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Strategies to Reduce Supply Chain Disruptions in Ghana

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Walden University

College of Management and Technology

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Carl Kwaku Dey

has been found to be complete and satisfactory in all respects,
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the review committee have been made.

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2016

Abstract

Strategies to Reduce Supply Chain Disruptions in Ghana

by

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MBA, University of Texas at Arlington, 2009

BS, University of Texas at Arlington, 2005

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

December 2016

Abstract

Supply chain disruptions are more prevalent in Ghana as businesses develop and become more complex. While business leaders recognize the importance of reducing the exposure to disruptions, 83 % of companies still suffer a form of disruption. Using the systems theory as the conceptual framework, the purpose of this qualitative case study was to explore strategies supply chain managers in Ghana use to reduce disruptions in the supply chain. The data collection was through face-to-face, semi-structured interviews from 12 supply chain managers who gave tape-recorded interview responses to 8 questions. Transcript evaluation, member checking, and methodological triangulation ensured reliability and strengthened the credibility of the data collected. Data analysis revealed 6 themes, which included identification of disruptions before they occur, information sharing and collaboration between partners, management strategies to mitigate supply chain disruptions, inventory optimization, availability of human capital, energy, and finance problems. The identification of disruptions was important to participants because they believed if they identified potential disruptions they might prevent them from happening. The collaboration between partners was important because participants believed that the speed at which stakeholders work together after a disruption determines the extent of the cost and the recovery period. Business leaders could apply the findings to provide insight to businesses to reduce disruptions, improve best practices, and increase business profits. Implications for social change include the enhancement of company profits given efficiencies in the supply chain. Such increase in profits leads to increases in taxes, which contributes to the overall betterment of the local communities.

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Dedication

I dedicate this study to my beautiful family. To my wife Elorm Dey, my daughter Mya Dzifa Adjele Dey and my son Carl Wilson Dey Jnr. for their sacrifices and support during my study. Their love and understanding throughout the process gave me the determination to complete this challenging journey. I also would like to dedicate this study to the loving memory of my late father, Carlos Sylvanus Dey and my late mother, Florence Adjele Dey. You blessed me and thought me to endure in challenging times and to fly high like an eagle.

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Section 1: Foundation of the Study

In this study, I examined and explored the reasons, courses, and factors that lead to disruptions in the supply chain. Many strategic, logistical and managerial decisions occurred along the supply chain (Vilko & Hallikas, 2012). The complexity and demands of global business have made the reliability of supply chains uncertain; the unreliability of the supply chain is an issue that practicing managers must resolve (Macdonald & Corsi, 2013). About 83% of companies suffered supply chain disruptions in the previous 12 months, which affected the delivery of products, goods, and services (Wildgoose, Brennan, & Thompson, 2012). Unique examples included the terrorist attacks in New York in 2001, Madrid in 2004, London in 2005, and Jakarta in 2009. Natural disasters like the tsunami in 2004; Hurricane Katrina in 2005; Taiwan earthquakes in 1999, 2009, and 2010. Other disruptions are diseases like SARS in 2003, avian flu in 2005, and swine flu in 2009 (Wagner & Neshat, 2012). Although ample literature existed on disruptions in the supply chain, a concern was growing among suppliers, manufacturers, and customers as firms had become exposed to risks and weak operational performance (Hu, Gurnani, & Wang, 2013). Hsieh (2011) asserted that because demand for goods and lead times is uncertain, the smooth flow of the supply chain became distorted, leading to disruptions. Business leaders needed experienced managers to run organizations to make them sustainable because global business transactions had become complicated (Metcalf & Benn, 2013).

Background of the Problem

Ghanaian companies were not using supply chain management efficiently because managers lack the strategies and skills to transform business efficiently. An example was the supply chain disruption delay in the Boeing company for two years which cost the company 11 billion dollars (Bello & Bovell, 2012). Technological improvements have not made potential disruptions any easier. Unlike technological risk, which may minimize as technology standards become mature and stable, the transaction risk associated with supply chain systems was less controllable (Xue, Zhang, Ling, & Zhao, 2013). The challenge of getting supplies from different geographical locations was real. An example was the volcanic eruption in Iceland in 2010 which disrupted air travel and affected time-sensitive air deliveries to and from places in parts of Europe (Chopra & Sodhi, 2014).

Analysts studied and introduced measures like investing technology to reduce supply chain disruptions; but, many actions have led to the complexity of the system and become ineffective (Yang & Yang, 2010). Because of the complexities to match supply and demand on a large scale, Ghanaian companies have struggled to find a place in the ever-competitive world market. Managers in Ghana have started investing in the skills of employees to manage the growing challenges.

Problem Statement

The complexity of supply networks and detrimental effects of supply chain risks have made business disruptions common (Wagner & Neshat, 2012). Shareholders lost an average of 10% of the value of their stock in the 2 days after the announcement of a business disruption (Bello & Bovell, 2012). Issues related to such losses were especially

true in developing economies where the repercussions of inadequate supply chain management practices had a significant effect on company performance (Simangunsong, Hendry, & Stevenson, 2012). The general business problem is that disruptions caused by poor forecasting, inaccurate planning, parts shortages, and quality issues contributed to supply chain disruptions. The specific business problem is that some managers lack strategies to minimize supply chain disruptions.

Purpose Statement

The purpose of this qualitative multiple case study was to explore strategies that managers used for minimizing supply chain disruptions. The research population consisted of supply chain managers from at least three fast moving consumable (FMC) companies in Accra- Ghana. These participants had demonstrated success in supply chain management by having fewer than five supply chain disruptions in the past year. The data and information from this study may contribute to the application of new knowledge in supply chain management. The new knowledge helped companies reduce disruptions and increase efficiency, which may have led to profits and growth for businesses. The increased efficiency attracted more investment capital for business expansion and job creation. The creation of better-paying jobs resulted in a rise in personal income for the citizens. The increased income helped to provide a better standard of living for the residents of Accra.

Nature of the Study

A qualitative method was appropriate for this study. Qualitative research begins with assumptions and the use of interpretive frameworks that informed the meaning

individuals and groups ascribe to a problem (Sinkovics & Alfoldi, 2012). Qualitative researchers examine attitudes of individuals and assessed the similarities (Schleifer & Rothman, 2012). A quantitative research involved the use of statistical analysis and variables (Suri, 2011). Quantitative research was not appropriate for this study because I was not comparing variables (Frels & Onwuegbuzie, 2012). A mixed study was not the best for this research because mixed methods did not give the opportunity for the type of interviews needed for this study. Brannen and Moss (2012) asserted that mixed method was suitable for researchers who were looking for a deep understanding or a phenomenon from a statistical perspective.

A case study approach was appropriate for this study because researchers used a case study to explore single or multiple situations using various procedures for data collection (Wahyuni, 2012). Ethnography was not appropriate because the research was not to study a cultural group over an extended period (Kriyantono, 2012). I did not use a phenomenology study because the research was not to build emerging themes based on the lived experiences of supply chain managers (Wertz et al., 2011). The study was not about narrating the experience of individuals or to collect data chronologically, so narrative research was not appropriate for this study.

Research Question

The central research question for the study is: What strategies can managers use to minimize supply chain disruptions?

Interview Questions

1. What is the organizational supply chain management strategy?

2. How do you identify strategies to reduce the risk to the supply chain of your organization?
3. How do you prevent disruptions in the supply chain?
4. How do you manage disruptions in the supply chain?
5. What coping strategy did you learn from any recent disruption?
6. How do you as a manager adopt a strategy to address supply chain disruption with your suppliers?
7. What systems do you have in your company to support supply chain disruption risks and implementation?
8. Do you have any additional information that you would like to add that I did not ask?

Conceptual Framework

The strategic application of systems theory helped firms invent and produce unique processes for addressing existing problems. The general systems theory was the conceptual framework for this study. The general systems theory was a methodology used to employ a systems approach to finding meaning to complex problems. The key concepts of the general systems theory are (a) the system is more than the sum of the parts, (b) the system can be open, closed or semipermeable to the environment, (c) feedback is the intermediary between system behaviour and goal, (d) the central variable of the system was time, (e) change represented a transformation of the system, and (f) defining the system environment boundaries will identify and establish what was inside

the system and what was outside in the environment and its subparts from the system as a whole (Laszlo & Krippner, 1998).

von Bertalanffy (1968) first propounded the general systems theory in 1930. Traditional organizational theorists believed organizations were closed systems without considering any external influence. Von Bertalanffy (1972) discovered the importance of the external environment on the organization. Von Bertalanffy posited that the success or failure of an organization or system depended on the interaction between the various elements of the system (both internal and external) and the environment. I used this frame of reference to explain the concepts that the network of the supply chain was a system made of many parts both internal and external (von Bertalanffy, 1968). The person conducting the study defined the boundaries of the elements of the organization under study (von Bertalanffy, 1972). For this study, the elements of the supply chain in Ghanaian companies were the entities under investigation. The general systems theory served as a conceptual framework for understanding the relationships between the individual parts of the supply chain and the external environment.

Operational Definitions

Supply chain management: The multidisciplinary philosophy used to describe how organizations conduct business and the production and distribution that enables integrity, integration, operational efficiency, and continuous improvement (Ellram & Cooper, 2014).

Assumptions, Limitations, and Delimitations

Assumptions

The assumptions in this study were statements accepted as true, without any form of verification (Rossiter, 2008). I assumed that the information from the supply chain professionals was accurate and participants answered the questions to the best of their knowledge. I assumed that participants in the study had adequate knowledge of all aspects of the supply chain process from beginning to end.

Limitations

Kirkwood and Price (2013) defined limitations as possible weaknesses or gaps that may affect the research. The supply chain managers in the study were from companies in Accra, the capital city and not the entire country. In Ghana, where I conducted the research, privacy was a problem for the leadership (Mutsuddi, 2012). Even when the participants were willing to grant interviews, they were cautious to share extensive information on the company strategy dealing with supply chain disruptions. The unwillingness was because they feared the information will get to a competitor or could lead to various objections and displeasure from their superiors (Blome, Schoenherr, & Rexhausen, 2013).

Delimitations

Delimitations were those limitations that I had set for the study (Rusly, Corner, & Sun, 2012). The participants of the study were not representative of all companies in Ghana. This is because all of the interview participants were from companies from Accra and not the whole country of Ghana.

Significance of the Study

The value of this research study was significant because I explored the factors that led to a reduction in supply chain disruptions or the prevention of disruption in the supply chain. There was very limited literature on disruptions in the supply chain in Ghana. Supply chain managers in Ghana and other similar economic environments would benefit from the strategies that will help in reducing disruptions in the supply chain.

Contribution to Business Practice

The focus of this study was to explore the factors that contributed to a reduction in supply chain disruptions. This study may provide insight to businesses in Ghana and similar economic environments on how to reduce disruptions in the supply chain and increase business profitability. Improved supply chain increases efficiency in business, and helps to reduce the impact of a supply chain disruption (Asamoah, Amoakohene, & Adiwokor, 2012). The improvement in planning, implementing, and controlling the efficient and effective management of information between the origin of products and the final customer would help the business to cut cost and increase profits. The results from this research may help business leaders to improve sustainability and minimize the impact of supply chain disruptions

Implications for Social Change

Social change should be an important part of every organization in the community in which it operates. Fewer disruptions in the supply chain meant an efficient business operation. The effectiveness of the supply chain led to the lower cost of production which resulted in lower prices for customers, and improved quality standards of goods and

services. Companies also earned enough to invest in projects like building schools, providing potable drinking water, electrification projects, and community development activities in communities in Ghana.

Another important benefit that Ghanaians enjoyed was that employees in these companies contributed their time, resources, money, and skills to charitable organizations. The taxes paid by businesses directly affected the revenues of local authorities and governments. The taxes were used to build roads, bridges, schools, houses, and other amenities that facilitated other social services. These amenities had a positive social impact because the amenities improved the life of the people especially in the rural and deprived areas in Ghana. The ability of local authorities to provide the facilities to the citizens helped raise the standard of living for the citizens.

A Review of the Professional and Academic Literature

The literature review for this study provided a background of supply chain management challenges, especially in developing economies like Ghana. The purpose of the study was to explore strategies that supply chain managers used to reduce disruptions in the supply chain. Interviewing professionals making supply chain decisions with their organizations provided most of the information for the research. The review helped support the study to find strategies to solve or mitigate disruptions of supply chains. I developed a literature review matrix to help track the journals that provided information on the supply chain. The review was an examination of the literature related to the history and changes that have taken place in the supply chain in the past and how the changes

have influenced customer satisfaction. Particular emphasis was on the review of data on disruption, development, and strategies to reduce disruptions in the supply chain.

I analyzed the conceptual framework, the effect of information technology (IT) and strategies to improve disruptions in the supply chain. The analysis included the influence of culture, skills of professionals and incentives to employees working in the supply chain and how the incentives affected their attitude and output of workers in the industry. The search engines for the review included Business Source Complete, ProQuest, ABI/INFORM, and Google Scholar. Keywords like supply chain management, supply chain disruptions, developing economies, developed economies, value chain, and systems management were search phrases I used to find 179 journal articles and books for the study. About 92% of the journal articles publishing dates were from 2012 to 2015. Current journal articles helped me understand trends in business and supply chains. The literature review has 94 peer-reviewed sources, and the proposal has a total of 141 peer-reviewed sources.

Systems Theory

Supply chain management falls within a conceptual framework of systems theory, which helped explain the context in which supply chain functions well. A system is an adaptive whole that survives any changes to the environment in which it functions (Checkland, 2012). Between 2006 to 2016, efforts were made to establish a theoretical framework for the existence and limits of supply chain management (Shaffer, Dalton, & Plucinski, 2011). Abhijeet, Samir, Chester, and Kalawsky (2013) suggested that to understand and improve, professionals had to review supply chain from a system of

systems perspective. von Bertalanffy (1972) discovered the importance of the external environment in the organization and stated that the success or failure of a system depended on the collaboration between the various elements of the system and the environment in which the elements function. This frame of reference is what I used to explain the concepts that the network of supply chains was a system made of many parts.

The primary role of systems theory was that each part of the system connected to the others, and each part must perform to perfection. Managers needed to manage the system to prevent any disruptions and to enhance the smooth flow of people, goods, and services. Non-heterogeneous agents obey rules about behavior in challenging systems that produce conforming patterns for the system (Stacey, 2011). In totality, the system was the putting together of all the parts of the whole to make it complete and to function appropriately (Stacey, 2011).

The increased complexity of business created the need to have more developed systems to cope with the advances in technology, education and the development of modern society. von Bertalanffy (1972) suggested that over time, parallels existed amongst many areas of study from the sciences, social life, and economics to everyday life. In very highly complex systems, parts of a particular unit may be broken into subsystems for analyses so that experts could study their objectives and their relationship to which the system is put together again. The goal was to seek a better understanding of the individual pieces that constitute the unit including the external factors. The different parts that formed and operated the system play a unique role without which there could be a distortion.

The study of systems theory enabled managers to have a full view of the organization and coordinated the arms of the organization effectively to prevent a disruption (Kauffman, 1990). Senge's (1990) systems theory advanced on the findings of von Bertalanffy. Senge noted that identifying the imperfectness within the firm may be significant to the success and effectiveness of the organization. Systems theory is dynamic and assists with identifying issues in the supply chain; the study of the theory helped managers to understand how to address the issues that affected the smooth flow of the system. For example, if the raw materials arrived on time at a manufacturing company, the raw materials are processed, packaged and shipped on time, but the delivery to the customer was behind schedule because of logistical issues in transportation. The system was still ineffective because one part of the system, in this case, transportation, had failed the whole system although all other areas of the system had a perfect record of performance. A disruption-free system is required for any supply chain function to be useful.

Problems Associated With Supply Chains in Ghana

The increased uncertainty in supply chain and business has increased the vulnerability of the supply chain (Evrard-Samuel, 2013). Supply chain disruptions are increasing, and the impact of the disruptions are costly (Son & Orchard, 2013). In some organizations, the disruptions led to financial losses and a negative effect on company performance and shareholder value (Macdonald & Corsi, 2013). The disruption affected the sales of goods, and services and increased the cost of transporting people, products, and services (Porterfield, Macdonald, & Griffis, 2012). In Ghana, the challenges ranged

from institutional constraints, underdeveloped market mechanism, cultural differences, law enforcement, and legislation (Fujun, Yu, & Baofeng, 2012).

Most disruptions occurred in the form of production delays, poor packaging, delivery delays, substandard products, and logistical issues. These are mostly human-related problems that are difficult to prevent. In the construction sector, for example, the government awarded contracts based on the least costly proposals and personal relationships and not the best qualified for the job. This approach of issuing contracts led to poor construction performance, cost overruns, project completion delays, and abandonment of projects (Annan, Asamoah, & Nyarko, 2012).

In the energy sector of Ghana, although liquefied petroleum gas (LPG) was more affordable, efficient, and environmentally friendly, the problems of shortages and unreliability of gas has made it scarce, expensive, and unreliable. The yearly shortage has made the use of LPG an uncomfortable experience that needed urgent attention (Asamoah et al., 2012). The inefficiencies have affected many countries along the West African Gas pipeline. Countries like Ghana, Togo, and Benin had suffered from these disruptions. Manufacturing companies in these countries, who depend on energy to function, shut down because of the unreliable power supply. The shutdown led to layoffs, and the citizens did not have the ability to earn enough income. The insufficiency hurt production and resulted in economic problems. On the domestic front, homes were left without electricity for extended periods of time. The poor power supply was not suitable for a country that needed to attain middle-income status. The lack of power to the local communities contributed to the low-income status of civilians because businesses closed

down. The scarcity of LPG had influenced business performance negatively and had proven to be a challenge for managers (Bell, Autry, Mollenkopf, & Thornton, 2012). The electricity outages, natural disasters, and bad management all disrupted supply systems in Ghana (Wagner & Neshat, 2012).

Other problems in Ghana were the inadequate supply of materials, goods, and services. Although managers could identify the problems, the managers were sometimes not clear about what strategies could improve the problems (Cabral, Grilo, & Cruz-Machado, 2012). For example, the shortage of raw materials was usually the result of inadequate information, and the unawareness of Ghana's supply chain capacity to address the problem (Wildgoose et al., 2012). The unawareness and insufficient information compelled managers to take unmeasured actions that sometimes led to disruptions. Some managers looked at one risk at a time and did not thoroughly consider the effect of multiple risks on the supply chain network (Abhijeet et al., 2013). The unawareness led to poor performance in the supply chain and had resulted in inefficiency in partner companies as well (Sodhi, Son, & Tang, 2012). The economic instability and lack of awareness in managing supply chain disruptions were strategic challenges for most business managers in Ghana (Sodhi et al., 2012). The task of dealing with the challenges was enormous, and as a result, companies continued to be uncertain about what to expect. Supply chain uncertainty in Ghana had increased because of the complexity of global supply networks (Simangunsong et al., 2012). The systems have become complex that companies in Ghana found it difficult to cope with external partners.

Collaboration within the supply chain was essential for business growth. Chang and Graham (2012) described collaboration as two or more elements of the supply chain that are responsible for implementing practices and procedures. In the attempt to increase collaboration and efficiency in the supply chain, Ghanaian companies had increased their business activities with the United States, China, and the United Kingdom, who had a more efficient supply chain management system. With fast-moving commodities in countries like China, that had seen improvements, the problems of low operating efficiency, high cost and lack of collaboration and information sharing had made most of the domestic retailers lag behind international retail giants like Walmart and Carrefour (Li-xia, Qi, & Xu, 2014). The effective use of supply chain could help Ghanaian companies to attract a global audience, but the companies continue to face challenges in collaboration with suppliers and other partners.

Wildgoose, Brennan, and Thompson (2012) expressed the need for suppliers to be transparent and volunteer information about business operations, control, and operational activities. The challenges presented by the tightly connected global economy and external pressures puts traditional management practices at a disadvantage (Pettit, Croxton, & Fiksel, 2013). The disadvantage created an imbalance that led to disruptions especially in countries that did not have a well-developed supply chain management system implemented. In some cases, the disruptions are massive, and companies did not survive the impact. The disruptions continued to be a problem because Ghanaian companies had not realized that the modern supply chain had developed from getting a product from the supplier to the manufacturer. The supply chain has become a complex network of

interdependent business chains that needed to be managed strategically to achieve the desired results (Wagner & Neshat, 2012).

A problem that continued to hurt companies in Ghana is that managers do not synchronize supply chain functions with information sharing between stakeholders from raw materials to the final consumer to prevent issues of misinformation (Knudsen, 2012). Synchronization problems continue to happen in many Ghanaian companies and information sent to stakeholders was incomplete, or incentives were not aligned properly with the objectives of the supply chain (Clark, 2012). Inaccurate information made decision-making impossible for the manager to keep disruptions from occurring (Knudsen, 2012). The problem had become the case of trying to solve a supply chain challenge with a different and an unrelated solution.

In many circumstances, the consequences of a disruption in Ghana were costly and could collapse many organizations that did not have the financial and managerial capacity to survive. Managers needed to know that all forms of disruption in supply chain come with costs. The difficulty for the managers was how to choose and implement viable methods for managing the disruption, and improving supply network efficiency in all parts of the business (Bello & Bovell, 2012). Some supply chain managers did not review the cost of disruptions. The managers ignored the hidden direct and indirect cost and their effect on profitability and the supply chain (Co, David, Feng, & Patuwo, 2012). The cost of the disruption had a direct negative effect on the profits of the business and managers must know the pressure unplanned cost adds to the survival of the company. Apart from unexpected human disruptions, unforeseen cost from natural disasters like

hurricanes Katrina, Gustav, and Ike, had significant economic effects on businesses, and communities that experienced the disruptions (Omer, Mostashari, Nilchiani, & Mansouri, 2012).

Supply chain management had become increasingly interdependent; making cooperation an important aspect of supply chains. Managers in some companies in Ghana have found cooperation among supply chain more beneficial because of the potential cost savings and the benefit of economies of scale. However, some managers struggled to work with other partners because some partners took unilateral actions that were not optimal for the business (Sekip Altug & van Ryzin, 2014). The actions of the partners were in a bid to make more profits. The effects added to the challenging responsibility of managing other partners to provide cost-effective and superior services (Chaudhuri, Mohanty, & Singh, 2013). These partnerships were usually not handled well in Ghana, and that led to cutting off business relationships. The end of the business relationship led to an increase in the cost of production and distribution for each company. The increase in cost was because all partners began to work independently and lost the advantages that come with economies of scale.

Managers also struggled with the problem of bankruptcy from participating supply chains. Bankruptcy occurs when an organization develops chronic and severe operational losses because of the firm's poor management. The company becomes insolvent with liabilities usually disproportionate to assets (Hua, Sun, & Xu, 2011). An example is the 2008 financial crises. Financial institutions issued subprime loans, chief of which was Lehman Brothers Holding Inc. The resultant effect was Lehman Brothers

filing for bankruptcy and other companies that Lehman Brothers owned also filed for bankruptcy. Other banks and securities and investment firms that worked with them either collapsed or lost business. In a situation of this nature, is difficult to solve the problem by switching suppliers especially when the problems have a connection to legal, political or regulatory controls where the vendor was providing a service and not a physical good (Wildgoose et al., 2012). Leadership has a unique role to play in developing the effectiveness of the supply chain and managing the financial health of partners.

As manufacturing and other strategic industries develop, the need for logistics systems that consist of resources such as people, organization and technology have equally grown. The challenge of providing utility to customers continues to make scarcity of natural resources like oil, water, food, and minerals a concern. The scarcity has an effect on commercial activity as the 21st century progresses (Bell et al., 2012). Managers need to consider the shortage of resources as a critical supply chain risk issue for the future. The growth in per capita income and increase purchasing power will continue to spear direct pressure on limited resources. This type of growth if not managed, will affect demand and supply imbalance that leads to disruptions. Ghana seems to experience growth challenges because resources are not adequate to support the growth.

Ghanaian businesses operating in the international markets face challenges from competition, efficiency, cost and consumer demand (Cruz, 2013). Some companies try unsuccessfully to build different supply chain models to satisfy the changing needs of the customer in the international market (Anurag, Chang, & Tiwari, 2012). Supply chain

managers in Ghana struggle to manage global suppliers and subcontractors to ensure the delivery of cost-effective, high-quality products and services (Chaudhuri et al., 2013).

The inability of managers to effectively deal with the problems associated with the complexities of global business makes Ghanaian companies unattractive. Managers struggle to deal with disruptions that cross national boundaries like natural disasters, political unrest, and poor economic conditions (Olatunde, Chan, & Wang, 2012).

Strategies to Improve disruptions in the Supply Chain in Ghana

Disruptions to the supply chain have not been entirely resolved (Zander, Zetting, & Makela, 2013). At a minimum, stakeholders have tried to minimize the effect of supply chain disruptions by training managers and other partners on how to minimize disruptions. Industry experts have come up with innovative trends like decentralization, globalization, just-in-time processes, collaborative transportation management and outsourcing to improve the efficiency of the supply chain (Abhijeet et al., 2013; Jing & Chan, 2012; Mizgier, Juttner, & Wagner, 2013). Knudsen (2012) deliberated on how to improve the supply chain while integrating new discoveries that improved the efficiency of the system. For these trends to be productive, a link must exist between business strategy, values, and culture of the organization (Muller, Vermeulen, & Glasbergen, 2011). The professionals in Ghana, who understand and can apply the link between strategy and values at one end of the supply chain to the other end will be successful. To prevent disruptions in the value chain and improve supply chain performance especially in Ghana, every member of the supply chain must work as a team and in unison (Liu & Xie, 2013). As applied to this study, the general systems theory allowed me to explore

perceptions of supply chain leaders in Ghana and how to address the specific business problem of inadequate skilled professional to manage the supply chain effectively to prevent disruptions. The improved efficiency in the supply chain has increased earnings from oil and gas exports and has generated better levels of economic growth in Ghana (Baba, 2012)

Organizations have opportunities to learn more about the environment and develop creative solutions to old and new problems (Zander et al., 2013). Managers had to build the human and technological capability to predict the potential occurrence or to mitigate the effect of disruptions when they occur (Bello & Bovell, 2012). Colicchia and Strozzi (2012) suggested a systematic approach by firms to determine the procedure for recognizing supply chains risk with the view that the external environment had an influence on the supply chain. Abhijeet et al. (2013) used mathematical modeling and simulation adopted in combination with systems thinking dynamics to study the various risk issues holistically in the supply chain network. Abhijeet et al.'s approach should be used in Ghana to identify the potential risk areas of the supply chain. In the area of production of goods and services, the technological advancement will affect raw materials, production process, packaging, and labeling to create efficiencies in the system. Other areas that technology affects include marketing, brand improvement, transportation, and delivery to the final consumer including after sales and service. An example of a proven system that may work in Ghana is what Toyota and Ohno, developed as the just-in-time (JIT) manufacturing processes at Toyota (Wantuck, 1989).

The invention was due to a limited supply of land and natural resources for manufacturing. Toyota Motor Company made improvements on Ford's concept by identifying problems early in the production process and fixing them. Toyota involved employees in determining the quality issues and made the problem a priority and fix them before the production process continued. Ghanaian managers should learn and adopt the Toyota concept to help identify and fix manufacturing problems early in the production process, so the problem does not grow into more complex disruptions later in the production process. The key to preventing disruptions was to understand the processes in the supply chain and to identify problems in the external environment which could disrupt the smooth flow in the supply chain. Adequate measures should be in place to prevent or limit any possible problems.

Lean production methods have reduced disruptions in the supply chain, and Ghanaian managers should adopt lean processes in manufacturing. The effective application of lean strategies will reduce the effect of a disruption in the supply chain and increase operational efficiency (Hajdul & Mindur, 2015). The goal of lean production processes in the supply chain is to ensure the maximum production of value at a lower cost than competitors. Lean production is cutting down on any unnecessary processes in the value chain and reduction of waste through efficient manufacturing and delivery of superior products and services (Rutz, Nelakanti, & Rahman, 2012). The firm that can efficiently execute lean production will reduce cost and increase profits. Walmart, for example, has perfected lean production with the use of technology. Walmart has built their supply chain by managing most products they sell right from the initial production

process to suppliers till the products get to the shelf on the sales floor. The managers have cut out any unnecessary process in the value chain that will increase the cost of production. When a company is efficient, with the structures working according to plan, the efficiency reduces the cost of production and results in higher profits for the organization. The company will have excess capital to fulfill the corporate social responsibility such as developing infrastructure that positively enhances the socio-economic development of the people. A good example that managers in Ghana should learn and to ensure efficiency in the supply chain.

Experts have promoted the usefulness of cooperation in the manufacturing environment in managing supply risk and disruptions. Kim, Cavusgil, and Cavusgil (2013) explained the need for firms to work with intermediaries to help create value for the customer. Kim et al. indicated that the competitive marketplace had become complicated for an individual firm to deal with supply chain risks. In Ghana, the method for the evaluation and selection of suppliers in a pharmaceutical manufacturing company is analytic hierarchy process. This process is used to select the most appropriate raw material providers of the artemether-lumefantrine antimalarial drug for application within various organizations (Annan et al., 2012). Ghanaian managers need to learn how to implement cost-effective cooperative approaches for proactively managing any form of disruptions and at the same time maintaining supply network stability and efficiency (Bello & Bovell, 2012). Leaders have to build institutional capacity about the internal and external influences in the supply chain to deal effectively with the deficit. Oguz and Cory (2013) suggested that leaders need to integrate sustainable cooperation as a strategic part

of their core business initiative to fall within their supply chains. Core business functions as procurement, logistics, production and knowledge management must be part of boardroom decision-making processes. Kassam and Brammer (2012) expressed the need to replace tradition production and distribution methods with well-coordinated and planned approaches to firms, retailers, distributors and customers. An example is a coordination between smallholder farmers in Nigeria that added value to the agricultural sector (Kassam & Brammer, 2012). The coordinators managed the internal and external influences that helped to generate employment for the citizens and increase the income level for farmers and others workers in the supply chain.

Managers frequently build different supply chain models to satisfy the changing needs of the customer (Anurag et al., 2012). The models are designed to be dynamic in a way that could always adjust to fit the needs of the customer. Employing strategy models in Ghanaian businesses will help in policy generation to guide the industry (Loosemore & Chandra, 2012). The goal is to increase efficiency with the help of technology to contribute to new attitudes to disruptions in the supply of goods and services (Li & Chan, 2012). The managers who find the solutions to the disruptions will make their businesses more resilient to enhance the company's competitive advantage and increase returns on investment (Pettit et al., 2013). The successful models reinforce efficiency in the value chain and between the stockholders, supply chain and the external environment.

The smooth operations of a modern business are uncertain to the extent that supply chain assessment is necessary to every business process (Clark, 2012). Managers are taking measures and adopting new methods to improve fundamental areas of the

supply chain to reduce uncertainties (Clark, 2012; Pettit et al., 2013). Other managers are investing in skills training to identify and implement best practices in the supply chain (Hollstein & Himpel, 2013). Managers in Ghana can reduce the uncertainty by incorporating supply chain strategies into the supply chain system (Simangunsong et al., 2012). These strategies work to reduce the risk and stabilize the supply chain for the smooth flow of goods and services from the manufacturer to the final consumer. Managers need to understand the relationship between all the parts of the supply chain and any other subsystems and their external influence for any supply chain assessment to be successful.

In a continuously changing business environment, supply chain managers find it difficult to identify the risk in a system because the risk is in every activity within the system (Wagner & Neshat, 2012). As companies expand and supply chain processes grow bigger, the potential for risk increases in the supply chain. The result is an increase in the vulnerability of the supply chain system. The increased system disruptions of the supply chain can interrupt the functionality of the entire supply chain (Omar, Davis-Sramek, Myers, & Mentzer, 2012). In a situation of this nature, the use of a reliable supplier can help improve the reliability of the system. Managers in Ghana should be trained to have a risk management vision, and that will be exemplary throughout the company (Wagner & Neshat, 2012). The risk management concept involves the communicating of awareness of the supply chain to all employees of the company. Partners who share information about their risk management strategy are likely to experience growth, increased financial performance and profitability (Schloetzer, 2012).

A vision that should be taken seriously and executed at all levels of the organization to attain the desired results in Ghanaian companies as well.

Supply chain resilience is another way managers in Ghana can solve the problems of disruption. Supply chain resilience is the ability to withstand a supply chain shock and recover very quickly (Cabral et al., 2012). The concept of resilience focuses on aspects of science, psychology, systems engineering, and business management. Although resilience strategies come with a cost to the company, a poor strategy is for a disruption to prolong for a long time. Cai, Goh, de Souza and Li (2013) posited that sharing information about resilience strategies with the supply chain managers is necessary to improve supply chain performance. However, Jayaram and Pathak (2013) added that conditions have to be right for information sharing and integrating resilience strategies among supply chain managers to be effective. Managers in Ghana have to be adequately trained to identify the right balance of programs in the strategic plan to solve disruptions (Wieland & Wallenburg, 2012). The strategic plans have to show a positive return on investment in the form of customer satisfaction or financial returns. The application and implementation of the correct resilience strategies will lead to improved performance in the supply chain (Wieland & Wallenburg, 2012). Khorramshahgol (2012) advised the use of trained personnel to manage the entire supply chain to the point that the product gets to the final consumer without a disruption. In effect, a well-trained supply chain manager will contribute to the reduction of disruption in the supply chain in Ghana by applying the idea behind the systems theory. The effective application will ensure the supply chain is in equilibrium with all parts of the system and the external environment.

Impact of Information Technology on Supply Chains

Some professionals in the supply chain have argued that the rapid and progressive development of supply chain is because of the effects of IT. Managers in companies usually invest in IT to reduce the exposure to risk and to reduce disruptions (Tang & Zimmerman, 2013). The pace of supply chain improvement is largely because of the introduction of IT, which has played a significant role in simplifying operational processes. Li-xia et al. (2014) suggested that the development gained significance since the early 1980s with enterprise technology management, information technology, and e-business growth. However, with the introduction of IT which is the hardware, software, and communications equipment, several changes and improvements have occurred (Laudon & Laudon, 2012).

Information technology is very important because of the efficiencies it can help introduce in businesses to enhance organizational performance and increase profits. Information technology is also used by managers to achieve sustainability and competitive advantage over competitors in Western countries (Drnevich & Croson, 2013). In Ghana, supply chain managers have begun competing against each other by building brand equity, loyalty, and recognition with the help of IT (Kim, Cavusgil, & Cavusgil, 2013). The competition is good because the managers are working to make the customer happy and to increase market share. Improvement in modern technology in Ghana will transform how organizations operate business in the supply chain industry (Lee, Kelley, Lee, & Lee, 2012). Ghanaian business leaders have to welcome the benefits that technological advancements bring to business success.

The emerging link between supply chain management and technology has gained recognition. The recognition is because of the quick response to market demand, the coordination of cooperatives and the focus on customer satisfaction (Li-xia et al., 2014). In the supply chain, co-ordination of the system deals with at least two processes that could be business and information related (Ivanov & Sokolov, 2013). Every part of the supply chain should focus efficiently in-house to affect the system. The complexities of integration of new technologies into standardized business should help improve the supply (Devos, Hendrik, & Deschoolmeester, 2012). Organizations in Ghana need to see IT as a tool for building and maintaining a competitive advantage in every aspect of the supply chain. Managers have to invest in IT infrastructure to help reduce the impact of disruptions (Omar et al., 2012). Walmart and Cosco have done this very well and have benefitted from the investment so should the Ghanaian government and private businesses. Ghanaian businesses have to build efficiency and reliability indicators in the supply chain to drive corporate strategies for success (Tabor, 2012).

Organizations have made significant investments in supply chain technology and have experienced improvement in their bottom-line. Companies like Walmart have invested in IT to develop a sophisticated and highly automated logistics distribution system, which helps to share information and efficient distribution across all channels (Li-xia et al., 2014). Walmart has the IT systems designed to be collaborative and deliver feedback mechanisms for improved decisions making which affects business performance. A mechanism that gives Walmart the opportunity to collect valuable data and to learn from past experiences. Ghanaian businesses will rip huge returns if they

invest in technologies like Walmart has done. The ability of Walmart to select their suppliers is unique because the selection of vendors can be risky since most firms hire suppliers with the lowest bid (Tang & Zimmerman, 2013). The supplier with the lowest bid might not provide the best service or avoid a supply chain disruption. The acceleration of Ghanaian business will need adaptive methods to provide support to deliver products of quality (Aubry, Sicotte, Drouin, Vidot-Delerue, & Besner, 2012). Taticchi, Cagnazzo, Beach, and Barber (2012) posited that managers have to be flexible and innovative to achieve results.

Ardichvili et al. (2012) examined the policy and the direction that business leaders are taking in Brazil, Russia, India, and China. The projection is that by 2050, these four countries will be the leading economies in the world. Information technology is helping drive these economies in many ways. The effect is evident in manufacturing to agriculture and improvements in the service industry. Information technology has given opportunities to countries to compete effectively across continents with little difficulty. Loosemore and Chandra (2012) added that the addition of IT in supply chain management has helped develop strategy models that enhance productivity and reduces disruptions. Managers in Ghana need to appreciate the power of IT and the benefit of creating innovation for product and service differentiation (Bendoly, Bharadwaj, & Bharadwaj, 2012).

The IT investment within the value chain focuses on how integration systems facilitate an optimum flow from process to process (Kim et al., 2013; Tallon, 2011). The integration brings value to business delivery to make the customer happy. A well-

coordinated integration and collaboration of supply chain reduces uncertainty and leads to better performance across various supply chain (Denese, 2011). Speed becomes a critical factor in the dynamics. The rate and accuracy of information flow provide a competitive advantage of one firm over other companies. Information flow ensures that (a) there is a faster response to competitor initiatives, (b) there is a better understanding of customer needs, and (c) there is more creativity in new product development (Li & Lui, 2011).

The speed of information and products to market is necessary for building a competitive advantage (Porter, 1998). An important element to help supply chain achieve a competitive advantage with speed is the collaboration with IT (Richey, Adams, & Dalela, 2012). The speed of information and collaboration helps companies to make timely business decisions. Applications of machine learning and artificial intelligence permit more organizations to compile data for just-in-time decision-making (Rutz, et al., 2012). In the past, offering lower prices was attractive; but, that strategy is no longer the preferred way to attract new customers, and Ghanaian businesses need to realize that and change with the help of IT.

Tallon (2011) indicated the importance of aligning IT with business strategy and how that creates value and influences profitability. An alignment of IT with business strategy should help a company build a sustainable competitive advantage. Li-xia et al. (2014) traced the development from the global change of economic environment and the application of IT to make the supply chain pivotal in the information age. The goal is to ensure that both enterprises and academia recognize the usefulness in managing supply

chain activities and to use IT service to improve Ghana's supply chain problems. In some situations, investments in IT can help companies recover very quickly after a disruption especially in cases where significant data is off-site in the event of an interruption.

Culture, Ethics, and Negotiation

Culture is unique to every society and is either national or ethnic respects.

Culture is a belief system that a group of like-minded individuals practice, and where one understands and applies knowledge to learning the social environment in which this group of people live (Cleveland, Erdoğan, Arıkan, & Poyraz, 2011). In Ghana, culture plays a significant role in the social, economic and political life of Ghanaians. In business, for example, the Ghanaian culture allows room for bargaining for products and services which is different from many western nations. Business meetings are usually a laid back event and mostly not very formal. The cultural attitude could affect the supply chain in a very fast business environment. The culture in Ghana can be quite challenging for foreigners. The difficulty is how to determine the extent to which culture affects supply chain (Mudrack & Mason, 2013). The concepts of right, wrong, moral, virtues, and justice are significant and fundamental when speaking of the culture of a group of people (Mudrack & Mason, 2013).

The culture of a country or a people of a geographic area affect the negotiations styles of the people. Negotiations are a complex, and necessary decision-making process (Hindriks & Jonker, 2012), and very few people have the skills to negotiate across different cultures with ease. In Ghana, unlike the United States, it is common to discuss other issues about family and life in general before going to talk about the business of the

day. The culture of talking about family and lifestyle issues before a business meeting starts is to help build rapport and a level of comfort with the other party before any serious business begins. It is important to the Ghanaian in a business relationship to know the business partner or the negotiating partner beyond the business environment. The Ghanaian will most likely do business with someone they can relate to on different social issues than someone who is only interested in the business aspect of the partnership.

With the interest of the Ghanaian business partner in mind, managers will have to decide to uphold their business dealings or conform to cultural norms. The reason is that managers from outside Ghana might not be successful when they stick to their way of doing business and neglecting the interest of other partners. Lucke et al. (2014) believed that interrelated networks that involve culture and cultural capabilities can help organizations understand the role of global managers and their proficiencies in handling difficult tasks. With this development in mind, Ghanaian companies can become increasingly responsible for the behavior of their managers and suppliers (Blome & Paulraj, 2013). Leaders must take up the challenge of developing strategies that will include their partners in a united effort to overcome cultural issues in the supply chain (Gimenez & Sierra, 2013). Ghanaian companies will benefit from similar arrangements and managers can learn best practices that can help transform the business. The opportunity is that the right organizational culture in Ghana can affect business success. Leaders need to focus on the success of the business and less of any cultural interruptions unknown to foreign business partners.

A new form of culture developing in the supply chain circles is creating sustainability initiatives. The supply chain can be sustainable if shared knowledge of participants is on satisfying the customer (Sams, 2011). Allen, Walker, and Brady (2012) asserted that multinational organizations that manage their supply chain are increasingly building collaborative sustainability initiatives within their supply chain. The growing importance of sustainability has made managers aware when making core business and operational decisions (Cronin, Smith, Gleim, Ramirez, & Martinez, 2011). Organizations like; Walmart, Nike, Unilever, and Procter & Gamble have focused attention on this new cultural trend by linking suppliers and buyers on sustainability efforts (Allen, Walker, & Brady, 2012). When these partnerships work efficiently, sustainable supply chain contributes positively to the reputation of the organization as a good citizen (Wolf, 2014). An important lesson for Ghanaian companies to implement to provide a coordinated effort to link suppliers with sustainability efforts that improve business efficiency. The efficiency leads to profitable business because the community can reward business by patronizing their goods because of the effort to protect the environment with the sustainability initiatives.

Multicultural experience is a determinant of the success and creativity levels of the group (Silva, Campbell, & Wright, 2012; Tadmor, Satterstrom, Jang, & Polzer, 2012). There is little documentation about the prescriptive challenges of multinational companies during negotiations. Duff, Tahbaz, & Chan (2012) investigated how the interactions of various personality types and their cultural background influence negotiations processes to determine the best supply chains system to operate with other

parties. Duff et al. (2012) posited that conflicts occur in many negotiations because of the difference in interest and business culture. A very present possibility in Ghana. What will work best are negotiators who can bridge the cultural differences and have a broad knowledge of supply chain system. Although not a guarantee there will not be any issues; but, is better to have personnel who have a broad understanding of the process and how transitions and negotiations should work. Time, money and resource are needed to reverse damages if any because cultural differences can create feelings of amazement, embarrassment, and confusion (Tan, 2012). Richards and Bilgin (2012) posited that diverse project teams would lead to dynamic work environments that enable cross-synthesis of cultures, values, and work ethics that are good for an international organization. The diversity brings richness and inclusiveness for workers in the organization.

For Ghanaian companies to improve, supply chain managers should cultivate and develop a new and unique image and have a deliberate sense of openness and opportunity for all people irrespective of where they come from or how they look. Focus should be on whom the best person is to do the job based on qualification. Customers develop strong associations to the brand they admire, and favorable attitudes can translate into brand equity and profits (Kim et al., 2013). As supply chain develops into national and international operations, globalization will call for better understanding of how to harness the synergy that comes from effective cross-cultural management (Duff, Tahbaz, & Chan, 2012). Without the knowledge and coordinated efforts of all parties in the operation in

Ghana, there will not be an easy undertaking. The result will be a glitch in the system that will lead to a disruption.

The need for Ghanaian supply chain to run efficiently across multicultural and multinational boundaries is essential. Managers must develop a mutual understanding between all the parties involved for businesses to be successful. Each party's interest has to be evaluated and respected to receive their approval. In many instances, negotiations have to take place because negotiations are an important part of any business activity irrespective of the cultural diversity of people involved. The style of negotiation in multinational settings can be different. The Germans, for example, want to know what the price of the product is while Africans, for the most part, want to leave some room for bargaining. If negotiators are not aware of the difference, the negotiations between the Germans and Africans might not go very well. Cultural differences can exist based on differing values even within the same cultural group (Chang, 2012). Farazmand, Tu, and Danaeefard (2012) concluded that cultural differences are less likely to exist between countries sharing the same supply chain if their culture and religion are the same. All parties involved must see the common vision although there is a possibility of different ideologies.

Crotty and Brett (2012) added that a multicultural workplace or partnership facilitates creativity and teamwork. The challenges in Ghanaian businesses increase with the disparity of cultural practices among the individuals participating in a negotiation. The difference encourages the need to have a functional system that works. The human mind is equipped partially for the task of negotiation (Hindricks & Junker, 2012). For the

supply chain to work effectively across cultural and national boundaries, those negotiating must develop skills sets to manage the difficulties that will, in turn, reduce or prevent disruptions in the supply chain. All negotiators have the responsibility of learning about the other participants' culture and assist with understanding, negotiations, and conflict resolution (Silva et al., 2012). The best way that harmony can exist for the benefit of building an efficient supply chain system that can function effectively in different cultures is to reduce disruptions. Tadmor et al. (2012) concluded that multicultural teams are likely to be less productive because of communication barriers. Tadmor et al. also noted that multicultural groups had a good chance of poor team cohesion because of the communication issues which is also an issue of culture.

Negotiation styles cannot be the same everywhere, especially when cultures, personalities, and business outcomes are in the mix. The focus of negotiators in Ghana is to have a clear idea of what the goal of the negotiation is and what objectives need to be achieved to arrive at the goal. Every negotiator needs to understand the cultural differences and practices of all negotiators (Farazmand, Tu, & Danaeefard, 2012). Even when negotiators understand cultural differences, conflict is often still a necessary part of the negotiation. The most important skill is how a negotiator manages differences to achieve their goals and supply chain suffers minimal disruptions.

Effect of Employee Skills and Motivation on the Supply Chain

Individuals, companies, and multinational organizations work to perfect the supply chain of their respective institutions, and the goal to satisfy the final consumer. If the final consumer is no longer a part of the mix, there will probably not be a need for the

investments and innovations required to improve the supply chain. Oguz and Cory (2013) indicated that continued pressure from governments, employees, customers and shareholders over the years had prompted organizations to take notice. The goal is to develop strategic plans to solve the environmental and social implications of supply chains. These stakeholders have an interest in the effectiveness of supply chains and focus on the satisfaction of the final consumer, who is the final arbiter in this strategic relationship. Lohle and Terrell (2014) posited that firms should move businesses where the required skills are available at a lower cost. The lower cost will translate to lower prices that will benefit the customer.

The skills of professionals in the supply chain in developing countries like Ghana require particular attention and focus on developing the capacity of supply chain professionals for the supply chain to be effective. What is important is to identify patterns and changes in how workers measure their skills. What is important is for companies to give periodic surveys to employees (Sugheir, Coco, & Kaupins, 2011). The survey is in line with keeping and making sure that the skills and competence of workers in the supply chain are updated to ensure efficiency. Russ (2009) agreed that scholars, academics, and practitioners understand the relationship between the effectiveness of business and the competence of employees. The performance of the various supply chain functions should communicate what leads to disruptions in the supply chain. Kelliher, Harrington, and Galavan (2010) advocated the need for collaboration between business and academia in skills development to help employees apply the knowledge acquired in the company environment.

The leadership in the supply chain industry needs to drive effective skill training in the supply chain across the industry (Nixon, Harrington, & Parker, 2012). That will be useful in reducing the gap between the growing need for qualified employees by businesses and the quality of students that educators are producing. Managers in Ghana need to plan and initiate innovative training programs that align with the strategy of the companies (Hutchins & Muller, 2012). When managers execute plans efficiently, will reduce supply chain disruptions. Ghanaian companies need to invest in and train cooperative managers to garner more participation across the supply chain (Aritz & Walker, 2014).

For developing economies like Ghana, and for most African and East Asian countries, building competence is important. Competence is an essential ingredient for efficient management of the supply chain and the way to reduce disruptions. The leaders that understand the link between businesses and develop a strategy to manage the links will yield results. Siu, Hung, Lam, & Cheng, (2013) suggested in a study of people with chronic disease in the workplace were highly satisfied with their jobs if they had high self-efficacy from training. The leaders have to take measures to keep employees to have a positive effect. Kochanowski (2011) indicated that employee turnover creates problems for the smooth growth of any organization. While Malik and Usman, (2011) stated that if a company loses employees often, it increases their retention cost and decreases the level of productivity because business processes and supply chain changes hands regularly. Most organizations handle the problems of employee retention differently. Galletta, Portoghese, and Battistelli (2011) asserted that employee turnover sets back current

employee motivation. An increase in turnover will lead to a reduction in the size of the organization and subsequent negative effect on productivity (Ballinger, Craig, Cross, & Gray, 2011). James and Mathew (2012) suggested that employee turnover could affect productivity and sustainability of the organization. The frequent turnover is not a good sign to other employees because they might perceive that organization to be weak and unable to keep employees.

Whether a turnover is voluntary or not, the effect is an increase in the replacement, recruitment, and training costs (Ratna & Chawla, 2012). What is important is establishing the motivation level of the professionals who have the responsibility of ensuring that supply chain run efficiently in reducing disruptions in the supply chain. If employees are engaged and empowered to be innovative in supply chain management, that will lead to employee retention. The role of supply chain managers in building a conducive working environment is essential to the success of the organization (Gayathri, Sivaraman, & Kamalambal, 2012). Some factors help increase or decrease the performance of employees (Remi, Abdul-Azeez, & Toyosi, 2011). What is hard to tell is what motivates one employee from the other; but, motivation plays a significant role in positively impacting employee performance and Ghanaian companies need to adopt strategies that will help motivate employees in the workplace.

With the increase of small and midsize enterprises, multinational companies have asked for the same standards of operations through focusing on the Business for Social Compliance Initiative (BSCI). The initiative will help to bring all businesses to do more to support fairness in labor negotiation and working conditions for workers. For example,

when employees think they are making less than they are worth, turnover rises (Garcia-Serrano, 2011). According to Kavitha, Geetha, and Arunachalam (2011), communication, training, job satisfaction, and benefits are important to keep highly qualified supply chain professionals.

Employee motivation to work harder depends on whether the employees believe the pay from working is equal to their contemporaries performing the same job (Stringer, Didham, & Theivananthampillai, 2011). In the Ghanaian context, if worker's remuneration is decent, the workers desire to work efficiently will be high. As a result, less disruption occurs in the supply chains, and employee motivation will be low if employee remuneration is not adequate. Unmotivated members of the team usually will not support the efforts of the team and leadership has the responsibility to enhance motivation. The decisive role of leadership is a possible way to provide a solution to disruptions in supply chains.

With the improvement in the international markets, supply chain managers are increasingly facing the pressure of private regulation initiatives (Knudsen, 2012). The actions include supplier codes of conduct to ensure that companies tackle the issue of poor working conditions in many factories (Knudsen, 2012). The collaboration of organizations with suppliers in improving working conditions and increasing supplier assessments has improved their corporate social responsibility initiatives (Gimenez, & Tachizawa, 2012).

Summary

The objective of Section 1 was to explore the strategy that leads to reducing disruptions in the supply chain of many businesses and developing economies like Ghana. To review the literature, I looked at the background and different perspectives and discussions of the events that have affected the supply chain. In section 2, I will document the basis and reason for using a qualitative multiple case study to explore the experiences of supply chain professionals in Ghana. The experience of the supply chain professional and analysis of information from the interviews will help document possible strategies that will contribute to eliminating the disruption in the supply chain. In Section 3, I will present the findings of my interview and analyses and how the application of my finding will have an effect on business, social change, and professional practice. I will end with recommendations for future action and future research, reflections and conclusion.

Section 2: The Project

This qualitative multiple case study was to explore strategies that help reduce disruptions in the supply chain. Supply chain network disruptions have the potential to cause negative financial and economic consequences for businesses (Bello & Bovell, 2012). My goal was to interview professionals in the supply chain at the management level who have experience in supply chain management daily. These managers have demonstrated success in supply chain management by having fewer than five supply chain disruptions in the past year. This section is an explanation of the steps I took to conduct a qualitative case study with the goal of getting results from the research. I explained the main idea of data collection, sampling methodologies, data collection techniques and instruments, data organization, and addressed the validity and reliability of the research study.

Purpose Statement

The purpose of this qualitative multiple case study was to explore strategies that managers use for minimizing supply chain disruptions. The research population consisted of supply chain managers from at least three fast moving consumable (FMC) companies in Accra-Ghana. These participants have demonstrated success in supply chain management by having fewer than five supply chain disruptions in the past year. The data and information from this study contributed to the application of new knowledge in supply chain management. The new knowledge helped companies reduce disruptions and increase efficiency, which may lead to profits and growth for businesses. The increased efficiency would attract more investment capital for business expansion and job creation.

The creation of better-paying jobs would lead to a rise in personal income for the citizens. The increased income will help to provide a better standard of living for the residents of Accra.

Role of the Researcher

My role as the researcher was to select the best methodology, design, participants and analyze the data I collected from the participants. As a qualitative researcher, I used semistructured interview questions to gather data. I designed the study according to Walden University's Institutional Review Board (IRB) regulations. I sought permission and obtained approval from the IRB before implementing the research plan. My knowledge and experience of working in supply chain operations for a few years were silent so I did not influence the research participants (Bernard, 2013). My practical experience in supervising processes and making decisions in the supply chain did not feature in the interview so that fully captured the voice of the interviewees. My interests in supply chain management did not lead to any bias in the outcome of the study because I did not share my knowledge of the concepts and strategies to reduce the impact of supply chain disruptions because my knowledge could influence the opinions of participants.

I was ethical to protect the rights of participants (Mikesell, Bromley, & Khodyakov, 2013). The research plan included maintaining ethical standards like asking for participant's consent before conducting the interview, anonymity, and confidentiality of participants during the research process. I followed the guidelines of the Belmont Report (National Commission for the Protection of Human Subjects of Biomedical and

Behavioral Research, 1979). Sieber (1992) suggested that organizations in research needed to have the assurance of a reliable study. I followed the rules of ethical research as proposed in the Belmont Report (1979).

As researcher, I was a human instrument and acquired the skills to conduct the research. My role was significant in directing and facilitating participants of the research study to share their experiences about a phenomenon (Wahyuni, 2012). The questions to participants (Appendix A) was the same and in the same order, and open-ended to ensure clarity, consistency, and reduced bias. I was consciously a blank slate and rigidly followed the interview protocol (Appendix B) to help avoid influencing participants and to avoid bias. The rationale for using an interview protocol was for consistency and for the ability to stay within the bounds of the designed research interview process as Yin (2014) posited.

Participants

The decision regarding the choice of research participants was essential to this qualitative study. Eligible participants of a research study should have varied experiences and in-depth knowledge of the research topic (Rowley, 2012). The research population consisted of supply chain managers from three fast moving consumable (FMC) companies in Accra- Ghana. These participants have demonstrated success in supply chain management by having fewer than five supply chain disruptions in the past year. The managers had supervisory, and decision-making authority within the supply chain of the company.

I gained access to participants by inviting the supply chain managers for the interview via a face-to-face request after I did a thorough research of the target businesses and obtained approval of the Human Resources Department and collected a letter of cooperation from the company. I established a working relationship with the participants by reassuring them of the rules that governed the confidentiality of the study (Marshall & Rossman, 2011). I built trust and assured the participants of the confidentiality and anonymity of the study. Rubin and Rubin (2012) suggested that building trust with the participants would help build rapport and encourage participants to complete the study. Siu et al. (2013) advocated maintaining a working relationship with participants before, during, and after the interview.

An e-mail confirmation followed before the data collection process begun. Participation was voluntary, and the participants were free to withdraw from the interview at any time even after the interview. Yin (2014) posited that research participants must be willing and able to participate in the research study.

Research Method and Design

Research Method

The most widely used methods for research are qualitative or quantitative methods, although there was a mixed method of study that is a combination of a qualitative and quantitative study. I used a qualitative research method to answer the central research question as advocated by Sinkovics and Alfoldi (2012). Qualitative researchers combine observation, documentation, and interviews to collect data (Moustakas, 1994). The research questions for qualitative researchers start with what or

how to understand a phenomenon under study (Yin, 2014). Experts have argued that qualitative research methods were more useful for research that focuses on human and organizational thought process and considers the uniqueness of the human experiences (Stake, 2010). A qualitative study was best for this research.

Brannen and Moss (2012) asserted that mixed method was suitable for researchers who were looking for an in- depth understanding of a phenomenon from a statistical perspective. While Rowley (2012) stated that mixed methods were useful for understanding the benefit of qualitative and quantitative research methods. A mixed methodology was not appropriate for this research because the research question was answered using a single research method and will not need any statistical analysis. Also, because the research study did not require any quantitative data, a mixed methodology was not best of the research (Yin, 2012). I explored the strategies that reduce or eliminate supply chain disruptions. A quantitative methodology did not work for this study because I was not seeking to establish variables for hypothesis testing (Wieland & Wallenburg, 2012). This research was not a deductive research (Borgstrom, 2012), neither did I use measurement strategies to develop and arrive at conclusions based on cause and effect analyses (Bernard, 2013).

Research Design

The case study research design was useful to explore the strategies that help to minimize supply chain disruptions. The four qualitative designs are case study, ethnography, narrative research, and phenomenology (Bernard, 2013). A case study is an empirical inquiry that investigates the tangible context in which a contemporary

phenomenon occurs (Yin, 2012); therefore, a case study design was appropriate for this study. Case studies are beneficial when answering how or why questions about events over which the researcher has little or no control (Yin, 2014). I collected interview data by interviewing participants who shared experiences in minimizing disruptions in the supply chain. I identified the strategies that companies use to reduce disruptions in the supply chain.

I considered other designs such as ethnography, narrative research, and phenomenological research. Ethnography is a research strategy that researchers use to study a group of people in a natural setting over an extended period by gathering data through interviews, observations and cultural influence (Kriyantono, 2012). The study did not align to ethnography because ethnography includes lengthy observations within the environment in which the research is taking place (Aldiabat & Navenec, 2011). Ethnographic design was not appropriate for this study because ethnography will not consider factors outside cultural behaviors and the observation of an entire system is not possible for this research. Narrative research was not appropriate because the purpose of the study was not examining the life experience of a single individual or storytelling experiences of individuals (Safari & Thilenius, 2013). Tufford and Newman (2012) asserted that the goal of the phenomenological research is to understand the meaning of lived experiences of individuals. Although phenomenological studies look at unique phenomena, phenomenological research was not appropriate for the study because I did not describe and interpret the reactions of participants from personal perspectives (Marshall & Rossman, 2011).

Population and Sampling

An important aspect of any research is the sample selection process and strategy (Carenza, 2011). Marshall and Rossman (2011) suggested the use of a sampling method that was convenient and participants were available. The population for this multiple case study involved managers who influence the implementation of any part of the supply chain. The research population consisted of supply chain managers from three FMC companies in Accra-Ghana. These participants demonstrated success in supply chain management by having fewer than five supply chain disruptions in the past year. I accessed the contact information for all participants on their respective company website or a personal visit to the company to collect their contacts and email addresses.

The sample size for the study was four managers each from three FMC organizations in Accra Ghana. The sampling design for the study was purposeful sampling. A purposeful sampling design gives the opportunity for researchers to select participants that fit the objectives of the study (Yin, 2012). Olsen, Orr, Bell, and Stuart (2013) recommended using a purposive sample for participants in a qualitative study. A purposeful sampling ensures that the survey population provides the required detail for the study to be successful (Suri, 2011). Suri (2011) believed the purposeful selection of participants should align with the central research question. Yin (2012) posited that a purposeful sampling method would help the researcher to collect valuable information from the sample population to addresses the research question. Purposeful sampling methods helped me to target the qualified participants for the study (Suri, 2011).

Four participants from each company can produce valuable information that is adequate for the study without a large sample size (Yin, 2014). Marshall, Cardon, Poddar, and Fontenot (2013) advised the selection of an appropriate sample size for the research to be reliable and credible. Yin (2014) suggested a sample size of at most five interviews for each case study. I interviewed 12 participants and attained data saturation with the help of member checking. Interviewing continued until no new data or information emerged (Marshall et al., 2013). Yin advocated that case studies give researchers the flexibility and opportunities in the interview process to achieve saturation through in-depth interviews.

The prospective participants received invitations in person or by recruitment emails explaining the purpose, criteria, and data collection process of the research. The participants who agree to participate in the study signed an informed consent form (Appendix C). The consent forms had a detailed explanation of how the research proceeded, and how data collection was done at no risk to participants.

Ethical Research

Ethical research is important for any reliable study. Researchers have an obligation to prove that their research was trustworthy, credible, and the method they used in the research matches the study (Bulpitt & Martin, 2010). Walden University has procedures designed to meet the required expectation and to address ethical concerns. I submitted to the IRB for review and approval of the proposed study and a consent form (Appendix C) for all participants. The consent form is an agreement indicating that I will take precautions to prevent any risk to participants in the study (Moustakas, 1994). I

obtained a letter of cooperation from the human resource department of the companies that were involved in the research.

Participants received a signed confidentiality agreement (Appendix D) addressing any research issues and their legal right to withdrawal from the study at any time by submitting a verbal or written request. Carenza (2011) advocated this approach while Marshall and Rossman (2011) believed that for qualitative research to be ethical, reliable, and trustworthy, it required qualitative researchers. A qualitative researcher was important to establish a high level of confidence and credibility in the research from the perspective of the researcher, participants, and any other person interested or involved in the research. There was no mention of the names of individuals and their organizations in the study.

An integral part of the research process was to have all willing research participants sign the informed consent form (Appendix C) that explained the participant's indication and willingness to be part of the research. I did not offer any compensation to the participants. No participant withdrew from the study before or after the research study. To protect the identity of participants and the company, I coded the names of all participants and organizations. Any data collected from the interview was stored in a password-encrypted computer file for 5 years to protect the confidentiality of participants and their organizations.

Data Collection

Instruments

I was the primary data collection instrument and the researcher of this study. In addition, I used semistructured interviews following an interview protocol (Appendix B) and each company's supply chain procedure manuals as my data collection instruments. Moustakas (1994) described a researcher as an integral part of the research process. Pezalla, Pettigrew, and Miller (2012) advocated the use of semistructured face-to-face interviews as the primary method of data collection. Wahyuni (2012) posited that interview was a reliable and trusted way of collecting data because interviews help to explore experiences about a phenomenon. Semistructured interviews are appropriate for a qualitative research method (Diehm & Lupton, 2014).

I began the data collection process by inviting participants to meet at an agreed location that was acceptable to the participants to conduct the interview. I introduced myself and asked the same questions in the same order to every participant. I told the participants to be comfortable and at ease because I was only interested in their opinions. I audio-taped the conversations during the interview and used a Sony tape recorder with an extra battery as a backup and looked for literature on the research question to show the transferability of one study from another.

The face-to-face interview involved asking questions and follow-up questions (Appendix A) to be sure I fully understood what the interviewee wanted to communicate. The participants had the opportunity to explain their understanding of the strategies that could help reduce disruptions in the supply chain. The interview process lasted for about

45 minutes for each participant and strictly followed the interview protocol (Appendix B).

I enhanced the reliability and validity of the data collection instruments by using the process of member checking. Marshall and Rossman (2015) posited that member checking would ensure the transferability of the research. Using member checking improved the reliability and validity of the research study (Moustakas, 1994). The process of member checking included (a) interviewing participants of the research, (b) analysis and synthesis of interview data, (c) validate the synthesized data with each participant, (d) continue interviewing until I achieved data saturation and validation. All interview participants had three days to return the summary. Marshall and Rossman (2015), suggested that member checking was the most valuable way to confirm the credibility of a qualitative research study. The process of member checking was important and helped to synthesize the interview data with the participant and also helped to validate the synthesis.

Data Collection Technique

The data collection technique was the interview of supply chain managers. The research population consisted of supply chain managers from three fast moving consumable companies in Accra- Ghana. These participants have demonstrated success in supply chain management by having fewer than five supply chain disruptions in the past year. Potential participants of the research received a letter in person or by email in the form of an informed consent form (Appendix C) requesting an interview. The letters included the purpose of the study and the minimum requirements that the interview

participants needed to be a part of the research. I conducted the interview at the workplace at a time convenient for the interviewee.

Before the interview began, I collected the signed consent forms and ensured every protocol (Appendix B) was complete before the interview. I informed the interviewee that I would record the interview. The recording device was an ordinary Sony digital voice recorder. Other recording devices like the cell phone, Echo pen, and live scribe pen were options, but the Sony digital recorder was easier for me to transfer and transcribe the information from the digital recorder for analysis compared to other devices.

I had specific questions prepared (see Appendix A), and all questions were open-ended. The open-ended questions allowed participants to speak freely without limits to paint the actual picture of their experiences. The interview began with introductory questions aimed at collecting some information about the background and professional experience of the interviewee. The introductory questions allowed the interviewee and the researcher to build rapport that will helped for a smooth interview (Carenza, 2011). Moustakas (1994) argued that building rapport with interview participants created openness and a willingness to share their experiences. The open-ended interview questions enabled the interviewee to express himself or herself without any limitation and fully explored the central research question. Gullick and West (2012) suggested asking follow-up questions to provide a better and deeper understanding of the responses.

The advantage of using a face-to-face interview was the flexibility and the ability of the interviewer to have control while conducting interviews with the participants

(Mojtahed, Nunes, Martins, & Peng, 2014). I met the participants at their place of work at a time convenient to them. The disadvantage of using the face-to-face interview is that the participant's mood could change during the interviews or because of a question the interviewer asks (Mojtahed et al., 2014). I reduced the possibility of the mood change by strictly following the interview protocol (see Appendix B) as a guide. To protect the identity and anonymity of participants, I labeled each participant as C1 through C12. After each interview, verbatim transcription of interview responses took place, and I thanked each participant for their time and reminded them of the need to contact them for confirmation of my summary of their submissions.

I replayed the recordings and summarized what the participants shared with me. The next step was to contact and give the summary of the interview data to the participants for validation. The participants had three days to return the summary back to me and all of them returned the summary within 3 days. After I received confirmation of my summary from participants, I group the information obtained into themes after listening and comparing the patterns that emerge from the interview. The themes needed to align with the research questions (Rowley, 2012). The process of member checking confirmed my summary and ensured the reliability and validity of the data. I entered the verified interview data into the data organizing software tool, NVivo 10, for data organization and analysis.

Data Organization Technique

The system I used for keeping track of data is recording or documenting each interview, labeling and identifying the interviewees by the time, place, and date of the

interview. I assigned specific alphabetic letters to each participant and labelled them from C1 through C12 to protect the identity of the participant and their organizations. I checked to be sure no personal and identifiable information was visible in the document. I coded, catalogued and analysed the information I gathered from the participants into themes to help with easy understanding and referencing (Bernard, 2013). I used Nvivo 10.0 software to analyze the responses from the participants. I transcribed the answers to the interview questions word-for-word and coded the responses based on the themes.

Bernard (2013) noted that coding and organizing of data were essential parts of qualitative research. I coded the responses into major headings and subheadings. Chang and Jacobs (2012) advised the use of coding interview data to determine themes in a study. I retained a backup copy of the recorded interviews and raw data in a password-encrypted computer file for five years. I will destroy the information by deleting the copies from the computer system and shredding the paper files after five years.

Data Analysis Technique

I used methodological triangulation as the data analysis process for this multiple case study. Data analysis is the logical review of the elements of data which involves data interpretation to determine the meaning of the data (Salajeghe, Nejad, & Soleimani, 2014). Yin (2014) posited that researchers should use corroboratory strategies to triangulate data. I used methodological triangulation to triangulate and corroborate results, using peer-reviewed industry articles about supply chain disruptions, the responses from the interview, and each company's supply chain procedure manuals.

Yin (2012) suggested using multiple data sources to ensure reliability and validity of data. Collecting data from diverse sources facilitates the comprehensive compilation of relevant information for validation of the study findings (Wahyuni, 2012).

The logical and sequential process I used for the data analysis was to prioritize, organize, and analyze interviews. I identified statements in the data and clustered, coded and analyzed the data to look for emerging themes. Sotiriadou, Brouwers, and Tuan-Anh (2014) emphasized the need for accurately analyzing and organizing information into themes after the transcription of the interview data. The themes informed the outcome and common trends in the answers from the interview with the supply chain managers. I played the tape recordings several times to identify specific themes to build a bigger picture of the interview. I looked for relationships between the themes and the literature review to develop codes for further analysis of the information acquired.

I ensured methodological triangulation by using multiple data sources for the analysis to strengthen the study (Yin, 2014). I used peer-reviewed industry articles about supply chain disruptions, each company's supply chain procedure manuals from the participants, and the responses from the interview. I reviewed available company data about strategies that helped to reduce disruptions in the supply chain and compared the responses to the interview questions. Yin (2014) added that using more than one source of data would enhance the depth of study and reduce bias in research. I used member checking and methodological triangulation to ensure creditability, confirmability, and transferability of the study. The process of member checking started with the initial interview. After the interview, I summarized what I believe the interviewer said and

shared a copy of the summary with the participant for validation. The process of member checking continued until no new data emerged and my summary was validated. The saturation point was where no new data or information come from the process of member checking.

I removed irrelevant data at the data reduction stage and imported the data into NVivo 10 software. Yin (2014) recommended the use of NVivo to code and organize qualitative data. The decision to use NVivo 10 was because the capabilities and analytical ability were useful to understand unstructured data (QSR International, 2012). NVivo 10 also helped to connect data that could be missed by other software or if the analysis was manual. No personal knowledge or experience of mine affected the conclusion and recommendation of the analysis. I ensured the outcome of the analysis was consistent with the interview questions underlying the systems theory.

Reliability and Validity

Wahyuni (2012) made the case that the ability to create a reliable and valid strategy was necessary for any research study to be trustworthy. Trotter (2012) noted that when interview questions are the same in the research study, it ensured reliability because the questions would be uniform across the board and not misleading. Ali and Yusof (2011) noted that researchers use qualitative reliability to confirm if the result of a research study was accurate and trustworthy. To determine the reliability of this study, I reported all the findings and procedures accurately and preserved all documents to confirm what I describe was credible, transferable, dependable, and confirmable with no

mistakes (Gibbs, 2007). I was the sole data collector, and I ask each participant the same open-ended interview questions in the same order.

Dependability

Erlingsson and Brysiewicz (2013) suggested that dependability of a research study was about accurately detailing the process for the study to be replicated on a future date and arrive at the same or similar results. Ali and Yusof (2011) asserted that internal reliability was when the instrument of measuring the participants was the same. The research question was not misleading because the questions were the same through the study. I reported all findings and procedures accurately to establish the reliability of the research. Compiling qualitative data systematically could achieve reliability (Moustakas, 1994). The ability to maintain accurate results and consistent documentation of the procedures in a research ensures reliability (Yin, 2014). Reliability is related to the ethical way to conduct a research study (Merriam, 2009). A study was dependable when another researcher can repeat the study and arrive at the same or similar results (Oluwatayo, 2012).

Ali and Yusof (2011) asserted that a researcher could address dependability of the research by checking for errors in the transcription and changes in codes. To ensure that my research was reliable and dependable, I documented the steps of the research study and made sure the interview questions were uniform to ensure reliability, validity, and trustworthiness (Gibbs, 2007). These measures ensured that the research met the dependability test. For this study, I summarized what the participants shared in the interview. I share my summary of the interview with the participants through the process

of member checking. After I had obtained the validation of my summary from the interview participants, I coded and analyzed the data. The process of member checking was useful and helped to synthesize the interview data with the participant and also helped to validate the synthesis.

Creditability

I ensured the credibility of the research by checking for consistency of all interview questions, to make sure every participant answered the same question and duplicated the contents of the study during data collection. I was a blank slate and did not contribute any knowledge of my supply chain experience to the participants. The interview protocol (Appendix B) guided me in the interview process to increase the creditability of the research. After each interview, verbatim transcription of interview responses took place to ensure the participants reviewed the transcription of the data to confirm what the participant intended to communicate. Marshall and Rossman (2011) advocated that researchers should use established procedures to measure the accuracy of their findings to validate a qualitative study. I validated my research by documenting the processes by cross-checking documents and using member checking. I used participant interviews with the managers in supply chain and triangulated the data to establish external validity for my research. Shank (2006) advised the use of methodological triangulation to show the level of strength of the research. Juros (2011) suggested that researchers could attain a high degree of validity in a qualitative study by applying methodological triangulation, member checking, and collaboration. Methodological triangulation needed two or more data sources for the research to be informative and

valid than using a single data source (Torrance, 2012). The use of NVivo 10 qualitative analysis software will improve the credibility of the research.

Transferability

Erlingsson and Brysiewicz (2013) added that the rich description of the research would enable other researchers to determine if the study was transferable to other studies and arrive at the same or similar results. To achieve transferability, I ensured a detailed description of the study, and the ability to transfer it into another context to enable evaluation (Garside, 2014). The transferability of the research will help future researchers to follow a similar framework to achieve the same or similar results. The traditional comprehension of reliability, as Ali and Yusof (2011) described, is that other researchers will arrive at the same conclusion if they investigate the same event with the same data.

Confirmability

In qualitative studies, there should be different procedures that will lead to a dependable result. Confirmability is when other researchers and participants can confirm a research and still identify a distinctive viewpoint the researcher brings to bare (Thomas & Magilvy, 2011). Confirmability is rechecking data to reduce bias by using interview protocols (Appendix D) to standardize procedures as best as possible in a semistructured environment. Gibbs (2007) asserted that by ensuring the accurate documentation of the steps in the process in which methods and designs are consistent, a researcher could establish reliability. I ensured confirmability of the research by using audit trails. I documented the study process and kept records to ensure other readers could inspect, check, and recheck my data.

I provided participants full access to the interview transcript for auditing and validation. Clarifying what the participants of the research study say establishes validity (Merriam, 2009). I used rich, thick descriptions to describe the supply chain managers lived experiences of the phenomenon to engage the reader in the right context. Erlingsson and Brysiewicz (2013) noted that using member checking to reduce errors before analyzing the data helps to achieve validity. I reached saturation when the information from the interviews become repetitive and further interviews added no new information to the analysis (McGuire et al., 2013). Marshall et al. (2013) posited that the interview needs to continue until the information obtained from the participants becomes redundant. A follow-up interview during the process of member checking helped me to achieve saturation. Member checking will continue during the interview process until no new information emerges and summary validation of data is complete.

Transition and Summary

In Section 2, I documented the basis and reason for using a qualitative multiple case study to explore the experiences of supply chain professionals in Ghana. The experience of the supply chain professional and analysis of information from the interviews helped document possible strategies that contribute to eliminating the disruption in the supply chain. I detailed the analysis of the role of the researcher in the collection of data and the responsibility of the participants involved in the research. I analyzed the method, design and their appropriateness for the study and justified the method of research about the research question. I used a qualitative multiple case study design to interview supply chain professionals identified in Accra, Ghana. The study

involved interviews as the primary data source. In Section 3, I presented the findings of my interview and analyses and how the application of my finding would have an effect on business, social change, and professional practice. I ended with recommendations for future action and future research, reflections and conclusion.

Section 3: Application to Professional Practice and Implications for Change

Introduction

In Section 3, I outlined the results of this research study. This section of the study included the following: (a) overview of the study, (b) presentation of the findings, (c) applications to professional practice, (d) implications for social change, (e) recommendations for action, (f) recommendations for further study, (g) reflections, and (h) summary and study conclusions. I communicated the presentation of findings via the emergent themes of (a) identification of disruptions before they occur, (b) information sharing and collaboration between partners, (c) management strategies to mitigate supply chain disruptions, (d) inventory optimization, (e) availability of human capital, (f) energy and finance problems. These study findings are beneficial to anyone working in the supply chain.

Overview of Study

The purpose of this qualitative multiple case study was to explore how supply chain managers in Ghana could reduce or prevent disruptions in the supply chain. The population for this multiple case study involves managers who influence the implementation of all parts of the supply chain. The research population consisted of supply chain managers from three FMC companies in Accra- Ghana. These participants have demonstrated success in supply chain management by having fewer than five supply chain disruptions in the past year. I will outline how I arrived at the details of the findings, including discussions about the application of the study's findings to

professional practice, implications for change, any improvements, and recommendations for action and future research.

I used a purposeful sampling approach to select the interview participants. Yin (2014) suggested from 3-5 participants for a case study. I chose four participants from each FMC company in Accra. I did a thorough research of the target businesses and contacted six of them of which four companies responded and two did not. I obtained approval of the Director of Human Resources Department and collected a letter of cooperation from the company's authorized representatives. The directors gave me the names and contacts of the managers who met the minimum requirement of having less than five supply chain disruptions in the previous year. The letter of cooperation was the authorization to contact participants who qualify and to collect data, do member checking, collect company supply chain procedure manuals and documents. The first step in the process involved me inviting the supply chain managers for the interview via a face-to-face request or by phone. I used a purposeful sampling approach and presented them with an informed consent form (Appendix C). The managers interviewed were operations managers, logistics, transportation, manufacturing and general managers. The interviews were conducted at the participants' office locations for convenience and to ensure confidentiality of the research.

After the interviews, I put the data together and transcribed each interview and reviewed the interview data to be sure I was accurately reporting the participants' responses to my interview questions. I validated the data with the participants by using member checking which involved (a) interviewing participants of the research, (b)

analysis and synthesis of interview data that I have recorded, and (c) I validated the synthesized data with each participant to ensure accuracy. The participants had three days to return the summary. The participants either confirmed the summary or corrected anything that was not accurate. After that, I incorporated the feedback into the final analysis. I entered the data gathered from participant interviews into a qualitative software NVIVO 10 and analyzed the information. A review of company documents related to policy, procedure, and business continuity planning and the data from the interviews provided triangulation of the findings and validated the results. The grouping after the analysis revealed six main themes. I related the themes to the literature review and conceptual framework and discovered a connection to the study.

Presentation of Findings

In this study, I used 12 participants and numbered them from C1, C2, C3 up to C12 in line with the confidentiality agreements. All participants were in Accra-Ghana, and the interviews took place at their place of work in their private offices.

Theme 1: Identification of Disruptions Before They Occur

The identification of a disruption before they occur was the first theme identified. This theme revealed the importance for supply chain managers to make a conscious effort to identify disruptions or signs of potential disruptions before they occur. The first theme emerged because of the need for managers to identify a disruption before they occur. Nine of the participants (75%) indicated that detecting a disruption was difficult because most of the disruptions like sudden power cuts or machine breakdown happen unexpectedly. However, C1 and C8 shared their experiences in the last year where they

were able to identify disruptions before they occur because of the lessons learned from previous experiences. In the case of a sudden electricity outage, CI said, “We installed a stabilizer and a generator near the plants and monitored the voltage to determine if there will be instability in the power supply from the national grid or sudden shutdown.” The managers will usually switch the productions machines to a generator when the power become unstable and unreliable.

Participant C8 added that the company has identified through experience that sudden electricity outages or fluctuations usually occurs in the afternoon when most manufacturing companies in the industrial areas are at their full capacity, and the usage is very high at that time of day. That is when they are most careful although they may not get it right all the time, C8 indicated. Managers can improve their ability to detect disruptions by investing in the necessary technology and equipment. The investment would help increase supply chain resilience and quick response time when disruptions occur. Participant C3 indicated, “the economic disruptions in Ghana in 2012 due to currency fluctuations and governments restrictions on certain economic investments should have been expected (Wright & Datskovska, 2012). Although participant C1 and C5 admitted they did not accurately anticipant the effect of the currency fluctuations could have on the prices of the goods and services the company provided to customers. The currency fluctuations made the prices of raw materials, fuel, delivery, and the prices of goods more expensive for the client.

Participant C4 and C11 noted that they have had issues with delay of goods and services to customers when disruptions occur, and some of the sudden electrical

shutdowns have cost them money. They added that when they have a good communication plan in place and could get the information out quickly to the customer, that helps to manage the expectations. Participant C7 however, noted a time when the company lost a major customer because of an unexpected breakdown of the manufacturing plant. Participant C7 added that no amount of explanation or communication to the customer could help save the contract. The company lost 23% of the total production that year because the customer was disappointed and switched to a competitor. The lesson here is that if the supply chain is not managed to function effectively, disruptions will occur and that could lead to severe consequences. Participant C6 noted that there might be a company plan in place with all the procedure manuals and training to go with them, but that does not guarantee the ability of managers to identify disruptions before they occur. In some situations, human error might be the greatest problem even when all the preventive steps are in place.

Theme 2: Information Sharing and Collaboration Between Partners

Information sharing and collaborate with other parts or partners of the supply chain when a disruption occurs was the second theme that emerged based on Interview Questions 2, 3, 4, and 6. Supply chain collaboration has become an important business strategy because of global competition (Chang, 2012). Participant C1 and C7 and C11 suggested that supply chain managers in Ghana had the potential of doing a better job in reducing the impact of a supply chain disruption when it occurs by sharing information between all parts of the supply chain and external partners. They believed that the inability to quickly share the needed information was the reason most disruptions take a

long time to contain. The time delay has led the problems to become severe. They maintained the necessity for information flow to be rapid and consistent across supply chains was key. Participant C1 and C3 suggested segmenting the value chain depending on the impact of the disruption to help contain disruptions quickly. They emphasized that sharing strategic information between other parts of the supply chain and with partners in a timely way will contribute to collaborate a united effort to reduce the impact of a supply chain disruption. Participant C4 said, “All managers involved in the process of solving the problem maintained a strong communication link between operations, transportation, procurement and customer service to ensure everything was managed internally and communicated appropriately to the customer as well.” A robust supply chain has in build disaster management capabilities (Scholten, Scott, & Fynes, 2014).

Six or 50% of the participants strongly suggested a collaborative strategy amount supply chain partners that should be known to all managers within the organization. Brekalo, Albers, and Delfmann (2013) posited that 70% of all strategic alliance plans fail. However, all six participants emphasized the need for the formation of a division in each company to have trained, tested and battle ready employees who will tackle any disruption when they occur. Participant C1 added, “the managers have to collaborate with other stakeholders to keep information flowing.” The statistics did not change their outlook towards forming strategic alliances with partners in the industry. According to the participants, managers must respond anytime a disruption occurs, but the ability of the managers to respond adequately will depend on the design and sophistication of the supply chain response procedure. Eight out of the 12 participants (73%) indicated that the

supply chain design is a way of assessing the supply chain about any possible problem from the manufacturing through packaging, shipping, transportation down to the consumer. Participant C3, C9, C10, and C12 added that the company suspends every protocol after a disruption occurs so that the decision makers can have a free hand to make the appropriate decision and changes to solve the problem. Sometimes they had to pull employees from other departments and positions to help prioritize the problem they were facing. All the participants (100%) believe that deliberately integrating all parts of the supply chain will help build strong relationships and help the collaboration strategies with suppliers to help reduce the impact of a supply chain disruption.

A concern of four of the participants (33%) was the level of trust that exist between supply chain partners. Participant C2 said the trust issue was not a problem within the company, but rather with external partners. Participant C5 indicated that in many cases the flow of information to partners was not timely, and neither was it shared with all partners to have a cohesive and coordinated response to the disruption. Participant C7 and C9 said timely communication and information flow to customers from the sales force or customer service departments was important to maintain the customers' expectations after a disruption. Scholten and Schilder (2015) noted that joint efforts and collaboration between partners and information sharing would increase the resilience of the supply chain. A position that most participants agree. Table 1 shows the number of times participants used the words information sharing and collaboration.

Table 1

Number of Times Information Sharing and Collaboration was Mentioned

Information Sharing and Collaboration	Times	
	mentioned	% of responses
C1, Interview Questions 2, 3 ,6	5	50
C3, Interview Questions 2, 3, 4, & 6	4	40
C4, Interview Questions 2, 3, 4, & 6	6	60
C7, Interview Questions 2, 3, 4, & 6	6	60
C11, Interview Questions 2, 3, 6	4	40

Theme 3: Management Strategies to Mitigate Supply Chain Disruptions

The third theme that emerged from the interview analysis was about how to mitigate supply chain disruptions that have happened in businesses. The theme emerged based on Questions 4, 5, and 6. I had many responses from this line of questioning, and most participants had a few experiences that they could not forget. Ten participants (80 %) shared an experience with a disruption and how the problem was solved. Participant C4 was quick to note that the disruption cost the company millions of Ghanaian cedis and low credibility in the industry. Every participant shared particular experiences of how he or she was successful mitigating a disruption that could have been devastating to the fortunes of the business. The participants had various types of mitigation strategies that worked for their companies although some had to try several options first. Participant C1 narrated a situation where several of their raw materials the managers use in

manufacturing a particular product for one of their loyal customers arrived late at the port of entry because of backlogs that the company could not control. As a result, services to the customer was late. Participant C1 added that they had to make the necessary changes to get the job done by conveying the material on trucks from a neighbouring port at a high price to satisfy the customer. The managers had to move personnel and manpower around in a very effective way so that no one is left without work and everyone was focused on the problem to arrive at a quick solution. The experience compelled the management team to invest more in research and development and to find other ready alternatives should an event of this nature happened again. Participant C1 added that the experience changed the way the company prepared for and managed disruptions.

Participant C3 noted that they were always guided by the management team to use the theory of constraints in a crisis. Managers made the necessary changes to ensure that they make the products and service available to the customer every day and at the right time and quality. The theory of constraints was part of the company policy manuals that managers had to follow. When a disruption occurs during any part of the production process, managers needed to (a) identify the problem or constraint, (b) elevate the constraint, (c) subordinate all other issues, and (d) exploit the constraint till the problem is solved. Participant C3 added that this was the company strategy that has been successful in many situations when they faced a disruption in the supply chain. The company will do everything possible to ensure that all human and material resources are brought to deal with the situation until managers find a permanent solution. Participant C9 also noted that their experience of a disruption and the related problems convinced the

management team to change the company policy of how the company handled problems in the supply chain. As a result of the experience and the lessons learned, the company invested in a third party agency to source raw materials and other products from suppliers who were capable of providing the products at a competitive price and of the same quality or better. The company abolished the policy of sourcing from just one vendor which managers believe did not serve them well in a previous experience.

Participants C3, C10, and C11 noted an experience they had because the materials the company used for their products ran out much earlier than was expected because it was a seasonal product that depended on the rains. The rains that year was bad, so the harvest was poor and resulted in a shortage. The suppliers did not have enough to store for the whole season. The result was a severe shortage of raw materials and even when they could get some, the raw materials were almost three times more expensive because of the shortage. The companies lost customers and made their product very expensive for customers that year. That experience made management investigate and started investing in silos in different parts of the country so they could buy raw materials at a good price during the harvest and store them for a longer period to last the whole year. This experience helped the managers to plan ahead, sourced materials from multiple suppliers and helped stabilize the prices of their products and services year round. The new policy made room for changes in weather patterns and any other natural disasters. Participant C4 noted an experience where much needed raw materials could not get to the factory in time because of a bad road network. The heavy rains in the rainy season had destroyed parts of the main road to the villages and rendered a bridge unusable. Participant C4

blamed this on corruption by top officials who gave out contracts to incompetent contractors who did not do a good job in building roads and bridges. Baba (2012) posited that corruption and inconsistency in policy implementation had affected the efficiency of the supply chain network in many parts of the country. A thought that six participants (50%) believed was a contributing factor to disruptions in the supply chain especially with transportation and logistics.

Theme 4: Inventory Optimization to Meet Demand

The fourth theme that come from the interview analysis was the need for managers to optimize inventory levels appropriately because of the unreliability of the activities in the supply chain. The theme emerged based on Question 6 and 7. Nine of the participants (75%) raised the issue of not having adequate inventory to meet customer demands even when there was no disruption. Participants indicated that the problem becomes complex when disruptions happen. Participants C1, C4, and C7 noted occasions where the managers had to scramble in different directions because their planning was poor in all parts of the supply chain to the point where logistical delays and raw material shortfalls delayed the production and delivery of goods and services to customers.

Participant C11 noted, “Producing items based on forecast as opposed to order request requires planning and purchasing production materials ahead even before production starts.” Participant C12 observed that as a result of unreliable vendors, manufacturing companies have almost 40% of their working capital invested in inventory. A situation that has made it more expensive to do business in Ghana. Son and Orchard (2013) posited that a planned strategic procurement of inventory with reserves is an effective

supply disruption mitigation policy. Participant C2 supported that idea and confirmed that as a policy in the company.

Participant C9 noted a policy that managers in the company have adopted to help minimized disruptions while optimizing inventory was the value chain framework by Michael Porter (1998). The focus was to evaluate the activities that provided a competitive advantage over their competitors and how that could help control inventory to be at their optimum levels. Managers measure the cost of the associated inventory. Participant C9 concluded by stating that “The company makes profit when the cost of the activity and the inventory needed to produce it is lower than the value to the customer.”

Participant C6 recalled a decision by management after a disruption to use a vendor managed inventory strategy so the supplier would have access and the ability to track the level of inventory so that the client will not run out of raw materials. The strategy helped optimize the supplier’s operations and proved to be effective. Participant C6 noted that the vendor managed inventory strategy was successful in the current location because the vendor was in proximity to the factory. For the vendor to agree on this strategy the company had to guarantee to use the vendor as the sole vendor and provide a timetable with a predictable demand and little or no variability in supply. Participant C10 noted that after a supply chain disruption, senior management studied and invested in the just-in-time (JIT) delivery processes to help in optimizing inventory. The goal was to have less inventory on hand, reduce the space required to keep materials and make the running of the business less expensive and efficient.

Six participants (50%) explained that the perception and the need to invest and acquire better skills for employees was evolving because of the challenges and the growing need in the industry. Participant C2 stated that the discovery and subsequent production of oil and gas in Ghana had created an awareness that skilled personnel is needed to fill up the many jobs.

Theme 5: Availability of Skilled Personnel or Human Capital

The fifth emergent theme, based on Interview Questions 7 pertained to how managers used different implementation strategies to solve the same problem in the supply chain. This question developed into a topic of whether companies had adequate knowledge and skills within the supply chain industry. Six of the participant (50%) were of the view that managers are dealing with the unavailability of employees with the required skills to manage the supply chain especially when problems occur. Participant C7, C9, and C12 were of the opinion that the ability to think quickly about what strategy to use in a particular supply chain disruption was because of experience, training, and skills. Participant C7 noted, “The major part of the training should come from our universities and colleges, but you will find students who have supply chain management as a major in college but do not understand how supply chain works.”

Participant C9 noted that management of companies and colleges needed to collaborate to draw training programs that prepare students for the job market. The concern among 75% of the participants was that many students graduate from college and are not ready to do anything. Six of the participants (50%) believed that the only way to improve the skills and decision making of supply chain professionals in crises situation is

for universities to develop a curriculum with the input of industry professional. Also, C1 noted that students studying supply chain need to have the opportunity to do a full semester internship on the job to prepare the student before graduation from college. Participant C5 noted that supply chain partners need to adopt a cooperative behavior and collaborate efforts to attain a higher level of performance.

Theme 6: Energy and Finance Problems

The sixth theme that emerged from the study based on question number 8 which referenced any other issue or questions that I did not ask in the interview. The inadequate energy supply for the manufacturing companies and the lack of cheap financing to operate the business was a concern for 9 participants (75%). Participant C4, C7, and C12 noted that the unstable electricity supply between 2012 and 2015 directly affected the ability of businesses to provide goods and services to customers on-time and at the right price. The participants added that because of the unreliable electricity managers had to purchase fuel to power standby power generators for the manufacturing process. The fuel was expensive and directly increase the cost of production. Participant C12 noted a time when financing was needed to save the company from closing down, but no financial institution was willing to help save the company. The owners had to take some difficult managerial decisions and ended up cutting down the staff and reducing benefits to save the company. Most participants mentioned financing as a challenge to the company's existence.

Participant C1 recommended repositioning of the electricity supply in Ghana and invest in other renewable sources of energy to help keep an uninterrupted flow of

electricity to the industries. In line with the energy problem is the financing challenges that companies face. Participant C11 noted that disruptions would not be common if managers had cheaper sources of financing to invest in the needed technology and materials that will help deal with the disruptions. Participant C3 added that managers had to wait five months to secure a business loan to purchase an industrial size generator to help manage the unreliable electricity supply. A situation that many companies could not survive. The existing literature supported the six themes identified in the study. The effective implementation of these themes should increase the efficiency of supply chain managers to reduce or prevent disruptions in the supply chain of companies in Ghana and help the companies compete on the local and international market.

Application to Professional Practice

The findings in this study indicated that supply chain managers in Ghana have a strong desire to use the information from the study to understand, learn and educate managers on supply chain mitigation strategies. Son and Orchard (2013) described a disruption as an unexpected event which affects the accessibility of supply sources and causes an interruption in the operation of the whole supply chain. The goal of the study was to explore strategies supply chain managers in Ghana use to reduce disruptions. The information from this study provides the causes of inefficiencies in the supply chain that managers, industry experts and policymakers will use when formulating intervention strategies for preventing supply chain disruptions. All participants have had fewer than five disruptions in the past year and as a result, have demonstrated competence in managing the supply chain in their businesses. The themes and experiences of the

participants will help managers to find ways to detect supply chain disruptions before or after they occur. A company will increase their efficiency, sustainability, and profits when managers can effectively develop the means to detect a supply chain disruption before it occurs. Supply chain managers should invest in modern technology that will help track and monitor areas in the supply chain where disruptions are likely.

Supply chain disruption happens in different areas of the value chain. Seventy-five percent of the participants agreed that a strong communication and collaboration policy between supply chain managers, suppliers, and external partners would help to reduce the effect of a disruption. Managers will learn from this study to use best practices to find and implement the best way to communicate and collaborate with partners to effectively reduce disruptions. Managers will also learn to use mitigating strategies that solve more than just one disruption but multiple disruptions at the same time. This approach is efficient and beneficial to companies because it will help them plan, allocate resources effectively and reduce the cost of mitigating a disruption. Managers can also use the results from this study to design strategies that will help protect new industry entrants from making similar mistakes and implementing strategies that help provide the right products to the customer at the right time and price.

Supply chain managers will benefit from an effective supply chain because efficiency in business operations improves profit margins and employee's fulfilment because their efforts are making a positive impact on the business. An efficient supply chain helps managers differentiate the company from their competitors by enjoying a competitive advantage and the efficient use of best practices. The differentiation could

help the company to create new markets that an inefficient company could not. All the benefits mentioned will not be possible without a knowledgeable management team. As a result, companies and academic institutions will use my study and the themes developed to help formulate and implement academic and internship programs that correlate with the changes in modern business. The initiative will contribute to training a better pool of qualified personnel to manage or prevent the challenges in the supply chain industry.

Implications for Social Change

The goal of every leader is to make the customer happy. Customers will make the decision to become local or shift to competitors based on the services they receive from companies. The customer will always strive to get the best product at the lowest price in the most convenient way possible. For businesses in Ghana to meet the needs of the customer, managers need to implement effective supply chain mitigating strategies that continuously prevent supply chain disruptions. Wieland and Wallenburg (2012) added that effective supply chain strategies could lower cost, increase economic health and social benefits. The effective supply chain will lead to minimum disruptions and uninterrupted production of goods and services at a lower cost. The lower cost of production will translate to lower prices for customers, and improved quality standards of goods and services locally and keep companies competitive internationally.

Companies in Ghana will have profits to invest in social amenities like building schools, providing potable drinking water, electrification projects, and community development activities in communities in Ghana. Most of the companies use this as an opportunity to satisfy their cooperate social responsibility. The availability of these social

amenities in a developing country like Ghana is significant and has a direct effect on the lives of the citizens. The people in the communities will have access to quality education because of the possibility of providing well-equipped schools, well-trained teachers, portable drinking water and electrification projects. These facilities propel communities and promote trade and business activity that creates good-paying jobs for the citizens. All these amenities together help to increase the standard of living of the people and a positive social impact.

Recommendations for Action

The results of this study and the literature review confirmed the existence and an indication of numerous sources of disruptions in the supply chain. I also identified a good number of opportunities for managers in Ghana to make the right decisions and determine the best practices and strategies to help prevent disruptions in the supply chain. The strategies to help managers to identify disruptions before they occur, Information sharing and collaboration between supply chain partners, mitigation strategies, Inventory optimization to meet demand and good financing opportunities. The business problem addressed in this study was that supply chain managers in Ghana had limited strategies and skills to mitigate disruptions in the supply chain. Unfortunately, there have not been previous studies in Ghana where researchers have conducted and analyzed the strategies thoroughly in relation to the systems theory. Other researchers have to conduct research specific to Ghana that will analyze the factors that will help minimize disruptions in the supply chain.

Based on the findings and review of this study, I recommend the following for further action:

1. Supply chain managers in Ghana should develop a culture and interest in discovering the courses of a supply chain disruption before they occur. The strategy should be developed internally by every company and continuously improved based off the experiences the managers encounter daily and best practices shared by partners and competitors.
2. Supply chain managers should identify the appropriate information and collaboration strategies that will enhance partnerships and increase the rate at which managers share information and collaborate in good time with internal departments and external partners in solving a disruption when they occur.
3. Supply chain managers should focus on developing mitigation strategies to identify and assess the direct and indirect impact of a potential disruption and determine what appropriate solutions that will help solve the disruptions.
4. Supply chain managers should develop the skills of employees to help increase employee capacity to optimize inventory to meet demand.
5. Managers should develop the strategic relationships with financial institutions to help with financing emergencies and capital investments that are needed to invest in technology, train professionals and develop strategies to help reduce disruptions in the supply chain.

The depth and scope of the research and actions have to be thorough and extensive to represent all parts of the supply chain. When the research is extensive, it will contribute to increasing knowledge and experience of supply chain managers and researchers in Ghana. The finding will contribute to business practice and positive social change. As outlined in the study, managers in Ghana need to understand the relationship between disruptions in the supply chain and business success.

Recommendations for Further Study

The first recommendation for further study is for future researchers to develop an interest in doing more research in Ghana. In this study, I did not find any documented research on preventing disruptions or any in-depth research on the challenges of the supply chain in Ghana. There needs to be more interest in this area of study to explore the opportunities and inspire positive change. This study was conducted in Accra and did not represent the whole country of Ghana. As a result, the sample of participants may not necessarily represent all areas in Ghana. Further studies should be conducted in other parts of Ghana and Africa to explore, document, and analyze the challenges and opportunities in the supply chain.

The second recommendation is for future researchers to do a rigorous research into the individual parts of the supply chain in Ghana. For example, future research should focus on the supply of materials, operations, manufacturing, packaging, logistics and delivery to the final consumer. The in-depth study of these individual parts of the supply chain will give managers and business leaders a better understanding of the challenges and opportunities of each part of the supply chain. The knowledge will help

future researchers and business leaders to determine the relationship between the individual parts of the supply chain and business performance. The knowledge will help managers to adapt strategies that are beneficial for business success.

One of the results of this research indicated that supply chain majors from the universities do not prepare adequately for the challenges of the industry. The third recommendation for this study is for budding researchers to investigate the importance of decision makers in tertiary institutions in Ghana to collaborate with businesses and managers of supply chain management companies to draw up the study program for students. I believe if achieved, tertiary institutions and business managers will collaborate to draw up subjects and programs that will better prepare students for the job market. The universities will produce students who are ready to deal with the growing challenges of disruptions in the supply chain on the job. Managers will be confident that the employees will be competent and efficient on day one.

Reflections

The focus of this study was to explore strategies that managers in Ghana use to reduce or prevent disruptions in the supply chain. A study that has been enlightening, exciting and educating to me. At the beginning of this study, I did not know that earlier researchers have not taken the time to focus and study about the courses of supply chain disruptions in Ghana and Africa. Most of the documented studies were in more developed and advanced economies and other developing countries that have the same economic characteristic as Ghana. The studies were usually general in nature about disruptions in the supply chain but not specific to Ghana.

From this experience, I learned that there were different strategies managers in Ghana use to reduce supply chain disruptions based on the internal and external policies of the companies. Initially, I was of the impression that managers will use similar supply chain mitigation strategies if the disruption was similar. However, managers in different organizations use different supply chain risk and disruption management strategies even when the nature of the disruptions were similar. The managers designed mitigation strategies based on their previous experiences and manager's tolerance to risk. Most managers could not put a price tag to the disruptions but have the general idea that disruptions were costly to the organization.

Summary and Study Conclusions

The strategies supply chain managers use to limit or prevent disruptions have become increasingly important because of the growing complexity of the supply chain. The inefficiency of the supply chain in Ghana has affected businesses and resulted in the slow profits of many companies. The literature review, research from supply chain professional and analysis from the study has revealed strategic opportunities for managers in Ghana. The most important of which is the ability of managers to identify a disruption in advance. The ability to identify and prevent the disruption will provide a great opportunity for managers to save money and for companies to operate smoothly. The managers have a great opportunity to learn from this study and from other best practices to turn their companies around by effectively implementing the strategies outlined.

Other areas that should improve range from institutional constraints, underdeveloped market mechanisms, cultural differences, law enforcement, and legislation (Fujun et al., 2012). The useful application of these issues can lead to improvements in productivity and increased profits. Manufacturers, suppliers, and customers in Ghana can take the lead by increasing employee involvement and building relationships from the product design process to have an effect on the sourcing arrangements. Leadership must play a significant role to ensure that progress and the development of the supply chain in Ghana is steady and transformative.

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Appendix A: Interview Questions

1. What is the organizational supply chain management strategy?
2. How do you identify strategies to reduce the risk to the supply chain of your organization?
3. How do you prevent disruptions in the supply chain?
4. How do you manage disruptions in the supply chain?
5. What coping strategy did you learn from any recent disruption?
6. How do you as a manager adopt a strategy to address supply chain disruption with your suppliers?
7. What systems do you have in your company to support supply chain disruption risks and implementation?
8. Do you have any additional information that you would like to add that I did not ask?

Appendix B: Interview Protocol

Institutions: _____

Participant (Title): _____

Interviewer: _____

Date of the interview: _____

Time of the interview: _____

Strategies for Reducing Supply Chain Disruptions in Ghana

I will conduct semistructured interviews in a location convenient to you. The length of the interviews will be 45 minutes approximately. I will introduce myself, the research topic and state the purpose of the research, and then I will ask the participants the department they head. During this time, I will ask several questions that I would like to cover based on my sample interview questions. If time begins to run short, it may be necessary to ask participants for more time to push ahead and complete this line of questioning.

Introduction: I kindly ask you to accept my invitation to be interviewed because you are a supply chain manager with experience in supply chain management. I would like you to share with me the strategies used to mitigate supply chain disruptions in the organization. My research project focuses on strategies for reducing supply chain disruption in businesses in Ghana. This research will help explore the strategies your organization uses to reduce supply chain disruptions.

Appendix C: Consent Form

You are invited to take part in a research study to determine strategies for reducing supply chain disruptions. The researcher is inviting supply chain professionals who are managers and decision makers within their organizations to be in the study. This form is part of a process called “informed consent” to allow you to understand this study before deciding whether to take part.

This study is conducted by a researcher named Carl Kwaku Dey, who is a doctoral student at Walden University.

Background Information:

The purpose of this study is to identify and understand the factors that lead to supply chain disruptions and what strategies managers can identify to reduce or prevent the disruptions in the supply chain of companies in Ghana. The participants should have demonstrated success in supply chain management by having fewer than five supply chain disruptions in the past year.

Procedures:

If you agree to be in this study, you will be asked to: Voluntarily participate in an interview. The interview will be audio taped to ensure the accuracy and validity of the data collected. The researcher will meet with you briefly on the day of the interview to ensure you understand the purpose of the study and address any questions; you have and collect the signed Informed Consent Form. The interview should take about 40 minutes to complete. The interview will consist of 9 questions, and the initial findings will be reviewed with you to ensure accuracy. The findings will become part of our data base and at no time will your name or the company’s name appear in the interview. You are welcome to review the research findings after the methodology, design and validity have been accepted.

Here are some sample questions:

What is the organizational supply chain management strategy?

How do you identify strategies to reduce the risk to the supply chain of your organization?

How do you prevent disruptions in the supply chain?

Voluntary Nature of the Study:

This study is voluntary. Everyone will respect your decision of whether you choose to be in the study. No one will treat you differently if you decide not to be in the study and if

you decided to opt out of the study any time during or after the study is conducted. If you decide to join the study, you can still change your mind later. You can stop at any time with or without permission. If you chose to withdraw after the interview, your answers will not be part of the data.

Risks and Benefits of Participating in the Study:

Participating in this study would not pose any risk to your company or career. The study could potentially benefit local and international organizations about how disruptions occur and how to implement strategic initiatives that will help reduce or prevent costly disruptions in the supply chain.

Payment:

No incentives or payment of any kind will be offered to you for your willingness and participation in this voluntary research study

Privacy:

Any information you provide will be password protected to ensure confidentiality. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the study reports. Data will be kept secure in a password encrypted computer. Data will be kept for at least five years, as required by the university.

Contacts and Questions:

You may ask any questions you have now, or if you have questions later, you may contact the researcher via 027-762-5856 or carl.dey@waldenu.edu. If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is . 612-312-1210 Walden University's approval number for this study is **IRB will enter approval number here** and it expires on **IRB will enter expiration date.**

The researcher will give you a copy of this form to keep for your records

Statement of Consent:

I have read the above information, and I feel I understand the study well enough to make a decision about my involvement. By signing below, I understand that I agree to the terms described above.

Printed Name of Participant

Date of consent

Participant's Signature

Researcher's Signature

Appendix D: Confidentiality Agreement

Name of Signer: Carl Kwaku Dey

During the course of my activity in collecting data for this research: “Strategies for reducing disruptions in supply chain” I will have access to information, which is confidential and should not be disclosed. I acknowledge that the information must remain confidential, and that improper disclosure of confidential information can be damaging to the participant.

By signing this Confidentiality Agreement I acknowledge and agree that:

1. I will not disclose or discuss any confidential information with others, including friends or family.
2. I will not in any way divulge, copy, release, sell, loan, alter or destroy any confidential information except as properly authorized.
3. I will not discuss confidential information in which others can overhear the conversation. I understand I cannot discuss confidential information even if the participant’s name is not used.
4. I will not make any unauthorized transmissions, inquiries, modification or purging of confidential information.
5. I agree that my obligations under this agreement will continue after termination of the job that I will perform.
6. I understand that violation of this agreement will have legal implications.
7. I will only access or use systems or devices I’m officially authorized to access and I will not demonstrate the operation or function of systems or devices to unauthorized individuals.

Signing this document, I acknowledge that I have read the agreement and I agree to comply with all the terms and conditions stated above.

Signature:

Date: