations (Barratt, Ferris, & Lenton, 2015). A purposive sampling strategy provides broader perspectives across the resulting findings when compared to the snowball sampling method, which researchers use for collecting samples through referrals from participants (Hyysalo & Usenyuk, 2015). Barratt et al. (2015) also noted that the purposive sampling technique is the most effective and commonly used method when exploring participants' perspectives and experiences in depth in a study. Therefore, a purposive strategy was the most beneficial choice for my qualitative case study research. Qualitative research designs tend to have a relatively small sample (Guo, Lu, Wu, & Zhang, 2015). To reach an appropriate sample size, researchers should not focus on a large volume of data, but on the quality of the sample (Guo et al., 2015). Researchers should be careful when planning for the sample size in the preliminary stages of research (Stadler et al., 2013). Therefore, the focus was on a smaller sample. A sample size of six participants was appropriate. The objective of this research was to collect sufficient data, ensure the quality of the evidence, and achieve data saturation. Saturation occurs when results repeat and create a pattern, which signals the quality and completeness of a study (Marais & Wyk, 2014). Without data saturation, research during the process analysis phase is incomplete (Marais & Wyk, 2014). Data collection involved interviewing the six participants until reaching the data saturation point. Recorded interviews with participants took place in a professional setting at a time convenient for the selected executives. A careful review of each participant's company website, newsletters, and online supply chain activities prior to the interviews revealed valuable insights to be used during the interview process. The interviews lasted approximately 60 minutes each to ensure sufficient time for the participants to answer each question thoroughly and until the combined interviews have provided a sufficient level of data saturation.

Ethical Research

The informed consent document is a requirement established by ethical and legal federal regulatory agencies to protect the rights of study participants (Grady, 2015). The informed consent document contains details such as the purpose of the study, associated risks and benefits, terms of compliance, costs and compensation, and voluntary involvement and withdrawal (Hull & Wilson, 2017; Kim & Kim, 2015). The informed consent should provide both protection of the participant and transparency of the research (Yin, 2014). In adherence to ethical guidelines, I reviewed the consent form with participants, including their right to withdraw from the study at any time with no fear of repercussions. Participants had my contact information with which to notify me if they would like to leave the study. I informed the participants that they may notify me via phone or e-mail if they would like to leave participation at any time before the completion of the study, at which time I will destroy the data. Participants will receive no incentives for voluntary participation except a summary of the final study. To ensure trustworthiness and consistency, I followed the established interview protocol (see Appendix A).

Institutional Review Boards (IRBs) are regulatory committees that oversee standards for human subject research (Blackwood et al., 2015). Questionable practices in biomedical and behavioral human studies prompted the creation of IRBs (U. S. Department of Health and Human Services, 1979). The IRB evaluates the quality of ethics a researcher applies to the research process. Researchers submit details of their studies related to participant selection and interaction to the IRB, which the agency can then analyze for possible ethical exceptions. Researchers must meet IRB approval before they can conduct studies involving human subjects (U.S. Department of Health & Human Services, 2014). The Walden IRB approval number for this study is 08-29-19-0584147. The criteria for IRB approval include minimizing risks to participants, the rationale of risk versus benefit, ethical subject selection, documented, voluntary consent of participants, and participant confidentiality (Blackwood et al., 2015). I addressed issues related to ethics by maintaining transparency throughout the process of my study and obtaining appropriate authorizations from participants. To adhere to IRB requirements, I ensured that I informed my participants of the study requirements and allowances by utilizing the informed consent form. Participants provided informed consent by replying to an e-mail with “I consent” or by signing the informed consent form just prior to start of the interview. Additionally, I followed the interview protocol, which provided instructions for the process I used for data collection (see Appendix A). Researchers commonly utilize pseudonyms as a method of maintaining participant anonymity (Sanjari, Bahramnezhad, Khoshnava, Shoghi, & Ali, 2014; Spillane, Larkin, Corcoran, Matvienko-Sikar, & Arensman, 2017). I protected the identity of my participants by providing pseudonyms for my participants as detailed in the interview protocol (see Appendix A). I secured all data from the research in a locked box in my home office to be stored for a minimum of 5 years, after which I will destroy the data.

Data Collection Instruments

I was the primary data collection instrument for this study, and I used semi-structured interviews for data collection. The secondary data collection instrument was semi-structured interviews. Semi-structured interviews involve asking the same set of questions of each research participant (Wilson, 2014). Semistructured interviews allow more flexibility, and will help keep the interview on track (Wilson, 2014). O'keeffe, Buytaert, and Mijic (2016) noted semistructured interviews are organized, and the topics help guide the conversation in a standardized manner to allow relevant issues to emerge.

I used an interview protocol that included interview questions to help aid in unbiased interviews with the participants. For this study, each interview consisted of ten open-ended questions. Each semi-structured interview took approximately 1 hour to complete and was completed in the allotted period. The interview protocol included the interview questions and the steps for conducting the interviews. The steps were to introduce myself, ask for permission to record the interview, collect the informed consent form before the interview, ask a series of ten questions, and thank the interviewee for their participation. I used semi-structured interviews to gather data from the participants and explored the strategies that supply chain managers used to successfully achieve sustainability in their company's global supply chains.

Before each interview, I collected the letters of consent. Next, I reminded the participants about the purpose of the study and the process of keeping data confidential and protected. Finally, I asked for permission to record the interview. Once the participants had granted me permission to record the interview, I started recording the semi-structured interviews and took notes. I asked the interview questions in the same order to avoid bias. After I completed each interview, I asked the participant for company documents pertaining to supply chain management practices. I reviewed company documents relating to all aspects of managing the company's supply chain.

Harvey (2015) mentioned that member checking is a process in which the final interpretations of the interviews are reviewed with the participants to ensure the data were correctly interpreted. Birt, Scott, Cavers, Campbell, and Walter (2016) noted member checking is participants' validation that the researcher has interpreted the data accurately. I followed up with all interview participants to schedule a second meeting for member checking, which took approximately 30 minutes. I enhanced reliability and validity of the data collection process by implementing member checking.

Data Collection Technique

Methodological triangulation combines different types of data collection (Ruiz & Bravo, 2016). Joslin and Müller (2016) stated that methodological triangulation is classified as within-method triangulation and between-method or across-method triangulation (Joslin & Müller, 2016). Researchers may use the within-method triangulation by using at least two data collection procedures, and the same design approach (Hussein, 2015). Researchers may use the between-method triangulation to combine both qualitative and quantitative methods (Hussein, 2015). Wilson (2014) stated triangulation refers to using more than one approach when conducting research to gain a richer, fuller data to help confirm the findings of the research. Triangulation consists of multiple methods of data collection to gain an articulate comprehensive view of the phenomenon (Joslin & Müller, 2016). I used methodological triangulation in my study, which consisted of three different data collection techniques. First, I used face-to-face semi-structured interviews as my primary data collection technique. Second, I examined and studied internal company documents related to their supply chain functions. And third, I studied related company artifacts such as the target companies' annual reports, websites, and social media sites.

Interviewing and participant observation are the most common techniques for obtaining an in-depth understanding of a phenomenon (Jamshed, 2014; Percy, Kostere, & Kostere, 2015). An interview is a technique for collecting data in which the researcher asks qualitative questions (Doody & Noonan, 2013). The researcher can select an interview format that ranges from a structured, unstructured, or semi-structured interview. Using a face-to-face interview enables the researcher to see, hear, and feel the participants' experiences through participant observation (Marshall & Rossman, 2016). Participant observation is also an additional and separate method for authenticating research findings (Jamshed, 2014). The interview protocol contains a set of interview questions and a step-by-step guidance directing the interviewer through the interview process (Chen & Mykletun, 2015; Jacob & Furgerson, 2012). Therefore, I used an interview protocol (see Appendix A).

The advantage of using the face-to-face interview for a case study is that through the face-to-face interview, the researcher gains useful insight and deeper context while also building rapport and trust (Doody & Noonan, 2013). The disadvantage of using the face-to-face interview is that there is the propensity for bias (Yin, 2014), and the researcher can influence the interview results, thus generating inaccurate conclusions. Another disadvantage of using the face-to-face interview as the data collection technique is that the interviewee might try to please the researcher or provide personal views rather than objective feedback (Doody & Noonan, 2013). However, being aware of personal bias is a way to mitigate influencing the interview results. A researcher can reduce personal bias through the use of member checking. Member checking is a process to share interview data with the participants to assure the accuracy of interview data and credibility of research findings (Birt et al., 2016; David, Hitchcock, Ragan, Brooks, & Starkey, 2016). I used member checking to mitigate bias and increase trustworthiness.

Since the purpose of this study was to identify and explore strategies business leaders in the consumer goods industry implement to achieve sustainable global supply chains, the semi-structured interview was appropriate for the study. Doody and Noonan (2013) posited that the semi-structured interview is a useful technique to collect data in qualitative research. Jamshed (2014) added that through the semi-structured interview, the researcher can ask open-ended questions to obtain rich data and, as necessary, to seek clarification.

Data Organization Technique

Throughout the research process, I maintained a journal to capture the relevant information that assisted me in the data analysis phase. I labeled the information in the journal with codes for confidentiality, and only I had access to the journal. I used pseudonyms to conceal participant names, such as P1, P2, P3, P4, P5, and P6. Applebaum (2014) suggested keeping a reflective journal in a qualitative case study to capture a thought, the research experience, and future activities. I kept the reflective journal to reflect on my practices during the various phases of the research. I used MS Excel, MS Word, and NVivo 11 to organize the data I collected. MS Excel helped me to organize literature review references according to type, date of publication, and peer-reviewed. I used MS Word for interview transcripts and a reflective journal. The NVivo software helps a qualitative researcher organize data for analysis and find the 69 common themes (Zamawe, 2015). I used NVivo for thematic analysis to draw out the common themes that arose from the research data. Using NVivo, I used keyword search for queries and grouped related information to develop themes. I also sequentially organized all the information for easier retrieval.

The IRB requires the researcher to protect the data for ease of access and future audit (Wiles & Boddy, 2013). I stored the data in a password protected hard drive and a portable flash drive as a backup for 5 years after completion of the study. Password protected encrypted electronic, hard drives are credible since it allows the storage of large quantities of data from the research process (Stake, 2010). After 5 years of completion of my study, I will delete all electronic files and shred all the paper data.

Data Analysis

Tumele (2015) noted the importance of having an analytical strategy for data analysis so that data can be analyzed in a clear and organized way. For multiple case study research, raw data should be initially collected, coded, and stored by individual case (Demassis & Kotlar, 2014; Yin, 2014). Given that this study was a multiple case study, I began the data analysis process by organizing, labeling, and coding the data for each case utilizing MS Excel followed by the NVivo software. I also used MS Excel to back up the data.

Methodological triangulation involves using and comparing multiple types of data (Fusch & Ness, 2015). Yin (2014) added that the collection of multiple types of data such as in open-ended interviews, documents, direct and participant observations as a part of the same study validate the same research finding. Marshall and Rossman (2016) underpinned that researchers use the research question and related literature as guidelines for data analysis. A researcher can ensure data saturation through the use of methodological triangulation (Fusch & Ness, 2015; Tumele, 2015; Yin, 2014). I used methodological triangulation by examining company documents, annual reports, company social media sites, and face-to-face interview data collected from each company to ensure data saturation.

Analyzing research data involved organizing the data, reviewing the data, data coding, and the subsequent development of themes. Each phase of the data analysis process will require data reduction and data interpretation (Marshall & Rossman, 2016). Data interpretation is the process of making meanings out of raw and inexpressive data that is relevant for a study. I transcribed the audio recordings of the participants' interviews during the data analysis phase, using NVivo software. NVivo is a computer software program for organizing and facilitating the analysis of qualitative data (Lensges, Hollensbe, & Masterson, 2016). When the researcher defines the set of codes, a computer software program can help locate the matching words or phrases from the data (Yin, 2014). I coded and analyzed the data using NVivo, while also sorting the coded words into categories for theme identification. After coding the words, I sorted, categorized, and organized the code words to aid me in identifying emerging themes (St. Pierre & Jackson, 2014).

Theme analysis is the process of identifying repeated patterns in words from a qualitative data (Percy et al., 2015). In particular, word repetition and new keywords are the fundamental techniques for theme identification. The use of NVivo software assisted me in identifying the key themes from the transcribed data, thus leading to the reporting phase. The last stage in the data analysis process was the development of a clear summary of findings of the study. Koch, Niesz, and McCarthy (2013) noted that during the reporting of results of research, precision and in-depth representations of the participants' views, as well as a good description of the case, are necessary. Based on the methodological triangulation of transcribed data and the examination of information from the company artifacts, I identified and verified emerging themes. I also provided citations of the participants' views and comments supporting the emerging themes.

Reliability and Validity

Reliability

Reliability is the consistency and replicability of the research methodology for a case study (Yin, 2014). The researcher can enhance the reliability of the study by asking the right questions during the interviews as well as properly documenting the processes and rationale for any decisions made during the research process (Grossoehme, 2014). Reliability in qualitative research means the extent to which research is consistent (Leung, 2015). Also, the use of an interview protocol assures that the researcher stays focused and unbiased during the interview sessions. Therefore, I used the interview protocol as well as asked questions that were relevant to answering the central research question.

El Hussein, Jakubec, and Osuji (2015) explained that rigor in a qualitative research means achieving a correct and genuine representation of the study participants' experiences and situations. Marshall and Rossman (2016) added that a researcher could ensure rigor in a qualitative study through triangulation. Carter, Bryant-Lukosius, DiCenso, Blythe, and Neville (2014) explained that triangulation is a strategy of collating different types and sources of data in research. I interviewed the participants as well as examined relevant company documents and artifacts including the participating companies' websites, Twitter, Linkedin, and Facebook accounts to gain an in-depth understanding of the strategies that business leaders in the consumer goods industry employed to achieve sustainability in their global supply chains. I used member checking to ensure the dependability of the study.

Validity

Researchers ensure the validity of a study by selecting the appropriate tools, processes, data collection techniques, and research method and design for analysis (Leung, 2015). In qualitative research, researchers demonstrating trustworthiness and experience maximize the validity of a study (Merriam & Tisdell, 2015). I addressed the issues of credibility, dependability, reliability, and transferability in this study. In this study, I used member checking to ensure the accuracy of the data collected. Participants will be invited to review the accuracy of the researcher's analysis of the responses to ensure completeness and credibility (Elo et al. 2014). After I completed my qualitative, semi-structured interviews with the participants, I summarized the information collected during the interviews and distributed summaries to the participants to check for accuracy.

Researchers recommend member checking following transcription and before data analysis (Houghton, Casey, Shaw, & Murphy, 2013). I conducted member checking before I analyzed the results. Researchers maximize credibility through engagement, documenting observations techniques, auditing results, and confirming the results (Cope, 2014). Researchers provide credibility in studies with plausible criteria and valid evidence from the findings (Amado, Arce, & Fariña, 2015). Researchers striving for dependability check the data gathered from other researchers and verify that the results align (Houghton et al., 2013). The fundamental concept of triangulation is the exploration of two other known data sources; researchers use more than one reference point to minimize bias or incorrect analysis in data collection (Joslin & Müller, 2016). Researchers gathering data from various and diverse participants and by accessing multiple documents in their studies promote triangulation and validity (Kihn & Ihantola, 2015). I interviewed six business leaders in the consumer packaged goods industry in this multiple case study and discovered the strategies they employed to successfully achieve sustainable global supply chains.

In addition to the data collected during recorded interviews, I explored data from business documents including supplier company reports, business websites, social media channels, and vendor lists. A researcher interviewing three case study participants can achieve data saturation (Marshall et al., 2013). I added to my data collection activity by securing business documents gathered during participant interviews. Researchers following reliable procedures demonstrate compliance with accepted standards in the collection and analysis of the data (Kihn & Ihantola, 2015). A researcher demonstrates confirmability through research objectivity, acting in good faith and devoid of bias, or modifying the results to achieve preconceived findings (Bryman & Bell, 2015).

Transition and Summary

Section 2 included a detailed discussion of the different stages of the research project. The stages include discussions on the purpose of the study, the role of the researcher, participants and population, the research design, and methods. I also discussed the data collection instruments, techniques, and data analysis. The most appropriate research method and design are the qualitative multiple case study to explore the strategies that multinational consumer packaged goods business leaders in northern Vermont implement to achieve sustainability in their global supply chains. The data collection technique was through semi-structured interviews and a review of the company documents and artifacts. Section 3 will include a presentation of the study’s findings, a discussion of the application to professional practice, the implications for social change, recommendations for action, recommendations for future research, my reflections, and my summative conclusions.

Section 3: Application to Professional Practice and Implications for Change

Introduction

This section contains the findings from my research on strategies implemented by multinational consumer packaged goods companies to achieve sustainable global supply chains. It includes an overview of the research methodology, a thematic analysis and explanation of the results of the study, the application of the study to professional practice, and the implications of the study for social change. Additionally, this section contains recommendations for action based on the research findings, suggestions for further research, and my reflections on the doctoral process, along with concluding remarks.

The purpose of this qualitative multiple case study was to explore strategies that leaders of multinational consumer packaged goods companies have used to successfully achieve sustainability in their global supply chains. The reason for conducting multiple case studies was to capture the essence of the disparate strategies that are employed by multinational company leaders given the global scope and reach of current-day supply chains utilized by their respective companies. Urbinati, Bogers, Chiesa, and Frattini (2019) contended that a multiple case study methodology is regarded as more robust than a single case study because cross-case comparisons allow a more vigorous explanation building process and an understanding of contextual variables' effects.

I collected data and information by conducting face-to-face interviews with six leaders of three separate multinational consumer packaged goods companies in Northern Vermont, comprised of three Chief Executive Officers (CEO) and three Chief Operating

Officers (COO). Each of the leaders I interviewed had direct and extensive experience in crafting and executing strategies to manage their companies' global supply chains, and all of them were directly involved in their respective companies' planning, decision-making and execution of their supply chain strategies. Each of the participants received and completed a consent form conveying the purpose of the research, the voluntary and confidential nature of their participation, and their right to participate or to withdraw at any time. In the study, I referred to the participants as P1, P2, P3, and so forth, to ensure the confidentiality of every participant, and I used an interview protocol of 10 semistructured, open-ended questions to conduct the interviews. Table 2 below includes a description of each participant.

Table 2

Demographic information on participants

Participant	Years of Business Experience	Education
P1	28	Master's Degree
P2	26	Master's Degree
P3	34	Master's Degree
P4	31	Ph.D.
P5	22	Master's Degree
P6	27	Bachelor's Degree

Furthermore, I also collected data from company supply chain-related documents provided to me by the study participants, who have the authority to share these documents, as well as from publicly available sources including company websites and annual reports, and included new studies to achieve data saturation and methodological triangulation. By using methodological triangulation, researchers can overcome the weakness or intrinsic biases and the problems that stem from research designs using single method, single observer, single data source, or single-theory studies (Joslin & Muller, 2016).

Five themes emerged from my analysis of the data and information. I gathered data from direct interviews with the six multinational company leaders, from the internal company documents they shared with me, and from company artifacts including company websites and annual reports. The five themes that emerged were (a) consumer brand-led sustainability initiatives, (b) cross-cultural communication of mutual business objectives, (c) training and education of supply chain partners, (d) technology platform alignment between supply chain partners, and (e) mitigation of political influences.

Presentation of the Findings

The central research question for this study was: What strategies do leaders of multinational consumer packaged goods companies implement to achieve sustainability throughout their supply chains? The conceptual framework for exploring the central research question of this qualitative multiple case study was general systems theory (von Bertalanffy, 1972). Employing methodological triangulation of participants’ responses captured during direct face-to-face interviews, a detailed review of internal company documents provided to me that were related to their respective supply chain operations, a study of company artifacts including their company websites and annual reports, and a detailed literature review resulted in the emergence of five themes that were directly aligned to the central research question, the findings of the literature review, and the conceptual framework of this study.

Theme 1: Consumer Brand-Led Sustainability Initiatives

The first major theme that emerged from an analysis of the data and information gathered was the market power of consumer brands to promulgate sustainability measures throughout the branded products' supply chains. Every study participant (P1 through P6) emphasized that in the current business environment of heightened social and environmental consciousness among their consumer bases, their respective companies had no choice but to heed their consumers' demands for implementing and promoting sustainable business practices among all their supply chain partner companies.

P1 and P2 stated that over the last decade or so with the rise of social media, their consumer base had become increasingly interactive with their company in terms of wanting to know where and how products are made, what ingredients go into product lines, and what the company is doing to promote socially and environmentally safe and sustainable practices throughout the entire manufacturing supply chain.

P2 added that

> Although it was a difficult task to get our upstream supply chain partners in China and Indonesia to change some of their production and human resource management practices within their own companies to become more sustainable, they ultimately recognized that the end-consumers were demanding these changes

> and that their own businesses would be at risk if they failed to make the necessary changes in their manufacturing and human resource management practices.

This power to change manufacturing and human resource management practices mentioned by P2 is corroborated by Ferrell and Ferrell (2016) who posited that marketing channels are a part of supply chains, and as such, marketers of products and services are in a position to exert power in creating business norms and practices among all business partners in a supply chain, both upstream and downstream.

P3 and P5, who head up multinationals that market globally branded consumer products, reflected on the fact that due to their brands as well as their supply chains having a truly global footprint, it was incumbent on them to foster socially, environmentally, and financially sustainable practices throughout their respective global supply chains. P5 cited the example of how she "had to travel almost on a monthly basis to Malaysia to work with the senior management of their Malaysian palm-oil supplier company to change their palm growing and production practices to become more environmentally sustainable."

P5 added that

> At first there was some resistance by the supplier company to changing their growing and production processes, but when it was made clear to them that the palm oil they supplied went into cleaning products with global brand recognition, and that loyal consumers were demanding more sustainable palm growing practices, senior management at the supply company understood the seriousness of the consumer demands, and they made the necessary changes.

The example provided by P5 is also supported in the literature by Shaban and El-Bassiouny (2017) who studied consumer brands noted for sustainability and social responsibility, and they concluded that consumer loyalty and purchase intentions were positively correlated with brands known for sustainable and socially responsible business practices. Additionally, Cho, Soster, and Burton (2018) contended that given that consumer concerns about the environment, responsible production and consumption, and the downstream consequences associated with sustainability is significant and growing, sustainability programs will positively affect consumer perceptions of firms. P6 stated that he is noticing increasing consumer scrutiny of where the basic ingredients that go into our final products are coming from. In other words, concerns relating to where ingredient sourcing and processing are happening have been rising in the past several years as they pertain to the sustainability aspects of the ingredients. P6 added that "due to a variety of reasons, primarily as consumers engage more with the brands they routinely buy thanks to technology and social media platforms, there are grassroots demands by consumers for our company to source ingredients from countries and firms that engage in environmental and socially sustainable practices."

The comments made by P6 are borne out in the literature by, for example, Cowan and Guzman (2018) who studied the relationship between a company's brand performance and its sustainability, social responsibility, and country-of-origin sustainability reputation, concluded that a positive reputation on these dimensions enhances the company's brand equity and enables it to increase long-term shareholder value, profitability, access to new markets, and to increase brand loyalty and market share.

P1 and P3, whose respective companies derive more than a third of their annual revenues from European Union (EU) countries, emphasized that EU countries have laws and regulations that require companies to disclose both financial as well as non-financial information to all stakeholders regarding their sustainability and social responsibility programs and initiatives. P3 commented that

> In my career I have had the opportunity to work extensively in Germany and France, and I've always been struck by how serious most European consumers are about their product purchasing choices as they relate to how sustainable the products are and the social responsibility reputation of the companies they choose to patronize.

P1 was even more emphatic and said

> Frankly, because almost 40% of our market is in Europe, we really had no choice but to ramp up our sustainability metrics throughout our manufacturing chain or else we risked losing significant market share among our UK, Swedish, and French markets.

The more stringent requirements for sustainable business practices in EU countries have also been documented in the literature by, for example, Herrador-Alcaide and Hernandez-Soliz (2019) who pointed out that the European Parliament, through their 'Corporate Social Responsibility' resolution, mandated accountable, transparent, and responsible business behavior including sustainable growth initiatives by companies.

Under the resolution, customers, employees, and suppliers are considered stakeholders who have the right to demand information from companies about their social engagement programs and how the company is ensuring the development of sustainable business practices (Herrador-Alcaide et al., 2019).

Thus, Theme 1 aligns with the tenets of the conceptual framework for this study, general systems theory, which states that systems are characterized by the coordination of parts and processes within organized entities such as social groups and technological devices (von Bertalanffy, 1972). Systems theory views all organizations as open systems in that each system is constantly influenced by and places influence on the larger environment by operating in a continuous feedback loop which consists of inputs, internal transformation, outputs, and recursive feedback (Mania-Singer, 2017). The strong interdependence between all companies in a global supply chain is due to each company in the supply chain receiving inputs, performing internal transformation of the inputs, and producing outputs in a recursive feedback loop, which are the key elements of systems theory.

Theme 1 also aligns with findings from the literature. For example, Gillespie and Rogers (2016) contended that a growing number of consumers consider the effect of their consumption choices on society, and that empirical evidence indicates that sustainable supply chain management practices result in more favorable consumer brand evaluations and increased purchase intentions.

Theme 2: Cross-Cultural Communication of Mutual Business Objectives

The second theme that emerged from the information and data that I collected from the interviews, company documents, and artifacts was the importance of effective communication of mutual business objectives with supply chain partners who hailed from vastly different business cultures and national cultures. All participants, P1 through P6, weighed in on the paramount importance of ensuring that every supply chain partner company shared a common understanding of expectations regarding product specifications, product quality, delivery schedules, raw materials sourcing, and implementing sustainable practices throughout all aspects of operations. P2, P4, and P5 admitted initial cultural mistakes made by their officers when dealing with supply chain partners from China, Indonesia, and Malaysia.

P5 commented that

> In the early stages of dealing with our Malaysian counterparts, we thought that just having a couple of initial meetings with them to discuss sustainable ways of growing and processing palm oil would be enough to make it happen. However, what we realized was that although the Malaysian executives had verbally indicated their agreement on the need to make their processes more sustainable, the financial investment needed to implement process and equipment changes was never made. It took repeated meetings, and frankly an ultimatum that we may need to seek out another supplier, for them to finally make the necessary investment and changes to their process. Fortunately, things are now how they should be.

P2 voiced a different cultural issue that he encountered in his dealings with his Chinese partners and stated that

> About a year into our relationship, I went to Shenzhen to discuss with our Chinese counterparts our company's new push for sustainability in all aspects of our operations, and everyone at the table, including their VPs of Procurement and Manufacturing, agreed to make the changes needed for greater sustainability. However, six months down the road nothing had changed in the Chinese partner's operations, and this prompted another visit by us, including our CEO, to their factories in Shenzhen. We met with their entire senior executive team, and finally their CEO requested a private meeting with our CEO, and it was at this particular meeting that their CEO committed to making the necessary changes. What we learned later was that in China, anything that required substantial new financial investment or a major process change would only happen if the very top executive, the CEO, mandated it. The hierarchy and power distance between the levels is very much how they operate in China.

The comments made by P5 and P2 revolve around cultural misunderstanding of expectations and issues of organizational position and power distance, and they are in alignment with findings from the literature. Liu, Zhu and Cionea (2019) addressed the complications that can arise in cross-cultural business negotiations where the parties have different power distance characteristics and they contended that in intercultural negotiations, dyad members may have incompatible cultural values about power distance, and that such a mismatch can lead to divergent expectations about the required level of performance, and it may give rise to different emotions, goals, bargaining strategies and final outcomes. Jing and Yeli (2017) stated that in intercultural business negotiations, language is the skill that has to be mastered in a way that all parties understand what is expected, however, vague language is often used in negotiations which allows for different interpretations of the subject at hand leading to unexpected outcomes.

P1, P3 and P5 also mentioned the long and arduous task they went through to establish trust between them and their upstream foreign supply chain partners. P1 recounted that

> It took me five separate trips and several meetings, including informal lunch and dinner meetings with my Chinese colleagues before I felt that we were all on the same page, and this was most unusual for me because here in the U.S. we are so used to meeting someone once or twice, hammering out the details, and off we go knowing what to expect from each other.

P3 and P5 voiced similar views when talking about how long and involved the process was to just get to know and to establish basic trust with their foreign partners in Indonesia and Malaysia. P5 recalled “I was really surprised when my Malaysian partner invited me to his house for dinner on my very first meeting with him, I mean, we just don’t do those types of things here in the U.S.”

She continued by saying:

> I didn’t know what to do right at that moment, but my gut told me that if I turned down his dinner invitation, it would somehow work against me, so I accepted and went to his house for dinner that night. It felt a bit awkward to me initially, but in

> the end, it went off smoothly, and I think that my accepting his offer to visit his house for dinner helped establish a certain level of trust between us.

Establishing trust across cultures as a necessary ingredient for business success has also been documented in the literature. For example, Deeter-Shmelz, Lauer, and Rudd (2019) proposed the cultivation and maintenance of trust across cultures as one of the main themes in cross-cultural business success. Sachsenmaier and Guo (2019) studied the topic of trust building in the context of Chinese and German company mergers and acquisitions, and they concluded that a range of factors can foster trust development, including economic factors as well as emotional factors, such as mutual understanding, reliability, familiarity, and emotional bonding. Thus, by accepting the dinner invitation by her Malaysian business partner, P5 helped to facilitate mutual understanding, reliability, familiarity, and emotional bonding between herself and her Malaysian counterpart.

Theme 2 aligns with the extant literature as well as with the conceptual framework of this study, systems theory. Systems theory is a body of literature that explores the dynamic relationship between humans and material objects and technology in the generation of action (Booth, et al. 2017). It is the dynamic relationship between humans across cultures involving mutual understanding, familiarity, and trust, along with material objects and technology that are organized to achieve mutual business objectives that enable global supply chains to operate successfully.

Theme 3: Training and Education of Supply Chain Partners

The third significant theme that arose from the analyzed data and information gathered was the necessity to train and educate all relevant employees in all supply chain partner companies in three major areas, (a) sustainable procurement and manufacturing processes, (b) cultural and language training, and (c) logistics design and planning. All study participants, P1 through P6, strongly emphasized the need for training of all point-of-contact employees in each node of the supply chain, both upstream and downstream. Moreover, all study participants indicated that the onus of responsibility for pushing the training agenda among their upstream supply chain partners fell upon their own companies due to a mix of cultural and market-based realities.

Dubey, Gunasekaran, Childe, and Papadopoulos (2018) highlighted the skills gap among supply chain employees, arguing that people issues have greatly impacted the efficacy of present-day global supply chains, and that there is an acute need for investment in human talent to build the skills necessary to manage today's complex worldwide supply chains: in particular, the two functional areas Dubey et al. (2018) emphasized for employee training were the procurement function and the logistics function. In alignment with the findings of Dubey et al. (2018), P2, P4, and P6, who dealt with global operations management for their respective companies, pointed out that one of their biggest challenges was to institute ongoing procurement and logistics training programs at their supply chain partner companies. P2 stressed that "with the frequent upgrades in both procurement and logistics technologies, everyone is constantly playing catch-up both in our own company as well as in our partner organizations." P6 added that “since we are co-dependent with all our partners, we all need to ensure that all point-of-contact employees throughout the supply chain are effectively trained in the procurement and logistics technologies used by everyone.”

The codependency with all partner companies in the supply chain was echoed by P1 and P5 both of whom emphasized the increasing need for greater integration of operations among all supply chain partners. P1 voiced a concern that “one of the issues we are frankly facing with one of our Chinese partners is a disconnect between how we view our employees, as human capital, compared to their view of their employees as hourly paid workers.” P1 continued

> We don’t hesitate to make the investments necessary in training our employees on a regular basis because we are aware that our technologies will be only as effective as our employees who handle them on a daily basis. We are still working with our Chinese partners in bringing them around to seeing employee training as an absolute competitive imperative.

P5 stated that

> It took a lot of convincing, and some hard-nosed discussions with our Malaysian partner executives for them to spend the necessary funds to institute an ongoing procurement and logistics training program for their employees. The good news for us is that they finally committed the funds needed for ongoing employee training, and they have accepted our offer for our training managers to design and set up the training programs at their facilities in Kuala Lumpur.

The need for greater integration of operations among all members in the supply chain stressed by P1 and P5 aligns with the extant literature on the topic. Huo,Ye, Zhao, and Shou (2016) addressed the elements of supply chain integration and contended that advances in supply chain technologies have intensified the need for the concomitant development of soft infrastructure within companies. Superior technology is a necessary, but not sufficient, part of supply chain integration, and the key to successful integration among supply chain partner companies lies mainly in organizational structures and processes, and the relationships, cultures and human capital within each of the supply chain partner organizations (Huo et al., 2016).

A similar emphasis on relationships between supply chain partners and the degree of integration achieved was made by Adebanjo, Teh, and Ahmed (2018) who posited that building relationships with supply chain partners and customers is a vital dimension of supply chain management and integration because it impacts demand management, order management, product consistency, and delivery. Adebanjo et al. (2018) however cautioned that supply chain partner companies in emerging Asian countries often view themselves as low-cost contract manufacturers and, therefore, are likely to take longer and need more education to develop their human capital, which aligns with the observations made by P5 regarding the effort and time needed by her to convince her company's Malaysian partners to invest in employee training programs.

P1, P3 and P5 also highlighted the need for cultural and language training for all employees engaged in supply chain functions at all partner companies. P3 provided an example of initial dealings his company had with their contract manufacturing partner in

Bangladesh in which the contractor had not complied with agreed-upon environmental procedures and delivery schedule commitments. P3 mentioned that

> We could not understand why simple procedures and schedules could not be observed by them, and we got very concerned. We had invested time and effort into vetting and selecting them as our contractor, and I felt that I had to get to the bottom of the problem, so I flew to Dhaka and met with their senior management team to discuss these issues, and ultimately what I realized was that the real issue was based in cultural values placed on environmental matters and on time and schedule-related demands. I spent a lot of time explaining why adhering to certain environmental practices was important to us and to our customers, and also why it was imperative that they abide by the delivery schedules they signed on for, and after an adjustment period, they finally got their act together and things have been working well with them since.

Baranova (2018) contended that for a global company to be successful, it needs to be culturally competent and its employees need to be sufficiently trained to grasp the differences between national cultures and the consequences of these differences for effective management of cross-cultural groups. Azevedo and Shane (2019) advocated for employees and leaders of international companies to go beyond cultural training and to endeavor developing cultural intelligence (CQ) in order to effectively navigate and orchestrate company activities in an increasingly globalized and cross-cultural workplace that multinational companies find themselves operating in. As illustrated, the extant literature aligns with the theme of training and education of supply chain partners.

Theme 4: Technology Platform Alignment among Supply Chain Partners

The fourth significant theme that emerged from the data and information I collected and analyzed was the need for alignment of the supply chain technologies used by all nodes in the supply chain so that partner companies can transact business seamlessly throughout the supply chain. All study participants, P1 through P6, were in agreement that with the heavy dependence on the myriad technologies needed in supply chains, it was an absolute imperative that all partner companies in any supply chain have technologies that are compatible with each other.

P2, P4, and P6, who all directly oversee their respective companies' operations, were particularly emphatic on the need for technology platform alignment throughout their supply chains. P2 stated that

> If our warehouse inventory and order management systems currently in place cannot talk to our suppliers' outbound logistics systems, we cannot effectively operate on a day-to-day basis. We have upwards of 30 suppliers scattered over 4 different countries and we receive parts and materials from all of them on a weekly basis, and sometimes on a daily delivery schedule, and so it is absolutely essential for our inbound receiving systems to communicate with the suppliers' systems on a real-time basis, and this can only happen when our systems are mutually compatible.

P6 mentioned that

> The early years of dealing with our Malaysian partners were frankly a nightmare as their outbound logistics systems were antiquated, and here we were with state-

> of-the-art systems which couldn't communicate with theirs. Fortunately, a couple of years back, they finally made the investment to upgrade their outbound systems and things have been running a lot better since.

P4 mentioned that his company had similar issues with their Chinese counterparts and that

> We had to literally pressure their management to spend the money and upgrade their systems otherwise doing business with them would become untenable. Things are much better now after they realized the necessity of upgrading their systems if they wanted to continue doing business with us. We had already started looking for alternate suppliers, but when they made the upgrades that allowed their systems to mesh with ours, we decided to continue having them as our supplier.

The issues raised by P2, P4, and P6 are also supported in the extant literature on the topic. For example, Sheel and Nath (2019) recognized the interconnectedness of all partner companies in any supply chain and pointed out that in a supply chain, there is a continuous flow of material, money, and information between its members. All supply chain members must be technologically aligned to make the supply chain effective and efficient. Similarly, Ye and Wang (2013) conducted a study of 141 manufacturing companies in China to explore the relationship between technology alignment, information sharing, and operational performance, and they concluded that (1) both information technology alignment and information sharing have direct and positive effects on operational performance; (2) information technology alignment has an indirect effect on operational performance through information sharing, and (3) information technology alignment and information sharing contribute to operational performance improvement.

P1 and P5 put a forward-looking lens on the topic of technology alignment, and shared aspects of their upcoming technology infrastructure plans. P1 asserted that

> We are in an extremely competitive industry that caters to savvy and demanding customers and we must adopt newer technologies that can give us a competitive edge. For example, our tech team is studying the extent to which artificial intelligence (AI) and big data analytics (BDA) can be implemented in our supply chain technology infrastructure.

Similarly, P5 and her company are also considering ways in which they can adopt technologies including the internet-of-things (IoT), cloud computing, and 3D printing. She worried that

> We understand that to stay on the cutting-edge of competitiveness we will need to invest considerable amount of capital in upgrading our tech platforms, but I'm afraid that I'm going to have to fight the same old battles with our Malaysian partners to get them to also upgrade their systems for them to be compatible with ours.

The potential of newer technologies such as the IoT, big data analytics, cloud computing, and AI to revolutionize almost every industry has been corroborated in the literature as well. For instance, Koh, Orzes, and Jia (2019) explored the potential impact of newer technologies on operations and supply chain management, and they contended that what is being termed "Industry 4.0" is not only regarding integrating technologies such as the Internet of Things (IoT), Big Data Analytics, Cloud Computing, and 3-D Printing, but that it also encompasses the whole concept of how to acquire, share, use, and organize data and resources to make the product or service deliver faster, cheaper, more effective and sustainable.

Theme 4 aligns with the extant literature on the topic of technology alignment in supply chains as well as with the conceptual framework of this study, systems theory. Systems theory views all organizations as open systems in that each system is constantly influenced by and places influence on the larger environment by operating in a continuous feedback loop which consists of inputs, internal transformation, outputs, and recursive feedback (Mania-Singer, 2017). The strong interdependence between all companies in a global supply chain is due to each company in the supply chain receiving inputs, performing internal transformation of the inputs, and producing outputs in a recursive feedback loop, which are the key elements of systems theory.

Theme 5: Mitigation of Political Influences

The fifth theme that emerged from the analyzed data and information was the recognition of political risks and influences on global supply chains, and what strategies were used by the study participants' companies to mitigate political risks and influences. P1, P3, and P5 acknowledged the beneficial impact on their manufacturing costs and the resultant cost competitiveness they enjoyed as a direct result of trade liberalization policies over the past couple of decades, with the exception of the past 3 years when the current US administration took office. P3 and P5 stated that

> Thanks to globalization of production and the lifting of trade restrictions among most countries by governments around the world, we could not only outsource parts of our manufacturing activities, but were also able to source materials and intermediate parts from countries like China, Indonesia, and Malaysia."

P1 added that "our market strategy and price competitiveness would, realistically, not be possible without the existence of our lower-cost supply chain partners in China and Bangladesh."

The extant literature aligns with the observations made by P1, P3, and P5 regarding global supply chains and the resultant liberalization of trade policies by governments around the world in recent decades. For example, Meckling and Hughes (2017) proposed that the rise of global supply chains expands support for open trade beyond just multinational companies, and that it also leads vertically specialized firms, which specialize in specific stages of the production process, to back open trade. The firms that lobby their governments for trade protectionism are typically those that compete in the finished goods markets with imported finished goods from foreign manufacturers (Meckling et al., 2017). Similarly, Baccini and Duer (2018) also made the case that the globalization of production giving rise to global value chains (GVCs), and the growth of trade in differentiated products are two developments that have had a major impact on the worldwide political economy of trade, and due to the fact that GVCs make companies increasingly reliant on imports of intermediate goods which become the inputs for the manufacture of final products, liberalization of trade policies by governments has become increasingly commonplace over the past several years (Baccini et al., 2018).

Despite the existence of relatively open trade policies enacted by governments in recent decades, all study participants, P1 through P6, expressed concern with recent political pressures in favor of trade protectionism. P3 summarized the concerns shared by the other study participants when he commented that "frankly we are quite alarmed at the direction our trade policy is taking with the current Administration, especially with the escalating and unpredictable nature of the trade war with China and with some of our EU partner countries." P6 added that

> My company is not currently impacted by the recent round of tariffs and other trade restrictions because Malaysia has not yet been targeted by this Administration, but we are watching the political situation very closely and are developing contingency plans should there be any disruptions in our supply chains.

P1, P3 and P6, who headed up their respective companies, shared the two strategies employed by them to mitigate the impact of changing trade policies and to minimize disruptions caused by political forces. The first strategy involved a combination of direct lobbying by the companies themselves, combined with joining other industry groups in Washington to strengthen their lobbying efforts, and the second strategy was to implement alternate sourcing of the materials and parts they received from their upstream supply chain partners, combined with maintaining extra inventory of critically needed parts and materials. P1 remarked that

> Even if there were no disruptions caused by political changes, we have always had relationships with multiple suppliers in a couple of different countries just in

> case our primary supplier ran into either manufacturing problems or some other issues which could disrupt the shipments we needed from them.

P3 and P6 described similar approaches taken by their respective companies to minimize disruptions to their own companies' operations in case any of their upstream partner companies encountered issues that would restrict their ability to ship the necessary materials and parts to their companies for final assembly and manufacture. P6 added "we also routinely warehouse extra inventory of critical materials which would help us ride out temporary disruptions in our supply chains."

Ban and You (2019) attested to the widespread prevalence of lobbying in the United States and stated that more than 2900 organizations engaged in different types of lobbying activities to influence agenda setting and voting in Congress, and these organizations continue to lobby well after Congress passes legislation in order to participate in different stages of policymaking and use multiple tools in their attempts to achieve influence. Anderson, Martin, and Lee (2018) also documented the widespread nature of corporate lobbying and pointed out that organizations and companies spent upwards of $ 3 billion in lobbying expenses in 2016 alone, and they described lobbying as bringing pressure on government or public bodies to bring about commercial gain or competitive advantage (Anderson et al., 2018). Regarding the strategy of sourcing of materials and parts from alternate suppliers, Sawik (2017) supported the strategy and explained that in order to minimize losses caused by the shortage of material supplies, customer companies apply different disruption management strategies, such as maintaining redundant inventory and buying from an alternate supplier.

The fifth theme of mitigation of political influences aligns with both extant literature on the topic as well as with the systems theory conceptual framework of this study because the structure of global supply chains causes interdependence of operations among all partner companies in the overall supply chain, and an operational disruption in any of the partner companies can directly and negatively impact all downstream companies in the supply chain. Systems theory provides a framework for studying the interactions of parts of the system, and it places emphasis on the structure of organizations as a series of interrelated sub-systems in which each sub-system is interdependent on the other (Mania-Singer, 2017).

Applications to Professional Practice

Business leaders of multinational companies face numerous challenges in building sustainability within the global supply chains which their companies are part of, and depend on, for their continued survival and success. I conducted this study to explore strategies that are successfully used by leaders of multinational companies to achieve sustainability in their global supply chains. Based on the in-person interviews with six leaders of three separate multinational companies, the internal company documents on the subject that they shared with me, and other company artifacts including their annual reports and websites, my data collection and analysis yielded five major themes, (a) consumer brand-led sustainability initiatives, (b) cross-cultural communication of mutual business objectives, (c) training and education of supply chain partners, (d) technology platform alignment between supply chain partners, and (e) mitigation of political influences.

The results from this study contain valuable information and insights into strategies that may help other multinational company leaders in developing successful strategies to achieve sustainable global supply chains within the context of their own companies. Further, the findings from this study may help to extend the body of knowledge related to managing worldwide supply chains that are facing ever-changing and dynamic technological, economic, political and cultural forces. For example, Theme 1 highlighted the power of downstream supply chain manufacturers of globally-branded consumer products to drive sustainable business practices throughout their upstream supply chain partners as a business imperative. Davvetas and Halkias (2019) attested to the power of global and local brands to drive consumers' buying decisions, and they stated that the global presence of brands with their ability to form connections with local consumers represents important determinants of product evaluations and buying decisions by consumers in global markets.

The findings embedded in Theme 2 emphasized the importance of establishing a clear understanding of mutually shared business objectives across suppliers operating in different countries and cultures. Executives and leaders of multinational companies may benefit from the findings related to effective cross-cultural communication of shared business objectives with their supply chain partners by implementing measures within their organizations to increase cultural understanding and communication skills, particularly language skills, as pertaining to the cultures of their organizations' supply chain partners. Sharma and Hussain (2017) observed that employees of multinational companies are increasingly facing cross-cultural issues and workforce diversity with the growth of international business and called for multinationals to develop cultural intelligence within their organizations which entails the ability to function effectively in a multicultural environment where the assumptions, values and traditions of one's upbringing are not uniformly shared with others.

Themes 3 and 4 dealt with the need for training and education of supply chain partners and the necessity for technology platform alignment among all supply chain partners, and the findings from the themes may help supply chain executives to develop strategies to coordinate and synchronize the supply chain related technologies implemented at all partner organizations in the overall supply chain as well as in initiating consistent training programs for all employees directly related to system-wide supply chain functions. The need for systems compatibility throughout their companies' supply chains was unanimously emphasized by all study participants as they all recognized the potential supply chain disruptions that can occur if the technologies used by different companies upstream and downstream in the overall supply chain were incompatible with each other. Technology uncertainty caused by incompatible systems and processes reduces the ability of manufacturers in a supply chain to control the flow of materials, imposes adaptation problems, and thus increases the need for additional support from suppliers in the design of, and adaptations to, products and processes (Xiao, Petkova, Molleman, & van der Vaart, 2019).

The need for the mitigation of political influences in supply chains, which was agreed upon by all the study participants and the conclusions arrived at in Theme 5 have the potential to guide leaders of multinationals in developing strategies for their organizations to initiate alternate sourcing of materials and parts outside of their primary suppliers. If political changes related to trade laws and regulations in host countries where supplier companies are based prevent or disrupt the flow of materials and parts to downstream companies, having a secondary alternate source of supply of the required materials and parts, combined with maintaining extra inventories of critical materials and parts can minimize the disruption of operations in downstream and end-user companies in the supply chain. To mitigate the negative consequences of supply chain disruptions, companies often adopt the practice of building up supply chain resilience using risk mitigation inventory (RMI) and reserve capacity (Lucker, Seifert, & Bicer, 2019).

Implications for Social Change

The results and findings from this study, as encapsulated in the five emergent themes, may help multinational company leaders to develop strategies to successfully manage their global supply chains, which can directly contribute to business success in terms of enhancing customer relationships through dependable product availability and improving their companies’ brand image and reputation as a reliable supplier of products their customers expect. Enhanced customer relationships can contribute to improving their companies’ brand images and reputations, and this can result in growing their customer bases, revenues, and profitability, and increasing employment opportunities and job stability within their respective companies.

The potential beneficial consequences and impacts of successful multinational companies include (a) job stability, (b) greater employment opportunities, and (c) economic development in the countries and communities in which both multinational companies and their supply chain partner companies operate in. Mokhber, Gi, Abdul Rasid, Vakilbashi, and Mohd (2017) considered the impact of successful and profitable companies on their communities and concluded that apart from job security for employees, which is a direct result of the profitability of businesses, improvement in profitability also creates employment opportunities for more people, and in turn, an enhanced standard of living (Mokhber et al., 2017). Additionally, economic development promotes productive communities and alleviates the anxieties of job insecurity (Snorradottir et al., 2015).

Another beneficial implication for social change pertains to the various developing and emerging nations where raw material providers and upstream supply chain companies are located. In particular, China, India, Vietnam, Indonesia, Malaysia, and Bangladesh have enjoyed meaningful economic development and growth due, in large part, to multinational companies in developed Western nations partnering with supplier companies in these countries. The community and social benefits that result from growing and profitable companies, that are part of global supply chains, also serve as catalysts for positive social change in their respective countries. Costanza and Finkelstein (2015) observed that successful businesses can contribute to building the communities and societies in a variety of ways because profitable enterprises are more willing to participate in social responsibilities such as donating to local schools and charities, and serving in community organizations. Additionally, successful businesses also pay various tax remittances to the local, state and federal governments, which could enable government entities to improve public infrastructure for the benefit of the larger community (Costanza et al., 2015).

Recommendations for Action

The purpose of this qualitative multiple case study was to explore strategies that leaders of multinational companies implement to achieve sustainability throughout their supply chains. The emergence of ever more complex global supply networks combined with an increasingly turbulent business environment has significantly increased the vulnerability of today's efficiency-driven supply chains (Durach, Glasen & Straube, 2017). Based on the findings of this study, I have three recommendations for action that current and future leaders of multinational companies can consider to achieve sustainability throughout their global supply chains.

My first recommendation for action is for leaders and supply chain executives of multinationals to establish a cross-cultural understanding of mutual business objectives with all supply chain partners and to contractually document mutually agreed-upon sustainability actions that all partner companies commit to. One of the primary themes that emerged from this study, and agreed to by all the study participants, was the growing power of brands and consumers to demand that companies adopt sustainable business practices from inception through delivery of final products. Ceylan (2019) contended that companies are implementing sustainability programs in their operations and are devoting substantial budgets towards them based on the realization that consumers know and care about environmental as well as social issues and thus their purchase behavior would be influenced by them. Clear and consistent communication between all supply chain partners is critically important, and to facilitate it, I also propose that leaders and executives of multinational companies undertake cultural and language training prior to doing business with potential partner companies in different countries and cultures.

My second recommendation for action is that leaders of multinationals should ensure the alignment of critical technologies, including newly evolving technologies, with all supply chain partner companies in order to maximize the efficient operation of their entire supply chains. For example, blockchain technology can improve supply chain adaptability, alignment, and agility which lead to competitive advantage, which leads to better firm performance and the trust generated through blockchain use also increases firm performance (Sheel et al., 2019).

However, all the study participants, P1 through P6, pointed out that one of the obstacles to adopting newly evolving supply chain technologies was the reluctance of some partner companies to make the necessary investments in new technologies within their own companies. To help alleviate this issue, I propose that leaders of multinationals coordinate with their supply chain partner company executives to negotiate meaningful volume discounts with technology vendor companies in exchange for system-wide purchase and implementation of vendor company technologies, which in turn would reduce the expense for all partner companies in the supply chain.

My third recommendation for action is for leaders and executives of multinationals to minimize supply chain disruptions by building inventory redundancy for critically needed materials and components, and also by establishing alternative sources of supply in addition to the primary suppliers. The potential causes of supply chain disruption are varied and include cultural gaps and miscommunication leading to extended lead times and missed deadlines, legal and political uncertainty when dealing with foreign partners which can result in unexpected delays and roadblocks, and transport infrastructure failure and deficiencies in availability, capacity, and quality of transport routes and transport equipment used to maintain supply chain operations (Durach et al., 2017). Although maintaining redundant stockpiles of critical materials and components will require additional financial investment on the part of multinationals, it will serve them well in terms of ensuring a more efficient and predictable manufacturing process, which in turn will result in adequate levels of finished goods inventories to satisfy customer demand at the retail level. Assessing the supply chain from the end consumer's consumption perspective helps to better improve the activities of the entire supply chain by focusing on the people along and at the end of the chain (Ellis, Ebenezer & Ngadi, 2019).

To disseminate the findings of this study, I will share the results with all the study participants, all of whom have expressed an interest in learning what the findings and recommendations of this study are. I also plan to share the results of this study while conducting business training seminars for supply chain executives in northern Vermont as well as in other parts of the country. Finally, to reach a wider audience, I plan to publish the study in manufacturing and supply chain industry publications.

Recommendations for Further Research

In this study I explored strategies that some leaders of multinational companies successfully used to achieve sustainability in their global supply chains by conducting qualitative multiple case studies of three consumer packaged goods companies located in northern Vermont. As such, the limitations of this study are the focus on a limited geographic area and on one particular industry, the consumer packaged goods industry, which makes generalizing the results of this study untenable. In order to make the results of the study more generalizable, I propose three new approaches for future research.

First, future researchers of supply chain related matters should cover a more expansive geographic area within the United States, which could result in capturing features and issues that are prevalent in different parts of the country. Studying companies located in different parts of the country would result in increasing the number of study participants, thereby yielding a wider array of data and information.

Second, further research on supply chain sustainability should compare and contrast companies and supply chains engaged in a wider variety of industries. Researching and examining supply chain sustainability practices across different industries would yield a greater variety of challenges and opportunities than focusing on one particular industry. Studies in which the purpose is to establish commonalities and allow for generalized comparisons across industries, a larger number and variety of participants are needed (Saunders & Townsend, 2016).

Finally, future researchers could expand the focus on emerging countries as well as on less developed, yet resource-rich, countries where large numbers of upstream supply chain partner companies are typically located. Environmental and social sustainability issues are relatively new concepts in emerging and less developed countries that are in the early stages of economic development compared to the more advanced economies they do business with as upstream participants in current-day global supply chains.

Reflections

My experiences in the Walden University Doctor of Business Administration (DBA) have been nothing short of challenging, exciting, and enlightening. My interest in international business and global supply chains originated in my childhood as I was born into an industrial family which manufactured agricultural tractors and construction machinery, with our family-owned companies partnering with Caterpillar Inc. and John Deere Inc. as well as with Komatsu of Japan. Growing up in the family business allowed me an early exposure to the opportunities and challenges inherent in international business, and in the current era of globalized business, it is exciting to witness how entire countries and economies benefit when companies do business with other companies in different regions of the world.

As I went through the DBA program, first with the courses and then with the dissertation process, I significantly expanded my knowledge base related to international business in general, and in particular, I gained valuable insights into the workings of global supply chains. In addition to expanding my knowledge base, I developed a great appreciation for the research process the program requires and the commitment to excellence that the Walden faculty demonstrated throughout my doctoral journey, and for that I am very grateful.

I also learned immeasurably from designing and conducting my project on achieving sustainability in global supply chains. The time I spent with my study's participants during the interviews and the information I gathered and analyzed from the interviews as well as from internal company documents and other company artifacts taught me a lot about the operations of global supply chains, the progress made to-date on improving efficiency and sustainability standards, as well as the many opportunities and obstacles that still exist in improving sustainability performance in global supply chains. As more countries around the world seek to develop their own economies and use increasing amounts of resources in the process, the need for developing sustainable ways of manufacturing products and delivering services is going to grow, and it is my hope that this study will shed some light on strategies that can be used to achieve sustainable global supply chains.

Conclusion

The forces of globalization, technology, and economic growth around the world have increased the level of international business and trade among companies and countries, and have spawned the development of complex global supply chains that involve multiple countries and companies. Businesses operate within globally distributed production and service delivery systems connecting dispersed clients and suppliers in complex global supply chains (Kannothra, Manning & Haigh, 2018). Recent activity indicators have provided evidence that the synchronized global acceleration in growth looks set to remain strong by post-global financial crisis standards (May, 2018).

Along with strong economic growth around the world, and the many benefits that accrue from economic activity in terms of employment growth, increasing incomes, and an ever-growing array of product and service choices for consumers from around the world, there is growing concern especially in the advanced economies in Western countries about the need to develop environmentally, socially, and economically sustainable business models and practices. Sustainability has received considerable attention in industry and academia, and many firms have begun to adopt sustainability practices, such as investing in cleaner technology and using organic or recyclable materials to enhance sustainability in supply chains (Dong, Li, Shen & Tong, 2019).

The overarching objective of this study was to explore strategies that leaders of multinational companies implemented to successfully achieve sustainability in their respective global supply chains. The data and information collected and analyzed in this study yielded five major themes that served to enhance sustainability in global supply chains including (a) consumer brand-led sustainability initiatives, (b) cross-cultural communication of mutual business objectives, (c) training and education of supply chain partners, (d) technology platform alignment between supply chain partners, and (e) mitigation of political influences. Each of the themes when implemented separately has served to enhance sustainability in the study participant companies' global supply chains, and when implemented in combination with the other themes has increased the sustainability performance of all partner companies throughout their respective global supply chains.

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Appendix A: Interview Protocol

Introduce myself to the participant and interview process and purpose of the research over coffee. Assure the participants that the collected information is kept confidential, ask that I record the interview, and discuss participant right to stop the interview at any time without consequence. Check to ensure participant meets criteria before beginning interview.

The questions for the interview are as follows:

Interview Questions:

1. What strategies does your organization have to ensure product sustainability throughout your supply chain?
2. What strategies are currently employed by your organization to realize environmental sustainability in your supply chain?
3. What strategies are used by your organization to impact social sustainability among your supply chain partners?
4. How does your organization measure the success and the impact of the current strategies you have for both environmental and social sustainability?
5. What are the major internal as well as external obstacles your organization has encountered in implementing the current sustainability strategies?
6. How has your organization dealt with these obstacles?
7. How successful have your attempts been in dealing with the obstacles you mentioned?

8. In dealing with international partner companies within your supply chain, what specific cultural and political issues prevent the achievement of product sustainability?
9. How does your organization deal with such cultural and political issues?
10. What additional information can you provide to assist me in understanding your organization's long term outlook on achieving global supply chain sustainability?

Wrap up the interview by thanking the participant and schedule follow-up for member checking interview.

Follow-up and Member Checking Interview

Introduce follow-up interview over coffee.

Share succinct synthesis for each question and interpretation.

Ask a probing question related to any information that I found during the interview.

Walk through each question, read the interpretation and ask: What might you like to add to your original response?

Wrap up by thanking the participant.