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Leadership Strategies Supply Chain Managers Use in Adopting Innovative Technology

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Abstract

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MS, Heriot-Watt University 2015

BS, University of Ibadan, 2009

Doctoral Study Submitted in Partial Fulfillment

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Abstract

Supply chain managers face challenges when adopting new technologies to remain competitive and satisfy consumer demands involving expedited delivery of food and services. Supply chain managers who fail to adopt new technology have a decreased propensity to stay competitive. Grounded in the transformation leadership theory, the purpose of this qualitative multiple-case study was to explore leadership strategies supply chain managers use in adopting innovative technology. Participants were six supply chain managers who successfully used leadership strategies to adopt new innovative technology. Sources for data collection were semistructured interviews, company archival documents, and field notes. Research data were analyzed via thematic analysis. Four themes emerged: people management, communication, leadership style and relationship, and coaching and empowerment. A key recommendation is for supply chain managers to implement employee training that increases knowledge of technology and helps drive the adoption of innovative technology. Implications for positive social change include the potential for supply chain managers to create job opportunities, provide social amenities and welfare, and support the economic development of regional communities.

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Dedication

I dedicate this doctoral study to my mother, Rebecca Becky Olowo. You are my inspiration! I would also like to dedicate this dissertation in memory of my father, the late Bola Olowo, and my siblings, who have encouraged and supported me to pursue my dreams despite adversity and never to give up. Thank you for not only believing in me but for always being there to support my academic endeavors and goals. This accomplishment results from the unconditional love you have shown me, and trust that I will always make the right decision. Thank you for instilling in me the drive and desire to overcome any challenge and obstacle I face with my faith in God. I know now more than ever that all things are possible with God. I appreciate your support and love forever and always. I dedicate this work to my wonderful niece Selma for putting a smile on my face even when stressed. I would also like to thank my best friend Anthony Igboekwe for your support and encouragement. You all have been my top cheerleaders.

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Section 1: Foundation of the Study

Globalization changed consumer buying behaviors, compelling business environments to adjust to remain competitive (Nordhagen et al., 2021). Organizational business executives fail to successfully implement technologically innovative techniques, resulting in a loss in market share, human resources, profitability, and decreased corporate change initiatives (Dubey et al., 2019). Quick adaptation of software applications in the supply chain could enable businesses to compete as technology drives new competitive business environments. Supply chain managers should adopt appropriate leadership strategies for implementing innovative technologies to survive in the global market and enhance their business sustainability.

Background of the Problem

The global supply chain disruptions in the United States distorted the production of goods and services, resulting in labor shortages (Meier & Pinto, 2020). According to Meier and Pinto (2020), output in sectors with high exposure to intermediate goods imported from China was 16% lower than usual. COVID-19 disrupted the supply chain industry, resulting in chaos across global networks and slowing economic growth. Supply chain managers' lack of appropriate leadership strategies to implement innovative technologies affected the supply chain network, resulting in longer production times and higher employee turnover, thereby causing adverse economic impacts (Dubey et al., 2019). Nordhagen et al. (2021) stated 94.3% of firms experienced decreased sales, resulting in negative financial impacts on their supply chain operations, with 54% of businesses changing their product prices due to the pandemic. The demand for food,

produce, and household items increased by 20%, causing a change in purchasing patterns as consumers spent less on high-cost healthy foods (Cakır et al., 2020).

Supply chain organizations contribute to economic growth as well as environmental and societal sustainability. To improve the welfare of society, achieve long-term sustainability, contribute to growth, and reduce business risks, supply chain managers should advance their business environments with technology (Mangla et al., 2020). Quick adaptation of software applications in the supply chain could enable businesses to compete as technology drives the new competitive business environment. According to McCrea (2020), organizational leadership plays a crucial role in terms of long-term sustainability and improving employment rates, living conditions, and socio-economic growth, hence the need for appropriate leadership strategies. Business and organizational leaders need to adopt appropriate leadership strategies for long-term sustainability.

Organizational leaders create a dynamic plan by analyzing the internal and external environment, monitoring trends, and adapting to a continually changing environment. Supply chain business managers' leadership strategies are essential in terms of achieving corporate objectives because leader tasks and relationship behaviors determine sustainability, employee retention, and improved standard of living (Xu & Wang, 2019). Shou et al. (2021) urged supply chain managers to build operational innovation to effectively overcome supply chain challenges and achieve superior performance by combining traceability and supply chain coordination. This study involved exploring leadership strategies that supply chain managers use in terms of

adopting new innovative technology to stay competitive in the rapidly changing global business environment.

Problem Statement

Supply chain managers face challenges when adopting new technologies to remain competitive and satisfy consumer demands involving expedited delivery of food and services (Andelkovic & Radosavljevic, 2018). Business organizations with delayed and disrupted supply chain processes experienced approximately 40% lower stock returns against industry standards for 2 years (Lucker et al., 2019). The general business problem was that supply chain managers needed to adopt innovative technologies in response to new trends to gain a competitive advantage in the dynamic emerging business environment. The specific business problem was that some supply chain managers lacked leadership strategies to adopt innovative technologies to stay competitive in a rapidly changing business world.

Purpose Statement

The purpose of this qualitative multiple case study was to explore leadership strategies that supply chain managers use in adopting new innovative technology to stay competitive in the rapidly changing global business environment. The targeted population was six managers from different supply chain companies in Atlanta, Georgia who have successfully used leadership strategies to adopt innovative technologies in their companies. Social change implications of this study included providing new strategies to supply chain managers involving adopting new technologies to improve consumers' welfare. A reliable supply chain with quality output could improve the lives of

consumers. Supply chain businesses expanding into new markets could increase economic value by creating new employment opportunities for communities, leading to a better quality of life.

Nature of the Study

Researchers conduct their study using quantitative, qualitative, and mixed methods to yield fresh perspectives on emerging research problems (Strijker et al., 2020). Researchers select appropriate methods based on the research problem using quantitative, qualitative, or mixed methodologies (Rutberg & Bouikidis, 2018; Seeram, 2019). The quantitative research method involves examining a phenomenon with precise measurements via a controlled design to understand relationships between variables (Zyphur & Pierides, 2020). According to Lanka et al. (2021), qualitative research is an inductive, subjective, and interpretive type of methodology for studying individuals and cases in their natural settings. The qualitative research methodology involves multiple data collection techniques such as observations, interviews, and open-ended questionnaires in semistructured settings to review social aspects of studies (Rutberg & Bouikidis, 2018). Researchers use the qualitative method for analyzing descriptive data that are collected during semistructured interviews (Strijker et al., 2020). I used the qualitative method for this study because it was appropriate for probing the research problem with a broad understanding of the concept through detailed analysis of participants' perspectives using their own words to draw on their concepts and experiences. Quantitative and mixed methods were not ideal as the purpose of this study was not to analyze empirical data for examining variables, characteristics, relationships,

or hypotheses. Mixed methods involve combining qualitative and quantitative methods (Rutberg & Bouikidis, 2018).

Qualitative designs include case study, ethnographic, phenomenological, and narrative designs which involve exploring free and open communication among participants (Kim et al., 2017; Strijker et al., 2020). According to Ford (2020), researchers use the narrative design to address participants' history, biographical information, and personal human experiences by highlighting their stories. The narrative design was not appropriate for the study because I did not intend to obtain information related to personal histories of participants. Larkin et al. (2018) explained researchers use the phenomenological design to gather information about a participants' lived experiences involving a phenomenon. The phenomenological design was inappropriate for this study because the goal was not to study participants' lived experiences. The case study design enables the researcher to retrieve depth and meaning in context by incorporating multiple sources and evidence (Tomaszewski et al., 2020). Qualitative researchers use the case study design to explore a phenomenon in a real-life setting (Siedlecki, 2020). The case study design was appropriate for exploring and comparing perspectives on leadership strategies that supply chain managers use to adopt innovative technologies in Atlanta, Georgia. I used a multiple case study design instead of a single case study design because the multiple case study provides a broader discovery of data sources and theoretical evolution of the research questions.

Research Question

What leadership strategies do supply chain managers use to adopt innovative technologies

Interview Questions

1. What leadership strategies do you use as a supply chain manager to adopt innovative technologies?
2. What challenges did you encounter as a business manager while implementing the leadership strategies?
3. How did you address the challenges you faced?
4. How did you implement the leadership strategies you used to adopt innovative technologies?
5. How did you measure the effectiveness of the leadership strategies?
6. Which of the leadership strategies has been the most effective in the adoption of innovative technologies?
7. What additional information would you like to share about the leadership strategies you used to adopt innovative technology successfully?

Conceptual Framework

The transformational leadership theory was the conceptual framework for the proposed study. Burns (1978) stated transformational leaders build relationships and influence their followers to change. Transformational leadership tenets include (a) idealized influence, (b) inspirational motivation, (c) intellectual stimulation, and (d)

individualized consideration (Northouse, 2019). Transformational leaders with idealized attributes act as role models, instilling confidence, and power in their followers (Northouse, 2019). Intellectual stimulation means transformational leaders support their followers by trying new approaches and developing creative problem-solving skills (Northouse, 2019).

Inspirational motivation involves how leaders motivate team members by communicating organizational goals to gain employee buy-in (Northouse, 2019). Individualized consideration refers to leaders who pay attention to their followers' needs by supporting employees (Mohsin, 2020). According to Zaman et al. (2019), project leaders use transformational leadership, flexibility, and visibility to improve project responsiveness and meet escalating commitments for successful project implementation. According to Northouse (2019), employees desire transformational leadership traits with leaders that influence their followers by promoting self-development and innovation, building trust by establishing connection and recognition, leading to motivation, high employee morale, and overall organizational productivity. The transformational leadership theory was suitable for this study as the qualities of the transformational leader, such as inspirational motivation and intellectual stimulation, fosters innovation in an organization.

Definitions of Terms

Disruptive innovations: Technologies that enable new sets of product capabilities that are unique in terms of mainstream technological features that are introduced into an

established industry initially at the bottom and moving up the market, eventually displacing mainstream competitors (Guo et al., 2019).

Innovation strategies: Strategies which are designed to innovate by exploring an organization's internal and external capabilities in order to gain a competitive advantage (Holloway et al., 2021).

Leadership strategies: Different management styles to develop an organization's vision, procedures, and methods, as well as influence organizational members to achieve enhanced performance, growth, and overall success through streamlined processes (Atan et al., 2019).

Supply chain management: Collaboration across an organization's value chain that builds customer and supplier relationships, improving the firm or organization's performance (Benseddik, 2019).

Technology implementation: Integrating new technologies into an organization or community involving operational processes and knowledge of technology with a pre-implementation and post-implementation framework in order to successfully sustain the newly integrated technology (Bhise & Sunnapwar, 2019).

Technological Innovation: New or improved products, services, processes, and significant technological changes developed by organizations that are launched into the marketplace (Gyimah, 2020).

Assumptions, Limitations, and Delimitations

Assumptions

I assumed participants gave an honest, truthful, and unbiased response to my research questions. Another assumption was that participants appropriately enunciated their responses to interview questions. I assumed a multiple case study research design was suitable for exploring various leadership strategies that supply chain business leaders use for adopting IT to improve productivity and increase profitability. Finally, I assumed the study sample size accurately represented leadership strategies that supply chain managers use in terms of adopting new innovative technologies to stay competitive and enhance their business sustainability in Atlanta, Georgia.

Limitations

Research limitations can include resource constraints, sample size, and inaccurate application of conceptual frameworks (Harari & Lee, 2021). The study's sample size was a limitation, with restricted access to multiple leaders in different sectors within the supply chain industry. Participants for the study were supply chain leaders who successfully implemented innovative technologies in their business and were reluctant to give detailed information about leadership strategies and technological innovations. The targeted population of six supply chain managers restricted the study findings as the sample size needed did not accurately represent all supply chain managers in Atlanta, Georgia. Third, participants were reluctant to express their strategies for fear of jeopardizing their positions in their organization. Fourth, supply chain managers provided

generic responses to interview questions as they needed help understanding the impact of technology on supply chain management.

Delimitations

Researchers acknowledge the existence of delimitations that establishes a framework for quality research findings when investigating a phenomenon. Delimitations involve highlighting the study's objectives, research questions, design, sample alternatives, and the reasons for rejecting them (Theofanidis & Fountouki, 2018). Researchers set limitations or boundaries to ensure the study's aims and objectives are possible to achieve by limiting the scope of the study as it relates to the phenomenon and research design (Theofanidis & Fountouki, 2018). The first delimitation of this study was that no specific leadership strategy generic to the supply chain organizations evaluated could improve the successful adoption of innovative technologies in Atlanta, Georgia. The study explored the individual experience six supply chain managers and the strategies they use in implementing information technology in their organizations. Another delimitation of the study was the location of the participants; because they were in Atlanta, Georgia, which would not allow for the generalization of the findings.

Significance of the Study

Contribution to Business Practice

Findings of this study might contribute to knowledge of leadership strategies that supply chain leaders could adopt when implementing innovative technology. Results of this study might be valuable to organizations by providing a guide on effective leadership strategies for sustaining and deploying innovative technology. Organizations may

leverage findings from this research to create guidelines that meet ethical requirements and training initiatives. From this study, I identified leadership strategies that six supply chain managers in Atlanta, Georgia implemented in terms of adopting innovative technology. Successful change initiatives require strategic planning, execution, and employee participation; lack of effective strategies may inhibit adoption within organizations.

Study findings could help business owners improve business practices and help firms thrive in volatile, uncertain, complex, and ambiguous environments by overcoming barriers to implementing and sustaining disruptive innovations. Findings could also give supply chain managers a comprehensive grasp of hurdles affecting the integration of innovative technology. Study results might assist supply chain managers in terms of adopting innovative technology, which could help them improve organizational efficiency and employee work-life balance.

Implications for Social Change

According to Lagumdzija and Ceremida (2019), organizations create shared value between companies and society through stakeholder participation to improve communities' living standards. By adopting successful innovative leadership strategies, supply chain business executives could expand into new markets, make goods available to people, and create new employment opportunities for communities, and societies benefit from transport efficiency, safety, healthcare, and socialization. The study could contribute to social change as an efficient supply chain equalizes goods and services, reducing consumer socioeconomic gaps. Organizations with efficient supply chain

processes might improve consumers' lives and increase socioeconomic growth and development.

A Review of the Professional and Academic Literature

Organizations use resources to formulate new ideas and concepts and gain competitive advantages. Organizational business leaders need strategies for successfully implementing innovative technologies to gain competitive advantages (Carreiro & Oliveira, 2019). Supply chain management administrators are under pressure to achieve more productivity and customer-centric supply networks while discovering inventive methods to decrease costs and facilitate growth (Dubey et al., 2019). Business managers are accountable for achieving firm business objectives involving gaining competitive advantages.

This study involved exploring leadership strategies that supply chain managers use in terms of adopting new innovative technology to stay competitive in the rapidly changing global business environment. Search keywords and phrases were: *leadership*, *leadership style*, *supply chain*, *transformational leadership*, *transactional leadership theory*, and *technological innovations.* Databases were: ERIC, EBSCOHost, Google Scholar, JSTOR, Multisearch ProQuest, Science Direct, Thoreau, and the Walden University Library. The literature search resulted in 212 peer-reviewed journal articles, four nonpeer-reviewed journals, two government or corporate sites, and seven textbooks. Ninety-two percent of sources used for this literature review were published between 2019 and 2023. In Table 1, I present a summary of literature resources.

Table 1

Summary of Literature Review Sources

Reference type	<5 Years	>5 Years	Total
Peer-reviewed journals	216	6	222
Non-peer reviewed journals	4	0	4
Books	7	0	7
Government or corporate sites	2	0	2
Total	225	6	235

Transformational Leadership Theory

Burns first proposed the transformational leadership theory in 1978 and focused on charismatic qualities such as determination, self-confidence, vision, and moral uplifting. Transformational leadership involves inspiring personnel to work devotedly toward corporate goals (Bass, 1985; Faupel and Süß, 2019). Transformational leaders influence subordinates to achieve superior performance by demonstrating integrity and fairness (Bass, 1985). The four aspects of transformative leadership are idealized influence, charisma, inspirational motivation, intellectual stimulation, and individualized consideration (Northouse, 2019). Idealized influence is a leader's ability to convince followers and be a role model to subordinates (Bass, 1985). According to Northouse (2019), individualized consideration is the extent to which leaders mentor their followers to meet their needs. A leader who inspires employees by challenging preconceived notions about achieving personal and organizational objectives is said to exhibit

inspirational motivation. Furthermore, intellectual stimulation involves leading by inspiring others to solve problems in a new way and renewing one's perspective.

Global integration of the business world has led to increased competition, compelling organizations to innovate because of threats from startup companies which are gaining market share. Organizations need to understand the influence of leadership on diffusion of innovation to adopt intellectual stimulation, supportive leadership, and personal recognition (Carreiro & Oliveira, 2019). Schuckert et al. (2018) explained intellectual stimulation involves fostering employee creativity and innovativeness. Transformational leaders pay attention to each employee by directly listening to issues their workers are facing and helping those individuals (Faupel & Süß, 2019). Transformational leaders improve organizational performance by working closely with team members to identify and implement necessary changes (Northouse, 2019). To increase productivity, managers should strive to identify individual skills and assign tasks accordingly to ensure alignment with organizational goals and objectives.

An organization's management leadership style influences overall culture, which is crucial to implementing proposed change strategies. Transformational leadership involves realigning executive power and introducing innovative processes and practices inside organizations (Northouse, 2019). Transformational leaders connect the vision of a business and objectives with personal standards of workers (Zhu et al., 2019). Transformational leaders rely on personal worth rather than external criteria to determine how much to pay employees and use internal resources (Watts et al., 2019). Transformational leaders increase employee satisfaction and reduce turnover by

motivating followers to align their goals with and organizational objectives (Zhu et al., 2019). Transformational leaders exhibit traits such as motivation, mentorship, and conflict resolution.

Supply chain leaders can use transformational leadership to motivate employees to be innovative and increase organizational productivity and long-term sustainability. Organizational leaders operationalize dynamic capabilities within their organization to drive innovation and increase profitability (Schoemaker et al., 2018). Tian et al. (2018) encouraged managers to foster collaboration that builds team spirit, leading to synergy in terms of innovation and increased efficiency. Lack of team spirit leads to lack of motivation, and transformational leadership styles positively influence innovation (Tian et al., 2018). Organizational leadership involves increasing employee engagement and innovation to gain competitive advantages. Sulieman (2018) contended organizational transformational leadership styles positively influence change management initiatives. Leadership style is vital to successful change implementation resulting in employee innovation, motivation, and productivity in terms of achieving competitive advantages.

Individual Consideration

Organizations achieve higher production outputs through leadership styles that promote innovation. Individualized consideration includes growing followers through coaching, mentoring, and teaching (Nguyen et al., 2019). Leaders who exhibit inspire team members have great concern for their followers, respect them as individuals, learn as much as possible about them, and pay attention to their ideas and worries (Northouse, 2019). Prabowo et al. (2018) defined individualized consideration as the core

transformational leadership behavior that involves recognizing people as a vital part of the business. Leaders pay meticulous attention to requirements of the workforce and teach employees to bring about long-term sustainable change (Prabowo et al., 2018). Notably, leaders who pay attention to their subordinates indicate they care about their long-term development.

The consideration of each follower on an individual level is the first characteristic of a transformative leadership style. Leaders who are open-minded, emotionally intelligent and accommodate employees' aspirations contribute to the success of organizations (Puni et al., 2018). Leaders who communicate clear objectives and openness to new ideas from each member increase operational efficiency and effectiveness (Puni et al., 2018). Coaching enables employees to achieve improved performance and satisfaction, reducing employee turnover (Yin et al., 2019). Leaders who engage in the practice of individual consideration portray the unique qualities of each employee.

Coaching is the optimal setting for investigating novel approaches and formulating action plans while maintaining support and feedback. Mentoring involves leadership development as well as forming connections, managing company politics and cultures, and communicating effectively with workers (Prabowo et al., 2018). Workers who buy into change are less resistant when involved, recognized, and appreciated (Prabowo et al., 2018). Nguyen et al. (2019) opined that leaders should support and acknowledge followers' contributions. Individualized consideration linked to performance may aid leaders in making their followers aware of actions' that influence

the business's core values (Nguyen et al., 2019). Leaders should align employees' personal goals with overall business goals to gain competitive advantages.

Intellectual Stimulation

Individuals who follow leaders are stimulated and encouraged to be creative. Intellectual stimulation refers to the degree to which transformative leaders question prevailing beliefs, take calculated risks, and actively seek out thoughts and opinions of their followers (Alqatawenah, 2018). Transformational leaders identify followers by stimulating creativity, invention, and originality. Business managers recognize their followers through simulation, preconceived notions, calculated risks, creativity, innovation, and collaboration that fosters creative and independent thinking (Alqatawenah, 2018). Leaders foster and cultivate individuals who are capable of independent thought. Transformational leaders consider unexpected problems and losses as educational resources; hence, learning is a focus for such leaders (Boukamcha, 2019). Followers reflect deeply, ask insightful questions, and search for ways to enhance how their coworkers carry out their tasks.

Leadership style concerns organizational behavior and leadership, which is critical to sustaining competitive advantage. Intellectual stimulation promotes critical thinking and problem-solving skills to improve the group and organization (Jensen et al., 2020). Transformational leaders are constantly teaching, illustrating, promoting, and soliciting fresh and inventive ideas for problem-solving from everyone in the organization (Northouse, 2019). Leadership style influences the effort subordinates exert as the actions instill trust in their followers and build confidence in the leader (Poghosyan

& Bernhardt, 2018). An intellectually stimulating leader can distinguish, understand, reframe, and convey to affiliates possible opportunities and threats to the organization and their capabilities and weakness (Purwanto & Juliana, 2022). Transformational leaders tend to encourage followers to look for new approaches to solve issues, assess circumstances, and critically examine long-held beliefs (Purwanto & Juliana, 2022). Transformational leaders allow followers to pursue intelligent solutions to problems, analyze situations, and skeptically dispute deeply established opinions (Purwanto & Juliana, 2022). Developing a firm's leadership style may promote innovation and increase organizational effectiveness and profitability.

Leaders achieve competitive positioning by exhibiting behaviors that increase employee motivation. Leaders provide intellectual stimulation and workers' creative output by challenging the typical beliefs of a group and encouraging the team to perform better (Alqatawenah, 2018). The transformational leadership style involves challenging employees and motivating them to look for unique approaches to perform their jobs. Innovation is what leaders of successful high-growth organizations see as the primary driver of growth in companies (Boukamcha, 2019). According to Boukamcha (2019), the cornerstone of innovations involves the organizational ability to identify market possibilities and increase sustainability. Leaders who provide intellectual stimulation inspire staff to think creatively, examine challenges from various perspectives, and search for innovative and more effective solutions to problems using technology (Alqatawenah, 2018). To meet new demands and remain competitive, leaders must differentiate themselves from competitors via leadership strategies.

Assessing leader style is essential in achieving organizational objectives. Findings from a research study on intellectual stimulation leadership demonstrated a significant association between intellectual stimulation leadership and the motivation and commitment of workers (Alqatawenah, 2018). Employees were more committed to their jobs and experienced less stress when managers used intellectual stimulation (Jensen et al., 2020). Employees achieve higher levels of commitment and motivation through intellectual stimulation and transformational leadership (Poghosyan & Bernhardt, 2018). Supply chain managers should understand links between intellectual stimulation, innovative ideas, and successful supply chain management implementation. Intellectual stimulation involves generating new ideas and improving supply chain management performance (Purwanto & Juliana, 2022). Business managers must be upbeat and coachable and strengthen their leadership skills to influence their followers to look towards goals.

Inspirational Motivation

A transformational leader develops a vision that is appealing to followers. Inspirational motivation in leaders enables followers to create high standards of operations, communicate effectively on their goals, and give meaning to their tasks. Inspirational motivation significantly impacts employee performance via exercising individual care and motivation (Top et al., 2020). Employee motivation depends on the sense of purpose that drives employees to achieve organizational objectives and personal goals.

Inspirational motivation involves understanding the distinction between intrinsic and extrinsic motivators and inspiring people to achieve personal goals. Intrinsic motivators include pursuits that provide a sense of personal fulfillment and satisfaction (Shaheen et al., 2019). Leaders encourage team members to commit to their corporate vision by raising team spirit and fostering community and a sense of purpose, resulting in increased employee internal contentment. Extrinsic motivation involves relying on an external reward system such as a bonus, promotion, award, or prestige (Siangchokyoo et al., 2020) The primary goal of business leaders should be to understand team member plans and tailor motivational strategies accordingly to increase employee satisfaction.

Idealized Influence

A transformational leader exhibits idealized influence by serving as a role model in organizations. Organizational leaders have high standards that followers respect, resulting in trust building. Transformational leaders prioritize needs of their followers over theirs to help them be the best versions of themselves (Asbari, 2021). They are trustworthy and ethical and refrain from abusing positions of authority for personal benefit, attracting followers to emulate leader characteristics (Prabhu & Srivastava, 2022). Transformational leaders promote confidence that leads to improved employee performance, commitment, and overall organizational effectiveness.

Related and Contrasting Theories to Transformational Leadership Theory

Business leaders design their supply chain to influence the total cost by integrating their value chain to foster collaboration. Organizational leaders incorporate people, processes, and policies into their operations to meet societal pressures (Luthra &

Mangla, 2018). The transformational leadership theory is the conceptual framework for this study. I reviewed transactional leadership and laissez-faire leadership theories as contrasting theories as related theories to transformational leadership theory.

Transactional Leadership Theory

A transactional leader focuses on the exchange that occurs other than employee development. Max Weber 1947 proposed the transactional leadership approach, and in 1981, Bernard Bass adopted the term as a leadership approach for managers. Transactional leaders motivate and direct their followers' using approaches that appeal to their self-interests (Chen & Zhang, 2021). Organizations give transactional leaders the power to lead their followers to achieve organizational obligations. Prabhu and Srivastava (2022) refer to the transactional leadership approach as the expressive leadership style that instructs followers to follow the leader's directions. The contingent rewards influence the exchange between the leader and followers, active management through exception, passive management by exception, and laissez-faire (Northouse, 2019). The transactional leadership process involves controlling and managing operations to achieve short-term goals.

A transactional leader gets rewarded for achieving a particular goal and clarifying their expectations to their followers. Transactional leaders also provide their followers with all the necessary resources and jointly set goals they should meet to achieve the reward (Mokhtar et al., 2019). Transactional leaders are keen to develop specific, measurable, attainable, realistic, and timely (SMART) goals that their subordinates will achieve. A supply chain manager that exhibits a transactional leadership style of

management identifies the area in the department requiring a change through innovation and motivates the followers to be innovative towards developing a solution for the problem.

Active management by exception is the condition where transactional leaders strictly follow up with their subordinates to ensure they follow all set rules and regulations. The transactional leader would present the followers with the innovation to solve the problem (Northouse, 2019). Employee reward facilitates the faster development of a solution as the followers compete to develop the most effective innovation (Alrowwad & Abualoush, 2020). The transactional leader uses the reward as an incentive to persuade the followers to accept the challenge aiming at the price. If a follower deviates from the rules and regulations, the transactional leader will apply corrective measures to prevent a repeat of the mistakes (Mokhtar et al., 2019). The transactional leadership approach contradicts the attitude of transformational leaders who give their followers autonomy.

Passive management by exception is where transactional leaders intervene when their followers fail to meet the set standards of operation. Transformational leaders motivate their followers to think through ways of improving the output quality, while transactional leaders punish their followers for their lower performance (Chen & Zhang, 2021). A transactional leadership style does not promote innovation, as the employees would hold back their need to be innovative for fear of failure (Prabhu & Srivastava, 2022). Organizational leaders use transactional leadership approaches such as punishment and reward to correct and motivate their followers to generate mutual gain (Northouse,

2019). The exchange process between the follower and the transactional leader allows the firm to achieve its objectives as each party acquires its interests (Mokhtar et al., 2019). Transactional leaders subject their followers to taking personal responsibility for the losses they cause the organization.

Laissez-Faire Leadership Theory

The laissez-faire leadership style is like transformational leadership with the characteristic of building trust and relying on employees by giving them autonomy to increase creativity and achieve their goals. The laissez-faire leader must be more responsive and active in situations requiring superiors' involvement by avoiding decision-making (Nielsen et al., 2019). The laissez-faire leadership style is the least effective management style, as the absence of decisions and interactions with the leader violates the followers' expectations (Robert & Vandenberghe, 2020). Vital relational employees may have a negative attitude towards their managers and organization, which affects the quality of exchange relationships between employees and leaders (Alrowwad & Abualoush, 2020). The laissez-faire leader builds a relationship and encourages their followers to change.

In the laissez-faire leadership style, the leader delegates work and hands off by allowing members to make the decisions. The laissez-faire leadership style could be effective if managers check in on employees' work performance and provide regular feedback (Robert & Vandenberghe, 2020). Laissez-faire leaders offer limited problem-solving guidance, performance feedback, or work improvement intervention leading to role conflict, increased stress, and low job satisfaction (Donkor & Zhou, 2020). The

laissez-faire leadership style is helpful to managers in creating their leadership style in an organization that motivates and encourages the employees to be more efficient and creative (Arif & Akram, 2018). Successful change initiative requires strategic planning, execution, and employee participation, and a lack of strategies may inhibit adoption within the organization.

Laissez-faire leaders leave their followers to make decisions independently. In the laissez-faire approach, the leaders abdicate their responsibility and leave their followers to run the affairs of the organization without a sense of direction (Robert & Vandenberghe, 2020). The laissez-faire approach contradicts transformational leadership since a transformational leader is a coach who guides the followers on how to operate. Transformational leaders always advise their followers to achieve the set goals (Mokhtar et al., 2019). Laissez-faire leadership influences followers and encourages personal growth, leading to an increase in motivation and job performance.

Leadership Effect on Organizational Performance

Leadership quality is one of the most critical variables that could influence the outcome of any company's endeavors, as firms rely on leadership skills to drive innovative teams. Globalization gave rise to technological advancement and change in consumer buying behavior, causing organizations to respond rapidly to change and remain competitive (Zekhnini et al., 2020). Teamwork is essential to a firm's success; hence, the need for leaders to plan, organize and monitor creative teams tasked with idea generation, exploration, and experimentation (Super, 2020). Team members acquire

knowledge through learning, knowledge-sharing, and integration to achieve innovative outcomes.

Leadership style reflects how an individual directs and inspires others to work toward the organization's accomplishment. Al Khajeh (2018) examined the influence of leadership styles in organizations and posited that democratic, transformational, bureaucratic, and autocratic leadership styles positively impact organizations' performance. Charismatic and transactional leadership styles do not give employees opportunities and autonomy (Al Khajeh, 2018). Leadership style is an amalgamation of many features and personality quirks that leaders use to build relationships with team members (Chen et al., 2021). Organizational management strategies that are dynamic and open to change are critical to successfully implementing innovative technology and products, leading to higher productivity and competitive advantage.

Organizations strive to incorporate transformational leadership in a fiercely competitive environment. Yang and Yang (2018) advised firms to adopt product and process innovation to pursue a new market for long-term sustainability and argued that transformational leadership significantly facilitates explorative innovation. According to Naidoo et al. (2019), rewards, resources, and leadership vision are the three latent leadership variables that positively relate to innovation. Organizational attributes consist of leadership that supports innovative activities. Transformational leadership cultivates connections and interactions that promote followers' creativity (Nandasinghe, 2020). Research shows that a transformational leader highlights followers' consciousness about the value and method of achieving the desired outcome.

Transformational leadership emphasizes creating highly desirable expectations for followers and motivating them to recognize further possibilities in their workplaces. Goal setting directs most human activity that transfers the need to encourage and drive individual efforts toward the objectives (Nandasinghe, 2020). Leadership strategies improve organizational outcomes and performance by establishing supply chain management practices (Para-González et al., 2018). Leaders of firms communicate clear goals and motivate teams to attain personal and corporate objectives.

Human resource professionals recruit individuals with traits that align with the organization to achieve higher performance. Leaders' behaviors affect employees' performance, trust, job satisfaction, and growth in the business atmosphere (Chen et al., 2021). Leadership is essential to every business, and the roles and responsibilities are getting more complex (Chen et al., 2021). Leaders can alter overall leadership styles to ensure improved results (Chen et al., 2021). Firms provide training programs for employees to overcome organizational and environmental difficulties.

The level of success achieved in an organization correlates with the management approach utilized. Al Khajeh (2018) found a correlation between the kind of leadership style and the corporate culture and performance. Ahmad and Karadas (2021) presented a connection between leadership and the state of the organization. The importance of leadership in achieving organizational objectives has resulted in a significant amount of management research. Consequently, researchers and scholars have developed many theories to justify how leadership makes management procedures seamless.

Leadership Strategies

Managers adopt multiple leadership strategies to optimize their supply chain operations. According to Hashmi et al. (2018), quality leadership involves implementing new and relevant technology to boost employee morale, increase organizational performance, and encourage firms to develop leadership skills. Leadership styles include autocratic, transactional, bureaucratic, charismatic, transformational, democratic, and laissez-faire leadership. Authoritarian leadership is also called the authoritative leadership strategy. Autocratic leaders have all the power and authority, resulting in a directive style (Adnan & Valliappan, 2019). Uslu (2019) referred to the autocratic leader as directive; without consulting team members, the manager solely decides the operations' policies. Authoritarian leaders may have authoritarian, benevolent, and incompetent personalities (Kibbe, 2019). Leadership styles refer to how leaders influence subordinates to achieve organizational goals and objectives.

The benevolent autocrat is a positive kind of autocrat who uses their power and authority positively. The strict autocrats influence their subordinates to follow them by threatening, instilling fear, criticizing, and imposing penalties for failure to comply to set rules and regulations (Northouse, 2019). Although autocrats possess massive powers, benevolent autocrats lead by encouraging, motivating, and guiding their subordinates to follow their idea (Kibbe, 2019). By contrast, incompetent autocrats have insufficient leadership skills and hide their weaknesses in their power. Managers achieve a faster decision-making process and increased motivation with unchallenged powers (Kibbe, 2019). The autocratic leadership style results in higher employee turnover due to a lack of

motivation and inclusion (Uslu, 2019). Autocratic leaders use excessive power and authority to control their subordinates' actions, which sometimes become chaotic and destroy their relationships with their juniors.

Organizational managers adopt a transactional leadership style to control, organize and achieve short-term goals. Transactional leaders use rewards and penalties to control their followers, as employees who follow instructions are rewarded, while those who oppose the rules get punished (Northouse, 2019). Bureaucratic leadership is a leadership approach that follows specific rules and regulations that direct the employees' actions. Government organizations use a bureaucratic form of governance to ensure job security and stability (Adnan & Valliappan, 2019). Organizations with a bureaucratic form of management could be more efficient with more extended change implementation timelines due to the necessary approval process, which may hinder creativity and innovation among employees based on their defined roles (Uslu, 2019). The transaction exists between the leader and followers to achieve the organizational goal as employees focus on the reward.

Charismatic leadership is the leadership strategy whereby leaders strive to influence their followers. Uslu (2019) explained that charismatic leaders have high communication skills to persuade their followers to buy their ideas which are crucial to organizational success. Charismatic leaders encourage teams to collaborate and develop a sense of belonging, leading to long-term sustainability (Adnan & Valliappan, 2019; Vasilescu, 2019). A charismatic leadership style may cause the leader to be self-centred

by drawing employees toward their interests instead of considering the organization's interests.

Technological Innovations for Supply Chain Managers

Business managers face the challenge of analyzing the complexity and uncertainty of the economic systems due to supply chain disruptions. The effectiveness of managers depends on the comprehension of strategic positions, values, experiences, and personalities of leaders driving employee behaviors (Dubey et al., 2019). Organizations achieve superior performance through employee motivation linked to leadership (Yildiz & Sezen, 2019). Organizations attain business sustainability by integrating advanced technology and human resources (Hashmi et al., 2018). Cloud computing, 3D printing, advanced analytics, blockchain, radio-frequency identification (RFID), and the internet of things (IoT) have transformed the business models and reviewed the role of 5G technology in the digitalization of the supply chain while exploring the barriers to procurement (Attaran, 2020). Information technology helps organizations improve operational efficiency and productivity by optimizing manual processes leading to a faster turnaround time.

Technological innovation strategies such as continuous improvement allow organizations to optimize current processes, thereby reducing costs and increasing productivity. Globalization increased competition due to changes in consumer preferences and technological advancements, compelling firms to respond rapidly. Business leaders, technology suppliers, and policymakers ought to understand the factors influencing the adoption, management, and use of ICT resources to gain a competitive

advantage (Yunis et al., 2018). Information technology is critical to maintaining a firm's capability and competitiveness, which determines its future growth and sustainability (Shou et al., 2021). Industry 4.0 encompasses a variety of technologies and processes for achieving an autonomous, dynamic, flexible, and accurate production system (Da Silva et al., 2018). Supply chain integration with information technology provides new opportunities for the industry in various market sectors.

Innovative technology enables supply chain organizations to optimize their picking process by configuring thresholds that trigger system-directed replenishment and improve inventory accuracy with a quality check process that reviews inventory. Firms integrate their business operations with innovative technologies such as information technology, lean agile management, big data application, and blockchain technology to build a sustainable supply chain (Mangla et al., 2020). Organizations adopt innovative technologies, such as the internet of things, big data, warehouse management system, and transportation management system, to gain a competitive advantage. Sahara and Aamer (2021) contended IoT based warehouses provide firms with real-time visibility of integrated data resulting in prompt response and decision-making processes that optimize operations. Integrating innovative technology would help organizations gain enhanced operational performance and customer satisfaction.

Employees have better lives, and firms achieve higher productivity with an improved and optimized supply chain process that automates obsolete manual processes resulting in faster delivery of goods and customer satisfaction. Consumer buying behavior changed because innovative technology forced firms to enhance cross-border e-

commerce to gain a competitive advantage (Yu et al., 2021). By aligning supply chain management with big data analytics, business leaders would significantly impact innovative development in their organizations (Bag et al., 2020). The supply chain design is vital to achieving competitive advantage and long-term sustainability. Firms deploying technology without adequate employee training may result in user error, affecting the quality of the output, hence the need for organizations to train employees on the tools required to carry out their job.

Supply chain innovation is crucial to a firm's survival, hence the need to adopt new technologies. Technological innovations positively affect internal operations, postponement, and strategic supplier partnerships, and firm leaders should adopt strategies to build internal competency to improve their supply chain (Lee et al.,2018; Lee, 2021). Supply chain organizations collaborate with stakeholders and leverage data analysis to build efficient systems and develop superior capabilities.

Organizations with an international presence need help to improve sustainable outcomes in global supply chains. Changes in demand patterns, competition, and pressures from the government have highlighted the importance of integrating sustainable development with supply chain management (Sánchez-Flores et al., 2020). Technology advancements affect logistics and supply chains, hence the need to implement innovative technology solutions that provide visibility and connectivity in the supply chain (Zekhnini et al., 2020). Leadership skills in supply chain management drive technology adoption to handle performance issues.

Organizations should adopt appropriate technologies to remain competitive in the global market. Technology has significantly improved the effectiveness and efficiency of supply chain operations (Sánchez-Flores et al., 2020). Effective supply chain technology should connect the present data to past information to facilitate accuracy in predicting the most profitable action (Zekhnini et al., 2020). Supply chain technology is essential since it enables the participants to gather and access critical information more easily. Supply chain managers use technology to access information to manage their operations by reviewing consumer buying behavior data effectively (Gurtu & Johny, 2019). Business leaders use technology to simplify inventory management with access to inventory status from handheld devices such as mobile phones and tablets. Effective supply chain organization includes managing executive orders, transport, inventories, networks, and workforce (Blossey et al., 2019). Technology enables supply chain managers to have timely and accurate information that allows them to respond to emerging issues that might disrupt the department's operations.

Firms should leverage technology to have more visibility of the entire supply chain process to make strategic decisions. The decision support system is essential for churning data and performing timely simulations for multiple solutions. A successful supply chain organization connects systems and technology to generate information relevant to managers in decision-making (Rejeb et al., 2019). Firms could leverage technology to increase agility by recommending effective strategies that increase profitability. Technology leads to synchronization that promotes collaboration across its

value chain to achieve cost savings, inventory management, and competitive advantage (Blossey et al., 2019).

Supply chain consumers expect up-to-date information and travel history of their orders to ensure on-time delivery. Supply chain technology helps firms overcome the challenges of the Omni channel resulting in increased customer satisfaction (DiVaio & Varriale, 2020). The increasing demand for agility has enabled firms to leverage supply chain technology to increase visibility, accuracy, and agility for long-term sustainability. The supply chain industry has a wide range of technologies that managers could adopt to increase efficiency and effectiveness in their operations. These technologies include the internet of things (IoT), blockchain, artificial intelligence, robots, automotive technologies, and 3D printing.

Internet of Things (IoT)

The IoT has undergone a massive transformation to accommodate operations in different fields of society. In supply chain management, supply chain managers benefit from the IoT to manage the finished goods, facilitate the shipping of computers, and control the operations in warehouse stations (DiVaio & Varriale, 2020). Supply chain managers use IoT to improve traditional supply chain activities, which enables managers to improve communication and deliver insight more effectively and efficiently. Business managers use IoT to support manufacturing operations by increasing efficiency in managing the organization's assets, setting the transportation pace, improving freight monitoring, and increasing accuracy in fleet management (Rejeb et al., 2019).

Supply chain managers use IoT to track fleets' locations, predict weather conditions, identify the environmental status of the customer, and assess traffic patterns. IoT enables supply chain managers to find misplaced inventories and missing shipments to reduce the financial impact (Rejeb et al., 2019). Supply chain managers could use IoT to determine the status of their preservation equipment to avoid failures that negatively impact the organization shortage (Mostafa et al., 2020). Implementing IoT in a warehouse management system enables organizations to achieve increased efficiency and prevent counterfeiting and inventory shortage (Mostafa et al., 2020). Successful organizations leverage IoT to improve their competencies and business strategy, differentiating them from competitors.

Firms integrate IoT with business and knowledge resources to create capabilities and strategies which increase competitive advantage. Supply chain managers use IoT to eliminate cyber security risks and equipment and stock protection (Rejeb et al., 2019). IoT integrated into a firm's supply chain ensures the safety of goods, optimizes operations that prevent counterfeiting and increases the reliability and accuracy of the picking process (Mostafa et al., 2020). Integrating the IoT in warehouse operations involves identifying the critical components for data integration to improve warehouse operations (Sahara & Aamer, 2021). The IoT technology provides supply chain managers with proactive information that triggers required maintenance to the appropriate unit.

Blockchain

The blockchain is a cryptocurrency technology that helps improve visibility and transparency through supply chain processes. Business managers leverage blockchain

technology to facilitate tracking vital records across the supply chain to prevent leakages, help identify counterfeit products at risk suppliers, and ensure adherence to legal requirements (Rejeb et al., 2019). Blockchain technology for operations management focuses on decision-making processes in supply chain management for increased performance (Di Vaio &Varriale, 2020). Blockchain technology promotes industry cooperation by reducing fragmentation, inefficiency, and uncoordinated operations, thereby allowing the flow of information (Rejeb et al., 2019). The critical property of blockchain is immutability, meaning that the data is not erasable.

Blockchain facilitates the development of audit trails which are more effective than the traditional auditing styles of examining emails and a few simple electronic records. Distributed ledger technology enables the supply chain manager to manage a vast range of transactions that facilitates accurate tracking of goods sent to the customers (Gurtu & Johny, 2019). With blockchain technology, supply chain management entered the big data era disrupting the industry by transforming global and local supply chains with improved efficiency, data management, and smart contract management (Dutta et al., 2020). Organizations are investing in blockchain technology to explore new applications to achieve higher operational efficiency.

Artificial Intelligence

The modern supply chain contains a large amount of valuable data that enables managers to gain sufficient insight into the global supply chain. With artificial intelligence, machine learning, and predictive analytics, warehouse operations could improve supply chain business significantly. Artificial intelligence automates warehouse

operations and increases customer satisfaction through proactive inventory management, improved delivery time, and building strategic sourcing relationships (DiVaio & Varriale, 2020). Researchers have identified the direct and indirect effects of artificial intelligence, supply chain resilience, and supply chain performance in supply chain dynamism and uncertainty (Belhadi et al., 2021). Before adopting technological innovation, supply chain business leaders need help to gather insights to make an informed decision. Globalization gave rise to vast amounts of data that managers utilize to improve the performance of supply chains. Organizations achieve cost advantage through predictive analytics that optimizes product intelligence (Rejeb et al., 2019). Artificial intelligence and machine learning utilize vast data with complex algorithms to help supply chain managers run multiple transportation plans in different directions.

Robots and Automation

Robot technology has disrupted the supply chain industry by replacing human resources to increase efficiency and optimize warehouse operations. Supply chain managers leverage automated technologies for completing tasks such as receiving, picking, and packaging relationships (DiVaio & Varriale, 2020). Supply chain managers integrate robots into their operations to reduce human errors and increase collaboration with human resources to increase warehouse capacity by 20% (Blossey et al., 2019). Supply chain managers leverage robots to collect, sort, move, and store products within warehouse operations.

3D Printing

Organizational leaders use 3D printing technology to satisfy customers' desire for personalized products. The 3D printing technology enables supply chain managers to decentralize production to facilitate the production of similar products at the local assembly points (Blossey et al., 2019). 3D printing eliminates geopolitical risks, lowers the carbon footprint, and reduces outsourcing-related tariffs (Gurtu & Johny, 2019). 3D printing helps organizations meet high consumer demands through optimized cost savings.

Supply Chain Process and Management

Supply chain organizations deploy technology to change products, services, and business processes that increase competitive advantage. Supply chain businesses achieve competitive advantage through cost or differentiation integrated with a reliable value chain and information technology (Tavana et al., 2022). Supply chain management entails designing, planning, executing, controlling, and monitoring the supply chain activities for value creation, competitiveness, advantage, and syncing supply with demand while evaluating global performance (Muhlroth & Grottke, 2022). Supply chain organizations should consider standardized management systems to increase efficiency and effectiveness with innovative outcomes (Zimon et al., 2019). Digital transformation of the supply chains enables organizations to foster collaboration between internal and external systems and organizations (Tavana et al., 2022). Supply chain organizations strive to advance their business operations and improve operational efficiency.

Planning by supply chain businesses is critical to managing inventory and manufacturing processes to meet consumer demands while sourcing raw materials for

production. The essential technologies for facilitating the supply chain include big data, data analytics, blockchain, artificial intelligence, machine learning, and the IoT (Tavana et al., 2022). The constantly changing business environment is compelling organizations to integrate with their supply chain partners to share resources and capabilities to gain benefits. Organizations that adopt a supply chain process perspective integrate processes and activities across their supply chain to achieve superior supply chain performance and incredible value creation (Rajaguru & Matanda, 2019). The global change in demographics and trends has led to advancement in technological innovation, forcing firms to implement strategies that meet stakeholders' needs.

Supply chain management involves integrative management of firms' operations, logistics, procurement, and information technology. Efficient supply chains require transactional relationships with suppliers and employees who plan, are reliable, and are efficient in developing standardized products integrated with technology (Srinivasan et al., 2021). Firm investment in emerging technologies gives leaders access to information, reduces costs, and increases collaboration and the quality of products (Agrawal & Narain, 2018). Business entities should design a process that involves strategic sourcing and assessment of every aspect of the supply chain model, such as locations, transportation, resources, and products.

The building blocks of the supply chain process comprise strategic planning, demand planning, supply planning, procurement, warehousing, order fulfillment, transportation process, and manufacturing. Organizations should leverage big data, cloud computing, and the IoT to overcome supply chain challenges. Digital technology helps

improve supply chain visibility leading to modularization, simplification, and standardization of products and processes (Agrawal & Narain, 2018). Supply chain organizations should identify vendors for procuring goods and services efficiently that meet the required production standards.

Strategic Planning

Organizations should meet customer needs efficiently and adaptively to meet the constantly changing market forces. Supply chain sustainability strategies require leadership support, supplier and staff involvement in sustainability initiatives, and a planning process to achieve superior performance (Orr & Jadhav, 2018). Business managers plan strategically to build capabilities that assess and mobilize resources and improve their bottom line and partner relationships. Supply chain inventory shortages may result in lost sales, and overstocking holds up capital; hence managers need to plan accordingly to avoid supply chain disruptions.

Supply chain businesses could utilize technological innovations to plan, sustain, and differentiate themselves within the industry. With the market increasing competition and business expansion, supply chain sustainability leaders should improve strategic planning to prepare for market changes to meet the volatile needs of the different market segments (Donkor et al., 2018; Orr & Jadhav, 2018). Digitalization of the supply chain yields benefits such as greater transparency, better supply chain decision-making, flexibility, and improved asset utilization (Attaran, 2020). Disruptive technology force firms to redesign their supply chain and encourage managers to have discipline, plan, and get commitment from upper management (Attaran, 2020). Businesses establish a

framework for their supply chain operations by considering location and partners when mapping transportation routes, warehouse planning, inventory management, and distribution.

Demand Planning

Supply chain demand planning enables firms to manage inventory and forecast product demand to meet customer needs on time. Organizations improve supply chain performance by incorporating forecasting, which optimizes inventory, reducing the on-hand inventory and enhancing visibility on supply chain costs (Swierczek & Szozda, 2019). Supply chain leaders leverage demand planning to resolve demand and supply issues and design a customer-oriented supply chain using historical data to improve forecasting.

Business managers use supply chain demand planning to lay the foundation for inventory levels and assist firms in achieving accurate forecasts by linking sales inventory and operational planning. The dimensions of demand planning include data management, forecasting methods, performance, organization, and people (Vereecke et al., 2018). Businesses that align supply and demand improve efficiency with better customer service through quantitative forecasting that leverages advanced technologies (Swierczek & Szozda, 2019; Vereecke et al., 2018). The critical task that supply chain managers complete is demand planning, which reviews supply and demand when determining inventory levels.

Supply Planning

Organizations measure supply chain efficiency and effectiveness by delivering the right products at the right time with the least cost. The supply chain plan could enable business managers to achieve accurate inventory levels and minimize costs across the value chain to gain a competitive advantage. Supply chain firms use tactical planning in innovative manufacturing, communication, and production technologies such as the IoT, big data analytics, cloud computing, artificial intelligence, and virtual and augmented reality to achieve a supply chain with intelligence, flexibility, and sustainability (Oh & Jeong, 2019). Business entities engage in supply planning to understand profit potential to build capacity, financing, and stakeholder confidence. Organizations leverage predictive analytics based on historical data to understand consumer buying behavior and factors influencing product demand.

Supply chain managers develop methodologies and leverage technologies in planning to optimize the end-to-end flow of materials, products, and distribution to consumers. Organizations integrate industry 4.0 into their supply chain to increase efficiency, minimize waste, optimize production activities, improve decision-making, intelligent tracking, and assess raw materials (Bedi et al., 2021). Supply chain leaders should understand consumer needs to determine forecasts and estimations that could enhance the supplier relationships needed for long-term sustainability.

Procurement

Supply chain managers spend much time designing the firm's procurement process, which is a vital part of the business. Procurement involves selecting and purchasing the goods and services required to achieve daily business operations that

create value (Kaur et al., 2020). Supply chain organizations gain a competitive advantage with effective supply chain management achieved through the integration of blockchain technology that connects manufacturers, distributors, and service providers within the same decentralized network for a minimal transaction fee (Omar et al., 2021). Supply chain businesses with efficient procurement practices can leverage technology to achieve cost savings from quantity discounts and operational savings.

Companies build integrated stakeholder networks to create value across their value chain and achieve a streamlined procurement process. Firms use procurement as a tool kit to mitigate supply chain risk during disaster relief operations and achieve competitive advantage in the volatile market (Kaur et al., 2020). Business organizations can increase profitability through an efficient procurement process achieved through technology that automates, track, and reduce costs. Supply chain businesses keep up with market leaders and small and emerging eCommerce companies by automating their warehouse supply chains using robotics and warehouse management systems with built-in warehouse execution systems (Kaur et al., 2020). Supply chain distribution companies use complex warehouse management systems (Zunic et al., 2018). The warehouse management system offers visibility into inventory to supply chain managers and manages fulfillment operations from the distribution center to the stores or end users. Supply chain managers should review the proposed technology going into their supply chain for user acceptance and reduced dependency on international suppliers (Rapciewicz et al., 2021). Supply chain managers could use warehouse management systems to optimize resources and support the need of the global supply chain.

A reliable business operation is vital to achieving long-term sustainability, and a business manager could use IT to reduce waste by fostering collaboration between business partners. Supply chain managers use innovative technology to improve business practices in their firms. Tarigan et al. (2021) recommended that retailers utilize IT when adjusting business strategies as employee performances improve with adopting IT into a firm's mission, vision, business objectives, and operating procedures. Remodeling an organization's supply chain through IT increases customer satisfaction; hence, firms should invest in IT as the benefits results in knowledge sharing, collaboration, and reliable demand forecasting, which are crucial to improving profitability (Tarofder et al., 2019). Data from leading logistics and supply chain providers who have successfully implemented a warehouse management system showed that innovative technology allows firms to gain a competitive advantage (Andiyappillai, 2020). Organizations could resolve logistic operations' quality and production problems by implementing a warehouse management system (Assis & Sagawa, 2018). Organizations with sustainable innovation management could quickly increase customer satisfaction leading to high-quality goods and services. Abdallah et al. (2021) explored the impact of supply chain quality management, supply chain agility, and supply chain innovation on supply chain performance. The authors demonstrated that supply chain quality management affects supply chain performance. Kusi-Sarpong et al. (2018) stated that industrial managers with sub-criteria focus on innovative sustainable practices. Supply chain managers might review the financial budget for innovation to foster sustainable supply chain management initiatives.

Businesses integrate information technology into their supply chain to improve efficiency and flexibility. Radiofrequency identification technology increases the productivity of warehouse associates and improves inventory accuracy (Pane et al., 2018). Organizations implemented radio frequency identification and information technology, enabling IoT systems and big data analytics to generate benefits through data collection (Lagorio et al., 2020). Radiofrequency identification technology efficiently controls the selection of goods and modernizes the work process, improving warehouse associates' lives (Pane et al., 2018). Organizations gain opportunities for innovation from strategic management, human resource management, supply chain management, and operations (Momaya, 2019). The dynamic nature of the business environment arose from technological advancement, changes in government policies, consumers changing needs, and competitors' advancement. Understandably, human resources are a source of competitiveness, and invariably, venture capital plays a role in innovation to achieve quality and business excellence.

Business leaders should implement supply chain strategies in response to current market trends, consumer buying behavior, and disruptive technologies, which are crucial for a higher profit margin. Firms implementing a warehouse management system in the manufacturing industry increase operational efficiency and improve quality (Assis & Sagawa, 2018). The results from the literature review indicated a firm focus on employee satisfaction by incorporating agile methodologies that reduce functional conflicts and increase the reliability and credibility of information to stakeholders. Supply chain firms design an automated warehouse management system for tracking, moving, sorting, and

effectively distributing offline products to optimize their inbound and outbound operations through the defined location-allocation and paths (Deng et al., 2018).

Firms achieve competitive advantage through cost or differentiation integrated with a reliable value chain and information technology. Successful warehousing optimization improves employees' lives with better processes, accurate data collection, statistics, location-allocation, and information transmission (Deng et al., 2018). Supply chain businesses could benefit from warehousing by increasing productivity, cost savings, and employee satisfaction when implementing a warehouse management system (Andiyappillai, 2020). When implementing a warehouse management system, business managers should closely monitor the project timeline, precise business requirements, system audits, and user training (Deng et al., 2018). Firms deploying technology without adequate employee training may result in user error, and safety concerns might affect output quality.

Transition and Summary

Section 1 contains the background of the problem, problem and purpose statements, nature of the study, research and interview questions, and conceptual framework. Section 1 also contains operational definitions, assumptions, limitations, delimitations, the significance of the study, and an extensive literature review of leadership strategies that influence the adoption of innovative technology in supply chain management, as well as the transformational leadership theory and alternative and contrasting theories. The literature review involved examining technological innovation strategies business leaders have used and showed that organizations gain opportunities

for innovation through influential leadership style, effective communication, and investment in innovative technologies. In Section 2, I describe my role as the researcher, participants, research method and design, population and sampling, ethical research issues, data collection instruments and techniques, data organization techniques, data analysis, and validity and reliability of the study. Section 3 contains an overview of the study, a presentation of doctoral research findings, applications to professional practice, implications for social change, recommendations for action and future research, reflections, and summary and study conclusions.

Section 2: The Project

In Section 2, I discuss the methodology for this multiple case study that involved exploring leadership strategies supply chain managers use in adopting innovative technology to stay competitive in rapidly changing global business environments. First, I restate the purpose statement and discussed my role as the researcher. Then, I address study participants and eligibility criteria for the selection process. Next, I address the research method and design, population and sampling, ethical concerns, data collection instruments and techniques, data organization techniques, and data analysis. Finally, I conclude Section 2 with a discussion of validity and reliability of the study.

Purpose Statement

The purpose of this qualitative multiple case study was to explore leadership strategies that supply chain managers use in terms of adopting new innovative technology to stay competitive in rapidly changing global business environments. The targeted population was six managers from different supply chain companies in Atlanta, Georgia who successfully used leadership strategies to adopt innovative technologies. Social change implications of this study include providing new strategies to supply chain managers and adopting new technologies to improve consumer welfare. A reliable supply chain with quality output could improve lives of consumers. Supply chain businesses expanding into new markets could increase economic value by creating new employment opportunities for the community, leading to a better quality of life.

Role of the Researcher

Researchers should adequately understand their roles to facilitate research and ensure ethical standards are observed (Cumyn, 2019). The researcher is the primary data collection instrument in a qualitative study and collaborates with participants when conducting research (Moser & Korstjens, 2018). I served as the primary data collection instrument in this study. The researcher is responsible for selecting participants, collecting data through interviews, document reviews and observations, and analyzing data (Merriam & Grenier, 2019). In a qualitative case study, the researcher must accumulate data from multiple sources to form convergent thinking through interviews, evidence, and existing documents (Yin, 2018). As the researcher in this study, my roles included (a) collecting literature materials on leadership strategies and supply chain management, (b) formulating interview questions based on the topic of the study, (c) conducting interviews, (d) transcribing, coding, and analyzing data, (e) presenting study findings, and (f) maintaining ethical standards in human research.

In qualitative research, researchers should explain prior personal or professional relationships between themselves and participants before commencing data collection (Corlett & Mavin, 2018). Relationships between researchers and participants before, during, and after research are critical elements of the research design and outcome (Florczak, 2017). Merriam and Grenier (2019) suggested that researchers should reflect on their relationships, make decisions based on the research design, and ensure connections do not affect research outcomes. I randomly selected participants for this study who did not have prior personal or professional relationships with me. As a project

director in a software company in Atlanta, Georgia, I have implemented multiple software projects in the supply chain sector for over 10 years. I realized supply chain managers' challenges in terms of implementing and integrating new technologies into their businesses. In this study, my primary motivation was to identify how business leaders in the supply chain sector could explore leadership strategies to adopt innovative technologies and contribute to positive social change.

In conducting research that requires interaction with human beings, researchers should take all reasonable steps to ensure study objectives do not take precedence over ethical and moral protection of rights of participants (Collins & Stockton, 2018). The Belmont Report protocol guided my ethical choices in terms of establishing my role as the researcher. Researchers use the Belmont Report to ensure ethical research and protect study participants (Adashi et al., 2018; National Commission for the Protection of Human Subjects in Biomedical and Behavioral Research, 1979). There are three core principles for ethical research: (a) respect for persons, (b) beneficence, and (c) justice (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). I integrated these principles to provide fair treatment and adhered to ethical standards during my interactions with participants.

Personal bias may influence data collection, analysis, and results of qualitative study interviews (Karagiozis, 2018; Yin, 2018). Researchers should clearly state their experiences, biases, and personal interests, which could add value to the research process and help avoid undermining researcher interpretations and propositions (Kaiser et al., 2018; Karagiozis, 2018). Researchers should use identity memo to ensure personal

beliefs and experiences do not influence the research process (Cypress, 2017). Member checking allows participants to be more integrated into research and interview process and increases study validity and credibility (Iivari, 2018). I used member checking to understand meaning of participants' interview data and reduce personal bias during research.

To mitigate bias and avoid the influence of personal experience, assumptions, and beliefs, I recorded participant interviews, and data were collected from company documents for data analysis. I ensured data saturation by continually interviewing participants until no new themes emerged. I avoided personal bias while conducting interviews, observations, and documentary reviews by relying on participants' information and not including my opinions. I used member checking to reduce personal bias and data triangulation from multiple sources in order to minimize the threat of bias.

Researchers use interview protocols to educate participants about the interview process (Peterson, 2019). Interview protocols are essential because they include interview questions in order to extract detailed and rich data and understand participants' experiences (Yeong et al., 2018). Developing interview protocols helps researchers maintain systematic methods to secure information related to research questions (Braaten et al., 2020). Creating an interview protocol ensured consistency from participant to participant. A benefit of the interview protocol is reduction of bias throughout the data collection process. In this study, I used the interview protocol (see Appendix A) to organize the interview process and minimize the possibility of personal bias.

Participants

Researchers should select knowledgeable participants who understand intricacies involving the phenomenon under study (Knechel, 2019). According to Wong et al. (2021), participant selection should depend on exclusion and inclusion criteria set by the researcher, as recruiting and retaining research participants could be challenging. Researchers should have sets of standards for selecting participants based on competencies and suitability for the study (Zong et al., 2021). All six participants in this study were supply chain business managers who had 5 years or more experience, successfully used leadership strategies to adopt innovative technology in a supply chain business, and currently worked in Atlanta, Georgia.

Researchers should ensure they explore various strategies to gain access to target participants for the study (Merriam & Grenier, 2019). I used the purposive sampling technique to gain access to the population for this study. Gaining access to research participants could constitute arduous and challenging tasks that researchers should devise strategies to overcome. Peu et al. (2020) identified the need for researchers to establish contact with constituted authorities, seek consent, and negotiate best ways to gain access to tresearch sites and participants. I gained access to participants through phone calls and emails. After obtaining Walden University Institutional Review Board (IRB) approval, I sent an informed consent form to target participants explaining the purpose of the study and sought their willingness to participate. Qualitative researchers use the purposeful sampling technique to choose participants who can provide in-depth information about the phenomenon under investigation (Moser & Korstjens, 2018). I used a purposeful

sampling strategy to select supply chain managers with requisite knowledge about the study phenomenon.

Building a working relationship with the participants of a study is central to receiving needed cooperation and information from participants (Corlett & Mavin, 2018). According to Yin (2018), relationships between researchers and participants can vary based on each participant. Establishing a working relationship with the participants of a research study is an approach a researcher could explore to encourage openness and sharing of information about the research topic (Kraft et al., 2019). Relationships of trust between participants and researchers are critical to successful research (Guillemin et al., 2018). I created an atmosphere of trust by communicating via telephone and email correspondence with participants. I explained the purpose of the study and how their contributions would expand the existing supply chain management body of knowledge by providing guidelines for success to managers implementing innovative technology. Researchers use the consent form to provide research details and establish a rapport with participants (Riese, 2018). I sent the informed consent form and letter of invitation (see Appendix B) to six supply chain managers at the initial stage of the data collection process to establish a good working relationship.

Research Method and Design

Choosing the appropriate research method and design for a study is critical for a successful research process. The three broad categories of research methods researchers use are qualitative, quantitative, and mixed methods (Abutabenjeh, 2018; Draper et al., 2021). Some qualitative designs include case studies, phenomenological, and

ethnography (Castleberry & Nolen, 2018). I used the qualitative method and case study design for this study.

Method

The three methods researchers use in conducting a research study include qualitative, quantitative, and mixed methods (Draper et al., 2021; Strijker et al., 2020). Using open-ended questions, researchers explore complex phenomena using the qualitative method to gain deeper insights into how individuals view a phenomenon (Busetto et al., 2020; Stutterheim & Ratcliffe, 2021; Yin, 2018). The qualitative approach was appropriate for this study because the intent was to explore the leadership strategies that supply chain managers use to adopt innovative technologies.

Quantitative researchers seek empirical evidence by examining reality using data and mathematical and statistical processes to understand the relationships between variables (Zyphur & Pierides, 2020). According to Aschauer (2021), quantitative researchers seek to identify and define relationships among variables and develop testable hypotheses. In a quantitative study, researchers use statistical tools to analyze data and to ensure the generalizability of study findings and results (Godwin et al., 2021). The quantitative method was inappropriate for this study because I did not intend to test hypotheses relating to leadership strategies and adopting innovative technologies. Furthermore, I did not plan to examine the relationship between variables in this study.

Mixed method research combines qualitative and qualitative methods to complement the other approach (Strijker et al., 2020). The mixing of qualitative and quantitative methods proves more effective in studying complex phenomena because

either technique compensates for the weaknesses of the other (Stoecker & Avila, 2021). Most quantitative researchers may find the mixed methods approach complex, expensive in terms of resource involvement, and time-consuming. In this study, I did not include numeral analysis or hypotheses testing; therefore, a mixed methods approach was not suitable.

Research Design

The research designs qualitative researchers use include case study, ethnographic, phenomenological, and narrative inquiry (Strijker et al., 2020; Tomaszewski et al., 2020). Qualitative researchers use the case study design to explore a phenomenon and to obtain a clearer picture of the research findings (Nilmanat & Kurniawan, 2021). The case study design is a flexible tool for investigation and allows the researcher to explore a phenomenon in a real-life setting (Siedlecki, 2020). I used the multiple case study design for the study. Data obtained using multiple case study designs from various study locations are more compelling and could make case study research more robust than a single case study design (Yin, 2018). For this study, I selected the multiple case study design over the single case study design because the multiple case study design was more appropriate to explore the leadership strategies that supply chain managers use in adopting innovative technologies.

Researchers use the phenomenological design to reveal insights into cases they know about but lack in-depth knowledge about (Yildiz, 2020). The phenomenological design entails participants' lived experiences, the narratives, meanings, and interpretations they ascribe to previous experiences (Engward & Goldspink, 2020). The

phenomenological design was inappropriate for this study because I did not intend to study participants' lived experiences. Researchers use ethnographic research design to explore human social activities and culture-based knowledge through participants' observation (Cubellis et al., 2021). The ethnographic method is suitable for discovering truths about cultural groups within natural settings (Pathiranage et al., 2020). The ethnographic design was not appropriate for this study because the intent was not to observe participants, explore social activities, or investigate cultural issues. Researchers use the narrative inquiry design to make meaning of participants' stories about their experiences relating to the phenomenon (Harper et al., 2020). According to Dibaba (2021), researchers use the narrative design to explore the life and history of individuals. The narrative design was unsuitable for this study because I intended to focus on something other than participants' life stories and experiences.

A qualitative researcher should ensure data sample adequacy to achieve data saturation and ensure the quality of research (Mpofu, 2021; Yin, 2018). Data saturation is the point in the data collection when additional data does not result in new meaningful themes (Guest et al., 2020). The qualitative researcher should demonstrate the attainment of data saturation (Fofana et al., 2020). I achieved data saturation in this study by

1. selecting and interviewing participants with experience in the phenomenon of leadership strategies for adopting innovative technology,
2. continuing the collection and analysis of data from the participants until no new information and no new themes emerged.

3. conducting methodical triangulation by obtaining and analyzing company documents, and
4. adopting the member checking procedure by requesting participants' validation of data interpretation.

Population and Sampling

To achieve a credible research outcome, a qualitative researcher should carefully consider selecting research participants' using a sampling technique that aligns with the research objectives (Yin, 2018). The population of this study consisted of six supply chain business managers with backgrounds and expertise in supply chain management and technology who have successfully utilized leadership strategies to adopt innovative technologies in their businesses. I purposely selected the business managers within the supply chain management industry for this multiple case study to obtain relevant and rich data.

Qualitative researchers should select a sample size for their purposeful sampling to provide relevant knowledge, practices, and experiences that align with the phenomenon under study (Devlin, 2018). Whether the qualitative researcher intends to generalize findings from samples or not, the researcher can select from several random or non-random sampling methods such as random sampling, purposeful sampling, convenience, theoretical, and snowball sampling (Campbell et al., 2020; Sebele-Mpofu & Serpa, 2020). According to Yin (2018), a sample size of between two and 20 participants is appropriate for a qualitative research study. Researchers use the purposeful sampling technique to identify variations in the data, relevant codes, and themes to answer the

research question (Hjertstrand et al., 2021). I used the purposeful sampling technique to select six participants from different supply chain businesses within Atlanta, Georgia, who have successfully used leadership strategies to adopt innovative technologies.

Qualitative researchers ensure data saturation to maintain a significant research quality. Data saturation occurs when information redundancy or no new interpretive meaning occurs based on additional data collection effort (Alam, 2020). I achieved data saturation in this study by selecting and interviewing knowledgeable participants, using methodical triangulation with organizational documents as a second data source, and adopting the member checking procedure by requesting participants' validation of data interpretation. I continued with interviewing process until I achieved information redundancy.

Qualitative researchers should carefully consider the interview setting, whether physical or virtual, to ensure the convenience of participants, respect their privacy, and make their location preferences a clear priority (McGrath et al., 2019; Moser & Korstjens, 2018). Selecting a good interview location in agreement with the participants is essential to the success of interviews and the richness of data collected. Consequently, after obtaining Walden University IRB approval to commence data collection, I approached the participants to choose between virtual and physical interviews and the right timing for each one. I implemented the choice of each participant.

Ethical Research

The researcher should exercise ethical consideration in every research study that involves the human population to protect the rights of the study participants

(Kaewkungwal & Adams, 2019). Ethical research is the researcher's primary responsibility to ensure the protection of participants and a quality research outcome (Davies, 2020; Sivasubramaniam et al., 2021). The Belmont Report of 1979 indicated that researchers should adhere to ethical research requirements, principles, and protocols for a researcher working with human subjects. These include (a) respect for persons, (b) beneficence, and (c) justice (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). For this study, I adhered strictly to the principles and protocols prescribed in the Belmont Report.

The common ethical dilemmas that qualitative researchers experience include (a) anonymity, (b) confidentiality, (c) informed consent, and (d) researchers' bias toward the participants (Chesser et al., 2019). Qualitative researchers should comply with research ethics in conducting studies involving human participants. In compliance with Walden University’s requirement, I completed the online Human Research Participant training and obtained the Collaboration Institutional Training Initiative (CITI) certification (see Appendix D) covering research ethics on human subjects. Before commencing data collection in this study, I applied and obtained Walden University’s IRB approval for this study is 11-17-22-0566335. The IRB approval ensures compliance with the Belmont Report's requirements for human research, especially respect for participants, their protection from harm, and fair treatment.

A qualitative researcher planning to use human participants in an ethical research process should provide intended participants with requisite and adequate information on the research as a basis for deciding whether to participate using the informed consent

form (Axson et al., 2019). Xu et al. (2020) described the informed consent form as a vital tool a researcher could use to gain access to participants. The informed consent form allows voluntary participation choices based on sufficient information that participants would complete and sign. I sent the informed consent form to participants by email and requested them to read and sign it voluntarily if they wished to participate in the study.

Barwise et al. (2019) stated that participants should willingly consent to enroll in a study by signing the consent form only after understanding the associated risks and benefits. The informed consent form contains information on the purpose of the study, incentives, risks and benefits, and the confidential and voluntary nature of the study. A consent form section states that participants can withdraw anytime by sending mail, writing a letter, or placing a call. I started the consent process by sending a letter of invitation (see Appendix B) by email to all the participants to introduce myself and the research objectives. Next, I sent the informed consent form to each participant by email detailing research information, participation requirements, and consent to participate in the study. If the participant decides to be part of the study, I request the individual to sign the informed consent form and return it to me via email. Labib et al. (2018) and Clayton (2020) stated that participants should be allowed to withdraw their participation at any time during the research process. A portion of the consent form contains information stating that participants can cancel participation in the study by sending a mail, writing a letter, or placing a call to the effect. As contained in the consent form, I did not offer a financial incentive to participants but plan to share the final study with each participant.

The researcher has a responsibility to protect participants in a research study. Protecting research participants includes ensuring the privacy and confidentiality of information provided and data storage in a safe and protected place (Antonio et al., 2020). In this study, I ensured the participants' confidentiality by assigning alphanumeric codes such as P1, P2, P3, P4, P5, and P6 to conceal their identities. Similarly, I assigned codes such as C1, C2, C3, C4, C5, and C6 to disguise the identities of the supply chain companies. I securely stored all data collected in my password-regulated computer to ensure data protection and retain exclusive access. I will destroy all data and information after 5 years in compliance with the mandatory retention period.

Data Collection Instruments

In qualitative research, the primary data collection instrument is the researcher, who facilitates the collection of valid and reliable data for the study through interviews, sample observation, and examination of documents (Denzin & Lincoln, 2018). I was the primary data collection instrument for this study. As the primary data collection instrument, I worked to minimize bias and perform self-reflexivity. During the data collection phase, I (a) designed the interview questions, (b) provided an informed consent form to participants, (c) maintained the privacy and confidentiality of research participants, and (d) conducted semistructured interviews.

Qualitative research data include interviews, documentation, physical artifacts, direct observation, archival records, and participant observation (Yin, 2018). Every research study differs from another, and qualitative researchers tend to use a variety of data collection instruments to obtain information, including semistructured interviews

(Aten & Denney, 2019). Qualitative researchers use interviews to explore a phenomenon from the participants' perspective. Semistructured discussions are the most common qualitative data collection technique researchers use to engage participants in a conversation using open-ended questions to seek insights into a participant's experience of a phenomenon (Castleberry & Nolen, 2018; McGrath et al., 2019). I interviewed eligible participants using open-ended semistructured interview questions (see Appendix E) and applied the interview protocol (see Appendix A) for uniformity. Using semistructured interviews for data collection allows the researcher to follow up with probing questions during the interview process and a flexible approach to gaining rich insights into a phenomenon (McGrath et al., 2019). I asked follow-up questions to the participants during interviews to gain rich insights into the leadership strategies that supply chain managers use to adopt innovative technologies.

Using the case study design, the qualitative researcher should review and obtain relevant company documents and archival records to ensure data triangulation (Yin, 2018). Company records serve as rich data sources with varied applications, including primary or secondary data sources, corroborating and validating evidence obtained from other sources, and supporting data triangulation (Siegner et al., 2018). I sought and obtained company documents and archival records during data collection to facilitate triangulation. The archival company documents include change management protocols, IT deployment strategies, peer mentoring plans, and minutes of strategic planning meetings. The main advantages of document analysis are cost-effectiveness and a dependable data source.

Achieving reliability and validity in a research study is critical to the quality of the research outcomes (Huttunen & Kakkori, 2020). Using triangulation improves the credibility and validity of research findings (Korstjens & Moser, 2018). By incorporating member checking, researchers can ensure the proper capturing of the participant's answers to the research question (Johnson et al., 2020). Document reviews support a case study because it allows the researcher to look at relevant information from a historical perspective (Merriam & Grenier, 2019). To ensure the research study includes an adequate amount of quality data, reaching data saturation is a critical component of the research methods (Saunders et al., 2018). To ensure the validity and reliability of the data collection instruments, I ensured data saturation, double-checked the data collected through member checking, and conducted triangulation using multiple sources to collect data.

Data Collection Technique

Qualitative researchers use data collection techniques, including surveys, semistructured interviews, participant observation, site visits, video recording, and review of company archival documents (Brown & Danaher, 2019). The data collection technique a researcher selects plays a pivotal role in reducing the misinterpretation of the responses from the participants (Alam, 2020). Qualitative researchers use semistructured interviews to gain autonomy and explore relevant ideas in the interview in a follow-up questioning session (Adeoye-Olatunde & Olenik, 2021). I used semistructured interviews as the primary data collection technique to formulate answers to the research question that explored the leadership strategies that supply chain managers use to adopt innovative

technology. I interviewed eligible participants using open-ended questions (see Appendix E) and applied the interview protocol (see Appendix B).

An advantage of semistructured interviews is that the researchers can understand the phenomenon under study (Mokgolo & Barnard, 2019). A key benefit of semistructured interviews as a data collection technique is that researchers could develop open-ended questions around predetermined themes, which facilitates flexibility of the discussions and encourages follow-up questions to clarify points the participants made (Barrett & Twycross, 2018). A vital disadvantage of the semistructured interview technique is the potential to introduce bias in the study due to the poor structure of questions (Draper et al., 2018). I contacted the participants through email, telephone calls, and social media channels, such as Zoom, as different techniques to collect data. I emailed the participants an informed consent form to obtain their consent to participate in the research study, followed by a virtual semistructured interview using Microsoft teams and Zoom to collect data for this study. Consequently, I did not conduct a pilot study after IRB approval. I did not use the face-to-face data collection technique as I took advantage of technology that allowed scheduling flexibility for busy participants.

In addition to using the semistructured interview technique to collect data, researchers may collect data from documents and archival records of companies (Yin, 2018). Collecting document resources has the advantage of providing a historical timeline of the company and can offer specific situations that the researcher can explore (Siegner et al., 2018). Document search has the advantage of supporting the researcher to collect detailed information that could help in providing in-depth analysis, thereby contributing

to rich data (Yin, 2018). I collected archival company data such as change management protocols, IT deployment strategies, peer mentoring plans, and minutes of strategic planning meetings to obtain information on strategies supply chain managers use to adopt innovative technologies.

Transcript review and member checking are strategies qualitative researchers use to allow participants to self-review and adjust transcribed materials and the researcher's interpretation to align with the information provided during interview sessions (Slettebo, 2021). Transcript review and member checking are participants' self-confirming activities which help the researcher achieve quality data collection, analysis, and research outcomes (Ellis, 2019). Member checking involves allowing the participants to validate the results of transcribed data or research findings for accuracy and, if necessary, provide corrections to the researcher to achieve accurate information (Brear, 2019). I adopted a member checking process to enhance the validity and reliability of the study by emailing the data interpretation summary to each participant for validation.

Data Organization Techniques

A researcher should ensure proper organization and storage of information and data obtained during data collection (Borycz, 2021). Efficient organization and documentation of data is an essential aspect of the research process for ease of retrieval, protection of data, and confidentiality of participants (Barrett & Twycross, 2018). Data organization involves developing a file naming system, storage protocol, and secured access procedure to ensure ease of retrievability and uphold participants' confidentiality (Bohan & Kellam, 2021). Note-taking and digital recording during interviews and

collecting information from multiple sources enable researchers to effectively manage data and enhance the data analysis process in qualitative research (Denzin & Lincoln, 2018). I followed the guideline on the interview protocol (see Appendix A) containing data organization procedures such as digital recording, note-taking, transcription, and analysis. I used NVivo 12 software to organize data and documents.

I used note-taking and digital recording processes during interviews to collect information from multiple sources to organize and enhance the data analysis process. Researchers should protect participants' identities through labels and coding (Lindlof & Tylor, 2019). I used alphanumeric tags P1, P2, P3, P4, P5, and P6 to identify participants. Using pseudonyms to protect the identity of participants in a qualitative study is an ethical practice and an acceptable research process standard (Yin, 2018). I used pseudonyms to identify participants for this study. The protection and security of data are part of the ethical responsibilities of a qualitative researcher (Drysdale, 2020). Researchers use reflective journals as a pedagogical instrument that promotes their ability to reflect, criticize, and self-analyze (Bashan & Holsblat, 2017). I used the reflective journal to self-analyze and sort out views not aligned with the research data to mitigate any adverse effects on the study. Furthermore, I have safely stored all data collected in a password-protected electronic device. All hard copies of the data collected are held in a confidential file, locked in a fireproof safe, and accessible to me alone. I will destroy both paper documents and electronic data after 5 years.

Data Analysis Technique

A qualitative researcher engages in data analysis to interpret the meaning of the data by identifying patterns and themes to answer the central research question (Denzin & Lincoln, 2018). According to Yin (2018), researchers use different data analysis processes, including triangulation. There are four types of triangulations: (a) data triangulation where data collection is in different periods, (b) investigator triangulation involving multiple researchers, (c) theory triangulation utilizing several theories, and (d) methodological triangulation using more than one data source (Abdalla et al., 2018; Fusch et al., 2018). Researchers use methodological triangulation to enrich and enhance the trustworthiness of data collected by reducing bias, strengthening the data analysis process, and ensuring a deep understanding of a phenomenon (Farquhar et al., 2020; Yarney et al., 2021). In this study, I analyzed data using the methodological triangulation process to increase the credibility of the case study. Methodological triangulation is collecting and analyzing data from more than one source, such as interviews, reviews of archival documents, field notes, and observation (Shrestha & Bhatta, 2018).

According to Yin (2018), a logical and sequential data analysis process consists of five stages: (a) compiling, (b) disassembling, (c) reassembling, (d) interpreting, and (e) concluding. The researcher should take full responsibility for the data analysis process. Hemming et al. (2021) highlighted the obligatory role of the researcher in ensuring a robust data analysis through direct involvement and personal reflection in the process. I collected data from the participants using semistructured interview questions (see Appendix E) and documentary data from company publications, policy and procedure

manuals, and technological innovation documents. I transcribed the field notes into the computer and then imported the collated raw data into the NVivo 12 software tool for analysis. Researchers compare responses from participants to make comparisons in emerging themes with each interview (Barrett & Twycross, 2018). After applying the methodological triangulation process to merge primary and secondary data, I coded the collected data into related themes using NVivo 12 software. I presented data to participants for member checking to ensure authentication and minimize the threat of bias. Finally, I conducted writing of the data results and findings in alignment with the research question and conceptual framework.

I transcribed and analyzed the data from the semistructured interviews for common themes by comparing responses from participants in a hierarchical way to establish a correlation between the conceptual framework, literature resources, and research findings. I used member checking to authenticate the data analysis process. The conceptual framework for this study was transformational leadership theory. Using qualitative data analysis software such as NVivo can significantly increase proficiency in qualitative analysis and assist in managing and analyzing complex data (Bergeron & Gaboury, 2020). Researchers use the NVivo software tool in qualitative research to facilitate coding a large volume of textual data in nodes, showing commonalities among the thematic nodes and organizing data in hierarchical order (Lowe et al., 2018). Using NVivo to analyze data enables researchers to add codes during data analysis to the point of saturation and enhances the reliability of a study (Harif & Hoe, 2018). For this study, I used NVivo 12 software to code, categorize, and build hierarchies of themes that

provided meaningful insights related to the leadership strategies that supply chain managers use to adopt innovative technology.

Reliability and Validity

Reliability in qualitative research refers to the ability to replicate a study and maintain consistency (Saunders et al., 2018). Validity depends on the context and purpose of the study and its findings concerning the methods used to conclude the results (FitzPatrick, 2019). According to Yin (2018), reliability involves a researcher demonstrating that other researchers achieved similar results by repeating the data collection process. Reliability and validity in qualitative studies consist of credibility, transferability, dependability, and confirmability (Nowell et al., 2017; Mendonca-Alves et al., 2019). Qualitative researchers could enhance reliability and validity through data saturation, document review, member checking, reflexivity, and triangulation (Caretta & Pérez, 2019; Madill & Sullivan, 2018; Stenfors et al., 2020).

Reliability

Reliability within qualitative studies relates to the subject(s), and object(s) studied and how they relate to the truth of the findings (Huttunen & Kakkori, 2020). To ensure the reliability of research findings and the analysis provided, researchers should present the data in a manner that demonstrates clarity, coherence, and relevance (Caycho-Rodríguez et al., 2021). Qualitative researchers use dependability to establish reliability (Silverman, 2016). The dependability of research findings in qualitative research could allow the researcher to accurately depict a model dependent on the research results (Aizpurua et al., 2020). A researcher can establish dependability by having multiple

individuals' codes and interpreting the data and annotating the data that they both agreed upon (Marshall & Rossman, 2016).

Dependability

Dependability within qualitative research involves whether the researcher consistently uses prolonged engagement, persistent observation, data triangulation, and member checking (Korstjens & Moser, 2018). Dependability reflects the transparency and accuracy of research procedures, consistency in research methodology, data collection, and data analysis (Tong & Dew, 2016). According to Yin (2018), a researcher can use an interview protocol to record observational data and ensure dependability. Researchers use prolonged engagement to narrow down risks associated with the study and mitigate the risks to ensure reliability (Chemweno et al., 2018). Persistent observation is the least commonly used method of securing the truthfulness of research findings, while data triangulation is the most preferred method (Liao & Hitchcock, 2018). I used the interview protocol to enhance the credibility of the data and establish the reliability of the study.

Member checking involves allowing the participants to validate the results of transcribed data or research findings for accuracy and, if necessary, provide corrections to the researcher to achieve accurate information (Brear, 2019). Data triangulation consists of multiple theories and methods for obtaining numerous data sources to produce a clear and concise understanding of a phenomenon and validate the integrity of the findings (Odiri, 2019). To establish dependability, I used an interview protocol to record data,

double-checked data collected through member checking, and conducted triangulation using multiple sources to collect data.

Validity

Validity in qualitative research refers to the suitability of the research instruments, such as methodology and design, for exploring the phenomenon under study (Yin, 2018). In qualitative research, validity refers to truthfulness in research quality and being justifiable, relevant, meaningful, and well-founded (Cypress, 2017; Dikko, 2016). Researchers define validity as rigorously choosing a suitable research methodology and justifiably applying the preferred method to answer a research question (Collingridge & Gantt, 2019). The critical aspects of validity in a qualitative study are credibility, transferability, and confirmability (FitzPatrick, 2019; Moon, 2019).

Credibility

The credibility of a study depends on the accuracy, consistency, and interconnections of the concepts with research findings (Yin, 2018). Credibility refers to the value and believability of study findings and can be achieved through prolonged engagement and persistent observation to learn the context of the phenomenon (Korstjens & Moser, 2018). A researcher can validate research findings through data verification, analysis, and interpretation to establish credibility and authenticity (Andersen et al., 2018). Multiple sources of evidence, such as triangulation and member checking, are other strategies a researcher may use to achieve trustworthiness and credibility (Ellis, 2019). To ensure credibility, I used semistructured interview questions (see Appendix E) to collect data and member checking to validate participants' responses.

Transferability

Transferability is the extent to which the findings of a qualitative study apply to other contexts, settings, or participants (Denzin & Lincoln, 2018). Transferability is an alternative quality criterion for external validity (Saunders et al., 2019). By using the strategy of thick descriptions, the researcher provides in-depth details of the phenomenon and the methodologies of the study (Cypress, 2017). I provided a detailed description of the research questions, design, context, findings, and interpretations to ensure transferability and establish the validity of the study. I also adhered to the research design's data collection and analysis techniques, used interview protocol (see Appendix A), observed participants, and reached data saturation.

Confirmability

Confirmability refers to the data's neutrality and accuracy (Korstjens & Moser, 2018). Researchers should acknowledge personal assumptions, beliefs, and attitudes when establishing confirmability and defining audit trails (Abdalla et al., 2018). Researchers can achieve confirmability by including in-text citations, quotes, and supporting references in the study while justifying the new findings within the discussion and conclusion of the study (Stenfors et al., 2020). According to Wicaksono et al. (2021), researchers could use thematic data analysis, thick and rich data, blended data, data investigator triangulation, member checking, and audit trails to achieve confirmability. I used data triangulation, member checking, and rich data description to establish confirmability and enhance the study’s validity.

Data Saturation

Reaching data saturation is essential to the qualitative research method to ensure the study includes adequate quality data (Fofana et al., 2020). Researchers achieve data saturation by continuously sampling and analyzing all data associated with the study until no new findings can be identified (Aldiabat & Le Navenec, 2018). The data saturation in a study could enhance the validity and reliability of qualitative research (Cypress, 2017). Guest et al. (2020) found that researchers could reach data saturation after five to six interviews when no additional new information is emerging. In qualitative research, researchers could achieve data saturation through multiple data collection methods such as observations, interviews, and documents review (Denzin & Lincoln, 2018). In this study, I conducted semistructured interviews with the participants until no new themes emerged to ensure data saturation.

Transition and Summary

Section 2 contains the purpose statement, my role as the researcher, and eligibility criteria for participants. Section 2 also includes discussions of the research method, design, population, and sampling procedures. In addition, I discussed ethical research, highlighted data collection instruments and techniques, data organization techniques, and data analysis, and concluded with validity and reliability of the study. In Section 3, I present the research findings, explain how they apply to professional practice, and explain the study's positive social change implications. Section 3 includes recommendations for action and future research, my reflections on the doctoral study process, and summary and study conclusions.

Section 3: Application to Professional Practice and Implications for Change

In this section, I present an overview of the study and presentation of findings on leadership strategies that supply chain managers use for adopting new innovative technologies to stay competitive. I used observations from participants as well as the transformational leadership theory. This section includes applications to professional practice, implications for social change, recommendations for action and future research, reflections, and summary and study conclusions.

Introduction

The purpose of this qualitative multiple case study was to explore leadership strategies that supply chain managers use in terms of adopting new innovative technologies to stay competitive in rapidly changing global business environments. The conceptual framework was the transformational leadership theory, and the overarching research question was: What leadership strategies do supply chain managers use to adopt innovative technologies? Six business managers from different supply chain companies in Atlanta, Georgia who have successfully used leadership strategies to adopt innovative technologies in their companies participated in this study. They provided primary data to answer the overarching research question. The primary data source was participant responses to semistructured interview questions. Secondary data sources include field notes, change management protocols, IT deployment strategies, peer mentoring plans, minutes of strategic planning meetings, and company archival documents.

I achieved data saturation when no additional information emerged from interviews and company document reviews. Based on participants' responses to interview

questions, I identified four themes: people management, communication, leadership style and relationship, and coaching and empowerment. The transformational leadership theory was used to provide a better understanding of leadership strategies that supply chain managers use in terms of adopting new innovative technologies to stay competitive in rapidly changing global business environments. Study findings indicate some supply chain managers in Atlanta, Georgia use a combination of leadership strategies in order to adopt new innovative technologies and achieve longterm sustainability and profitability.

Presentation of the Findings

The overarching research question for this study was: What leadership strategies do supply chain managers use to adopt innovative technologies? Four themes, (a) people management, (b) communication, (c) leadership style and relationship, and (d) coaching and empowerment, were identified and discussed—the discussion compared findings from previous research that relates to the conceptual frameworks. Many studies have been conducted in the supply chain industry; However, the literature search shows few relevant studies have been completed recently. Alsmadi et al. (2023) examined the adoption of blockchain technology in supply chain and concluded supply chain management recognized that perceived ease, Inter-organizational trust, perceived usefulness, data transparency, and confidentiality had a significant impact on the adoption of technology in the supply chain industry. Mukherjee and Chittipaka (2022) analyzed the factors that impacted the adoption of intelligent agent technology in the supply chain industry and reported managers identified factors like top management support, skilled employees, and IT awareness to help the adoption process of innovative

technology to gain a competitive advantage. Searcy et al. (2022) stated supply chain managers must commit to shifting their transparency initiatives from instruments of accountability to meaningful change and think holistically in their views to drive technology adoption. The research conducted by Rehman Khan et al. (2022) suggested supply chain managers apply digital transformation and smart technologies to achieve sustainable performance. I combined the data from semi structured interviews and company archival documents to analyze the results.

In the following subsections, I will present the four themes that emerged from my thematic analysis of the company's archival documents and participants' responses to the interview questions.

Theme 1: People Management

The first theme was people management, which involves recognizing the importance of people in terms of change management when adopting innovative technology. The theme of people management was mentioned by all participants, which helped me understand the importance and role of this theme. All participants affirmed that using people management as a leadership strategy was vital in terms of successfully adopting new innovative technologies.

In identifying strategies supply chain managers use to adopt innovative technologies, participants highlighted people management as a significant strategy that is employed when implementing innovative technologies. Lack of team spirit leads to lack of motivation, and transformational leadership styles positively influence innovation (Tian et al., 2018). P1 said, “People come first, as part of my strategy, people for me, is

everything, because without the right people, even if you implement the best technology, somebody needs to understand, execute, support, improve, and work with it." According to P1, "You always need people regardless of the technology; people always matter." P1 also claimed, "The team can get a work-life balance to foster collaboration through people picking up work from each other, taking breaks, and things like that."

Disruptive technologies led to business managers embracing these technologies to remain competitive by capturing new markets. Technology leads to synchronization that promotes collaboration across value chains in order to achieve cost savings, inventory management, and competitive advantage (Blossey et al., 2019). P2 stated, "I prefer to work with teams with their expertise that we are aligned with and have built trust." P2 also said, "I know I can trust at least 90% that I can manage by listening to how the team is progressing, guiding the way if the team is off track." P3 claimed, "I noticed getting all the people involved early helps team members express themselves to be able to cover their needs, and because they have had input into the process, the stakeholders feel more ownership in the outcome." P3 also stated, "When people have ownership over the goal, they feel more consulted as though their opinions are valued, and they speak up when things could go off the rails." P4 stated, "I ensure collaboration across teams to get end-user buy-in." According to P6, "I deal with how I engage with people." The diverse ways participants applied their leadership strategies and resources to implement and overcome challenges when adopting innovative technologies fostered collaboration and employee buy-in. The review of archival documents from participants showed a diverse and cross-functional team dynamics.

Firms found using human resources was significant in terms of ensuring the successful adoption of innovative technologies to remain sustainable. Teamwork is essential to firm success; hence, there is a need for leaders to plan, organize, and monitor creative teams that are tasked with idea generation, exploration, and experimentation (Super, 2020). In terms of challenges encountered while implementing leadership strategies, P2 noted, “Collaboration was the biggest challenge.” P3 explained, “People collaboration can help ensure fostering of good skills and ensure appropriate goals achieved.” Moreover, according to P3, “When implementing something new, not necessarily just software, it is important to build a team with different skills in different areas.” Participants cited the complexity of innovative technology as a factor that made collaboration challenging. According to P4, “You can overcome technology and implementation issues; it is the people side when you run into resistance that is always the most challenging.” P5 asserted, “I always get alignment within the teams when we brainstorm to come up with new ideas.” P6 said, “I think that people should collaborate.” P6 advised against pride and arrogance and said, “when people do not share information, you create a culture where people compete against each other, so they are not sharing information out of pride and arrogance.” Participants acknowledged that people management is critical in terms of adopting new innovative technologies.

Organizational leaders strive to benchmark the adoption of innovative technology to ascertain its proper use and deployment. Business managers recognize their followers through simulation, preconceived notions, calculated risks, creativity, innovation, and collaboration that fosters creative, independent thinking (Alqatawenah, 2018). The

participants commented on innovative challenges were addressed. P1 opined, "We collaborate by working through the problems irrespective of the situation." Providing further narrative, P1 added, "Another strategy I use to overcome challenges is consulting people that have faced similar challenges to leverage their experience, lessons learned, and resolution steps." P4 asserted, "To overcome the obstacle, I try to identify who those people are as soon as possible." On further inquiry, P4 explained, "Once you know who they are, then your goal is to work with the project managers and the resistors managers if you need to get them involved to figure out how to get them past that resistance." P6 noted, "I encourage people to collaborate and, most importantly, implement the tool that causes people to be an enabler to people."

Responding to how participants implemented the leadership strategies for adopting innovative technologies, P1 remarked, "The team will be excited and encourage their peers to keep pushing." P4 affirmed, "So, I had a solid background there in people management." P5 commented, "I mean to get the team's understanding of the requirements to avoid misunderstanding." P6 said, "Many people do not know how to transform incrementally towards a goal, and even if they know what that goal is, it is rare." P6 advised, "I worked with every team to get them to a certain level of proficiency, with advanced roadmaps, agile collaboration, and practices." P6 stated, "We are working with the engineering team to have them understand that waterfall is not the best way to deliver a software problem." Tian et al. (2018) encouraged managers to foster collaboration that builds team spirit leading to synergy in innovation and increased efficiency. Organizational leaders operationalize dynamic capabilities to drive innovation

and increase profitability (Schoemaker et al., 2018). The participants further established that implementing an effective people management strategy increases collaboration, support, ownership, motivation, team bonding, and trust in team members.

Business leaders design their supply chain to influence the total cost by integrating their value chain to foster collaboration. Digital transformation of the supply chains enables organizations to foster collaboration between internal and external systems and organizations (Tavana et al., 2022). Supply chain managers integrate robots into their operations to reduce human errors and increase collaboration with human resources to increase warehouse capacity by 20% (Blossey et al., 2019). Responding to the measurement of the effectiveness of the strategies, P1 said, "I believe in building trust at every level for people to say I will always be there professionally, and I will do what I say." P3 asserted, "I could see the result of my strategy in real-time as the team became high performing with improved collaboration." P4 affirmed, "There is a measure of the people's happiness scale. When you look at people's engagement, you could say if they are excited." Participant P5 stated, "I believe simulation works very well, but you must have the right people on the requirements to symbolize things. You must have an effective management team."

I explored the effectiveness of the strategies by asking participants which leadership strategies have been the most effective in adopting innovative technologies. Teamwork is essential to a firm's success, hence, the need for leaders to plan, organize, and monitor creative teams tasked with idea generation, exploration, and experimentation (Super, 2020). In response, the participants noted investment in people development led

to increased commitment which helped the change management process. Participants collectively confirmed collaboration as one of the most effective strategies. "I would say collaboration because no one person or group knows everything when you have something complicated like implementing innovative technology." "Collaboration is always the key that I focus on the most." The alignment of organizational and employee goals created a domino effect. Employees are motivated when they have clarity and inclusion, which improves understanding as people can see why it is beneficial for them to do what they want or what is needed. P4 confirmed a well-defined process was the most effective as the team understands the benefits of the change. The participants echoed stakeholder management as a critical strategy as listening and understanding their needs helps increase buy-in, which drives adoption from top to bottom.

Employees learn about innovative technologies during implementation and attitudes toward the technology are formed at this stage. Firm investment in emerging technologies gives leaders access to information, reduces costs, and increases collaboration and the quality of products (Agrawal & Narain, 2018). P1 noted, "The people I lead play a part in the strategy to apply; I introduce a few components from implementation, support, and development to foster collaboration." P2 stated, "The collaboration helped build trust with executives who would trust them to tell the truth and relied on them to make decisions for the firm as the team designing did not understand the issues and why this is important." P3 asserted recognition is critical to increased motivation which drives adoption. P4 explained, "We use Microsoft teams technology to create channels and groups to collaborate." "Collaboration is super important, but the

methods you use to do that are equally important." Providing additional narrative, P6 said, "People tend to think in silos and miss the collaborative opportunities for those practices." "I will say that wherever collaboration does not exist, it is like this quote I have heard - cooperate or perish."

Positive attitudes may help reinforce the use of innovative technology to gain a competitive advantage. Agrawal and Narain (2018), Blossey et al. (2019), and Tian et al. (2018) stated managers use people management in adopting new innovative technology to stay competitive. The study findings demonstrated that supply chain managers used people management as a leadership strategy in implementing and embracing technology. However, analysis of data highlighted the instrumental role played by leadership in ensuring that the organization prepares for change and that collaborative execution, learning, IT utilization, and skills are maintained.

Theme 2: Communication

Business managers sought to adopt innovative technology individually before gaining organizational commitment. Supply chain managers align supply chain management with big data analytics to impact innovative development in their organizations (Bag et al., 2020). Puni et al. (2018) noted that constructs such as communication are customized considerations of leadership behavior for evaluating the impact of leadership style within supply chain management and its influence on employee performance. The theme of communication emerged from all the interview questions. All participants attested to successfully adopting innovative technology using communication as a leadership strategy.

Participants agreed that effective communication is critical in adopting new innovative technologies. Uslu (2019) explained that charismatic leaders have high communication skills to persuade their followers to buy their ideas which are crucial to organizational success. P1 posited, "communication is the second component of a strategy commonly used." "I will go and add communications by providing 360 feedbacks, I will give my weekly, daily, and monthly feedback around the clock." According to P1, "I use all communication channels within my company to publish awards and recognize great work done, as well as bonuses and make sure the right people are seeing it." The participants confirmed communication leads to transparency and keeping people informed on projects' activities and scope to build trust. P1 confirmed that keeping people engaged with communication flow makes convincing or bringing people along easy. P2 stated, "We collaborated with the client's business and technical team in real-time using different strategies such as effective communication." The data gathered showed that communication within systems, businesses, and processes helped drive the implementation and adoption of innovative technology.

Participants responded to the question about their leadership style and its effectiveness. According to P3 said, "I would say my leadership style is communication and not just communicating outward for people to know what is happening but inward such that I can incorporate any feedback as soon as possible." P4 explained, "When I approach any change, the first thing is to engage and communicate with the end users to ensure they know what and why we are doing and how it will benefit them." Explaining further, “The other thing I do is to engage with the senior leadership in communication

meetings or emails where the end users know that senior leadership cares and knows what is happening because that shows the project is important to the organization". P4 concluded, "I coordinate those conversations and ensure that we drive engagement from both the end user and senior leadership so that everybody understands that we are moving in this direction, and everybody is on board, and their voices matter".

Business managers implement yearly improvements to innovations through new product and process launch for longterm sustainability. Supply chain firms use communication to achieve supply chains with intelligence, flexibility, and sustainability (Oh & Jeong, 2019). P1 posited, "So one of the challenges is working with other leaders with a different mindset and style of leadership; I believe in communication, and somebody says, 'Well, I do not feel the need to communicate everything.'" The most common challenge I have seen is communication." P3 explained, "So when implementing something new, not necessarily just software, it is important to communicate with people so they can call out challenges before they happen." My review of the archival documents revealed that supply managers had implemented some communication programs to create awareness and engage stakeholders to increase the adoption of innovative technology. The research data showed effective communication led to continuous technology updates with new and enhanced functionalities.

Organizational leaders must achieve cost savings and sustainability by upgrading existing technology or adopting innovative technology. The participants responded by addressing the challenges they faced when adopting new technology, and P1 stated, "I have had a situation with people pushing back on something, saying they do not want to

do this, and communication has helped me overcome these challenges." Attesting, "I had to travel a lot to have in-person communication. I ensure I stay engaged with external and internal customers." "Communication has been helping me navigate difficult challenges." According to P1, "Better communication is tied to people because having a clear objective of why I am doing something or why we need to do something; even if there is pushback, we will likely figure it out and come to a resolution". P2 posited, "Effective communication has helped me address the resistance I faced from the clients." In response P3 stated, "I am heavily dependent on communication; The first thing is to let everyone know that their opinions are valued; Then, I try to have large groups of collaborative feedback, insight gathering, and one-on-one group feedback sessions," P3 affirmed, "I was able to schedule a meeting with everyone in the same room to communicate and find the root cause; We were able to overcome some of the challenges." P5 posited, "Most challenges are directly related to basic communications." Firms recognize the benefits of implementing innovative technology and the need to stay competitive.

The participants explored different methods and styles of communication to foster collaboration and get stakeholder interest and confirmed the positive outcomes. The participants emphasized how communication helped them overcome challenges encountered. P2 explained, "I communicated through several mediums until the team understood the benefit of the proposed approach, and that was how I was able to implement the warehouse management system." P3 remarked, "I think the first part is that communication is not the same for every person. So, understanding the best ways

that people communicate is sometimes a challenge to get a different communication style per person."

Moreover, "People should be allowed to speak up in meetings by giving time specifically for feedback and contribution." According to P3, "communication styles are not limited to verbally expressing feedback but giving people all the information, they need when they need it such that they can speak intelligently on your behalf." P4 stated, "I approach every change that I need to implement by communicating to the core team that is going to be involved in the change for the end users." On further inquiry, P4 explained, "that communication you do at the beginning is important because they should know the need for the change and helps you overcome roadblocks faster." P5 said, "I have addressed these challenges by ensuring we have clear requirements, and we communicate across stakeholders, so everyone understands the expectation." The participant's response showed the importance of communication early in the project as a strategy for overcoming challenges and resistance to adopting innovative technology.

Organizations must assess new technology for features that benefit the firm and introduce measurement metrics to ascertain effectiveness. The participants said they measured the effectiveness of their leadership strategies, and P1 stated, "I would measure that from a strategy perspective of asking the customer if we communicated well on lagging things?" P1 summarized, "That constant communication and transparency summed up by the customers, which leads them to give reviews." In response to. P3 stated, "People feel comfortable giving feedback, and with open communication, the feedback continues, and those conversations end with more feedback." P4 used target

communications to measure effectiveness, and "the communication methods are going to be different depending on the group, so I would not say that there is necessarily a single way to communicate." According to P4, "We ensure we are communicating the message properly and correctly; when we have different people making communication meetings, we want to ensure that those are consistent across the groups." P6 said “Meeting and communicating with people is essential." The participants highlighted the importance of well-designed strategic plans supporting the integration and sustenance of innovative technology.

Business leaders acknowledge poor communication results in stakeholder resistance, which affects technology adoption. P2 noted, "Our strategy was communication, persistence, and ensuring the leaders had all the information to make the right decision.” P4 mentioned, "So, I think when you think about the leadership strategy, communication is super important." P5 advised on the need to discuss with customers before implementing a solution and concluded that "it is a healthy conversation." The participant's responses indicate that supply chain managers use communication as a leadership strategy in adopting new innovative technology to remain competitive in the global business environment.

Theme 3: Leadership Style and Relationship

The firm leadership style is crucial to achieving its business goals and objective to remain sustainable. Organizations need to understand creative leadership on the diffusion of innovation to adopt intellectual stimulation, supportive leadership, and personal recognition (Carreiro & Oliveira, 2019). Idealized influence is a leader's ability to

convince followers and be a role model to subordinates (Bass,1985). The leadership style and relationship theme emerged from exploring the participants' lived experiences of the leadership strategies they have implemented, and the challenges faced and addressed. According to P1, "Leading by example, which is walk the talk, practice what you preach." "So, there are tactical strategies that include delegating tasks to them and challenging them. One of the things I love the most about my leadership style is coaching and mentoring people." P1 advised, "Then, make sure they get recognized and get the rewards they worked for or the accomplishments they deserve." The analysis showed the importance of motivation in any implementation's output quality.

Supply chain managers must adopt an effective leadership strategy to yield the benefits and investment of innovative technology. There is a good association between leadership styles that provide intellectual stimulation and workers' creative output (Alqatawenah, 2018). Ahmad and Karadas (2021) presented a connection between leadership and the state of the organization. Organizations achieve superior performance through employee motivation linked to leadership (Yildiz & Sezen, 2019).

All participants acknowledged using leadership style and relationship as a strategy for adopting new innovative technology. Leaders of intellectual stimulation advocate for comparison and metaphors to help people think more creatively (Jensen et al., 2020). The transformational leader connects the vision of a business and the objectives to the personal standards of the workers (Zhu et al., 2019). The findings align with the transformational leadership style's effectiveness in driving technology adoption.

The participants acknowledge the importance of people in achieving organizational success and longterm sustainability. P5 posited, "My leadership style is all about the people because many companies lose focus on their people." According to P5, "For me, if you want to be successful in what you do, believe in your people, give them the tools to be successful, and encourage them to come up with new ideas or solutions." P5 affirmed, "Then, bring it to the table, debate, align, and encourage them to execute. I create models to ensure that whatever solution is the right fit for our customers." Employees were more committed to their jobs and experienced less stress when the managers used intellectual stimulation leadership style (Jensen et al., 2020)." P6 stated, "I would say that I am a servant and transformational leader because, as a young leader, you are trying to understand who you are in the sense of leadership." The participants collectively agreed that relationship building is critical to the success of any initiative.

Business managers acknowledge employees achieve increased motivation through their individual goals and growth opportunities in the organization. Business leaders should understand team members' personal goals and align organizational goals to set expectations and achieve overall success (Shaheen et al., 2019). P1 noted, "The internal challenge of resistance faced when implementing my leadership strategy involves motivating people to develop and grow for their benefit, which will help the team and the organization." P2 narrated how leadership was vital in software implementation and asserted, "The leadership style is the biggest challenge." P6 emphasized, "I use my personality, knowledge, and skill to manage some of these challenges." According to Naidoo et al. (2019), rewards, resources, and leadership vision are the three latent

leadership variables that positively relate to innovation. The participants noted lack of employee commitment impedes the integration and sustenance of innovative technologies.

Organizational leaders invest in technologies to give employees access to tools that improve operational efficiency and effectiveness. Yang and Yang (2018) advised firms to adopt product and process innovation to pursue a new market for long-term sustainability and argued that transformational leadership significantly facilitates explorative innovation. According to P2, "The success in the first code drop increased the customer confidence and helped my relationships with my customers significantly." P5 commented, "So, having empathy and making sure that you have things in place in case somebody leaves is not always the last resort." According to P5, "I allow the team to talk about whatever they want because that makes them also care about what we are doing as they feel the leader cares and he is listening." Leaders that adopt the leadership style pay meticulous attention to the requirements of the workforce and teach the employees to bring about long-term sustainable change (Prabowo et al., 2018). Organizational stakeholders must be motivated to learn the new technology, as a lack of technical knowledge and computer illiteracy among employees may impede the successful adoption of innovative technology.

Business leaders increase the likelihood of success when implementing technology by ensuring their leadership style aligns with the firms' longterm goal. Leadership style is an amalgamation of many features and personality quirks that leaders use to build relationships with team members (Chen et al., 2021). The participants highlighted the

importance of relationships and their effects on the outcome of their projects. According to P2, "So, we have tried to reduce the time spent in meetings; for me, building relationships across your peers, meaning if you want to be innovative, you can ensure that your peers have the same thought process and ideas." P6 stated, "I think that the most effective is the innovative leader because the innovative leader encompasses so many other things; I have organic professional, transparent relationships with my team". Charismatic leaders encourage teams to collaborate and develop a sense of belonging, leading to long-term sustainability (Adnan & Valliappan, 2019; Vasilescu, 2019). P6 stated" I am transparent in saying that it is essential for me to learn how to convey what I need to convey and to build bridges".

The participants cited the complexity of innovative technology and technical expertise as a factor in tailoring their leadership style. Supply chain leaders strive to align their leadership style with the company culture and people. P2 affirmed "To me, relationships are super important that's the thing that I focus on the most is how to save this or how do I keep this relationship strong?" Leaders can alter leadership styles to ensure improved results (Chen et al., 2021). P1 attested, "I discovered my leadership style several years ago, and I figured a freestyle by seeing how the conversation goes, and then I decide I need to influence action." According to P1, "The strategy component is leading by example through working the talk. I can design my strategy based on the team needs, job description, and organizational objectives." P1 posited, "For me, the leadership style drives my strategy. The objective drives how I apply my staff to the strategy." participant P3 stated, "If there is a bureaucratic reason why I cannot provide a promotion or a raise,

people still feel motivated." According to P3, "Motivation is different for every person, and motivation could be something that, as a business leader, I could provide maybe a promotion or a raise or visibility."

The participants' responses and archival documents reviewed outlined the firms change management strategies that included team building activities which emphasized the importance of leadership style and relationship building. According to Chen et al. (2021), Prabowo et al. (2018), and Yildiz and Sezen (2019), managers use leadership style and relationships as a strategy for adopting a change for longterm sustainability. The study findings demonstrated supply chain managers' leadership style, and relationship with stakeholders increase support for integrating innovative technology into organizational operations.

Theme 4: Coaching and Empowerment

The theme of coaching and empowerment strategy emerged from all the interview questions, with five participants attesting to the use of coaching and empowerment in driving the adoption of new innovative technology. Puni et al. (2018) noted that constructs such as mentoring and coaching, recognition, self-development, and communication were customized to consider leadership behavior for evaluating the impact of leadership style within supply chain management and its influence on employee performance. P1 stated, "I give them opportunities to do whatever they need to grow. I will guide and support, mentor, and show them the ropes, functionally, technically, and network." Mentoring provides leadership development to form connections, manage company politics and culture, and communicate effectively with

workers (Prabowo et al., 2018). Business managers should clearly communicate the role of technology in an organization to avoid confusion and resistance, hence the need to coach and empower team members.

Supply chain leaders design a strategy that does not entirely shut down old systems and freak out users. The managers strive to slowly introduce innovative technology and gain support from stakeholders through coaching and empowerment. Coaching enables employees to achieve improved performance and satisfaction, reducing employee turnover (Yin et al., 2019). P2 asserted, "I would say that my preferred leadership strategy is coaching." According to P2, "The coaching strategy worked for my most successful projects, and my team learned a lot from my coaching, which helps our customers. We empower each other, which made things more efficient and increased our likelihood of success." P6 remarked, "Even as a young leader, I am mentoring younger leaders." Furthermore, P1 noted, "It is easy to get into conflicts with peers because they may not be of the same leadership style, and they may be a bit more try to walk the back doors of things and believe in telling the truth."

The participants expressed their strategy of empowering team members and confirmed challenges faced by team members not believing in themselves, which creates additional work and coaching opportunities for them to realize their potential. P2 echoed, "I consider myself a technical coach. We worked with the client to conduct integration testing before code delivery, and the challenge was getting the client to understand the project. I coached them to be successful". P3 opined, "I think it is important to consider training which is important for people to understand a tactical view of success in their

roles." Continuing, P3 attested, "People feel comfortable executing at a level that may be different from what they were doing previously." Transformational leaders consider unexpected problems and losses as educational resources; hence, learning is a leader's focus (Boukamcha, 2019). P2 confirmed the coaching strategy, "I had to educate them about agile practices and how it was beneficial, and it will help increase the quality of our output and a quick turnaround of issues found." Some participants stated, "I have used the strategy of empowering people has helped me to get the buy-in as we transition to the cloud. I would empower people to innovate within the quality technologies we are exploring." The findings showed supply chain managers exhibited coaching and empowering traits to build employee trust and drive adoption. The managers confirmed they recommended and sponsored innovative training to empower employees. The archival documents reviewed emphasized that lack of feedback and training demotivates employees, which leads to slower adoption and employee turnover.

The findings showed investment in employee growth empowered them to execute and explore, which led to faster adoption and transition as they became the ambassadors for the change. According to P4, "Once you complete and go through iteration testing, it is a nice way to look at it because you can break down each group in a separate assessment. You may have to revisit things and tweak training and reinforce it through further education". P6 stated, "I did the socialization in training, then leveraged on a scorecard process to do a retrospective." P6 commented, "Our CPO saw that it was essential for us to have product managers trained in the way of doing their work which was powerful." P1 stated, "If I had to put it under one, commitment to empowering,

coach, and mentor." According to P1, "I can empower my team to enable them to use the technology; the people development aspect allows me to empower folks to go into the world and explore what is new in the industry, market, economy, and outside the continent." The participants all attested to the development of people as the biggest win for them and the most effective in terms of coaching, paying attention, building the right affiliation, and empathy. From the company documents, I observed that participants P1, P6, and P4 established regular feedback with their team members, which reduced employee burnout and increased the adoption rate.

I explored leadership strategies supply chain business managers use to integrate and sustain innovative technologies. P1 commented, "Empowering them by supporting their development effort, whether formal or Informal education through hands-on learning, has been the most effective tool in my strategic arsenal." The participant's responses to the interview questions aligned with Boukamcha (2019), Prabowo et al. (2018), and Yin et al. (2019) statements that supply chain managers use coaching and empowerment in adopting new innovative technology to stay competitive. My review of the company archival documents revealed that supply chain managers implemented coaching and training programs to improve the adoption of innovative technology. As applied in this study, 83% of the participants attested to using coaching and empowerment as a leadership strategy in adopting innovative technology to achieve longterm sustainability.

Relating Study Findings to Transformational Leadership Theory

The study findings indicate that supply chain managers could enhance adopting new innovative technology to stay competitive in the rapidly changing global business environment by implementing leadership strategies based on transformational leadership theory. All participants confirmed relationship building, collaboration, communication, coaching, empowerment, and the different traits associated with the transformational leadership theory used to drive the adoption of new innovative technology in their organization. P6 stated, "It is about empowering others to discover the leader in themselves, so when people discover the leader within them, that redounds to the excellence of the project, the program, and the mission. So, that is the number one thing for me as a leader. If I do not do that, it does not matter what else I do because I am not working with the strongest team that can if I do not do that". Idealized influence is a leader's ability to convince followers and be a role model to subordinates (Bass,1985). P1 remarked, "I tell my team members what they need to do to get us to talk about it regularly. I would love to see people developing and growing. It is a passion for me." Transformational leaders pay attention to each employee by directly listening to the issues that workers are facing and helping those individuals (Faupel & Süß, 2019). Business leaders align their leadership strategies with the business objectives to enhance and improve their services to satisfy the needs of their customers.

As applied in this study, all participants affirmed using leadership strategies to enhance the adoption of new innovative technology in their organization. Transformational leaders improve organizational performance by working closely with

team members to identify and implement necessary changes (Northouse, 2019). Transformational leaders motivate their followers to achieve individual and corporate goals, increasing employee satisfaction and reducing employee turnover (Zhu et al., 2019). As applied in this study, all participants' responses echoed Chen et al.'s (2021) and Zekhnini et al.'s (2020) statements on using leadership strategies based on the transformational leadership theory in adopting new innovative technology to improve operational efficiency and increase profitability. All participants confirmed the leadership style played a significant role in the success of their business initiatives and overall team strategy.

Firms invest in technology to attain competitiveness, sustainability, and profitability, hence ensuring their leadership style aligns with the corporate strategy. Transformational leaders prioritize the needs of their followers over theirs to help them be the best versions of themselves (Asbari, 2021). All participants used a combination of leadership strategies involving people management, communication, leadership style, relationship, coaching, and empowerment to influence their employees to adopt new innovative technology to stay profitable in the business environment. As applied in this study, all participants expressed the importance of ensuring the employees know the technology to help drive adoption. The study findings presented a need to enhance business processes and operations by informing all stakeholders before introducing innovative technology. The business managers confirmed the success criteria for any technology implemented are measured if the requirements for accessibility, usefulness, comfortability with the system, and efficiency of use are met.

Applications to Professional Practice

The study findings may help organizational leaders, including governmental and non-governmental agencies, business owners, and entrepreneurs, gain helpful information on leadership strategies for adopting new innovative technology to stay competitive in the rapidly changing global business environment. Understanding the leadership strategies that supply chain managers use in adopting new innovative technology is crucial to staying competitive in the rapidly changing global business environment. Supply chain managers should advance their business environment with technology to improve the welfare of society, achieve long-term sustainability, contribute to growth, and reduce business risks (Mangla et al., 2020). Technology has significantly improved the effectiveness and efficiency of supply chain operations (Sánchez-Flores et al., 2020). The public might learn from this study's findings the leadership strategies for adopting new innovative technology to stay competitive in the rapidly changing global business environment.

Based on the study findings, the most significant contribution to professional practice may be identifying potential leadership strategies that supply chain managers use for adopting new innovative technology to stay competitive in the rapidly changing global business environment. Organizational leadership plays a crucial role in the long-term sustainability that improves employment rate, living conditions, and socio-economic growth, hence the need for appropriate leadership strategies (McCrea, 2020). As applied in this study, supply chain managers should establish leadership strategies that foster collaboration and relationship building for adopting new innovative technology to stay

competitive. Leaders' behaviors affect employees' performance, trust, job satisfaction, and growth in the business atmosphere (Chen et al., 2021). Supply chain managers could use this study's results to understand the role of inappropriate leadership strategy in adopting new innovative technology to stay competitive in the rapidly changing global business environment. The knowledge gained on leadership strategies may enable supply chain managers to implement new innovative technology in their business operations successfully.

The findings from this study could contribute to the literature on supply chain management and provide supply chain managers with new insight regarding leadership strategies for adopting technology and profitability. The supply chain business managers' leadership strategies are essential in achieving the corporate objective because a leader's task and relationship behaviors determine sustainability, employee retention, and improved standard of living (Xu & Wang, 2019). Organizations achieve superior performance through employee motivation linked to leadership (Yildiz & Sezen, 2019). New and upcoming supply chain managers may use the findings of this study to understand leadership strategies and how to incorporate transformational leadership traits in their business operations.

Based on the study findings, the most significant contribution to professional practice might be providing a practical model for supply chain managers to develop leadership strategies that align with their firm's corporate strategy for longterm sustainability. Teamwork is essential to a firm's success, hence, the need for leaders to plan, organize, and monitor creative teams tasked with idea generation, exploration, and

experimentation (Super, 2020). Effective supply chain technology should connect the present data to past information to facilitate accuracy in predicting the most profitable action (Zekhnini et al., 2020). Al Khajeh (2018) found a correlation between the kind of leadership style and the corporate culture and performance. Supply chain managers should match operational innovation with traceability and supply chain coordination to enhance firms' performance (Shou et al., 2021).

The study findings might add value to the supply chain management community by disseminating information, which could significantly contribute to information sharing and networking. Organizations attain business sustainability by integrating advanced technology and human resources (Hashmi et al., 2018). By aligning supply chain management with big data analytics, business leaders would significantly impact innovative development in their organizations (Bag et al., 2020). The study results could help supply chain managers understand leadership strategies' role in implementing new innovative technology to increase visibility and profitability. Supply chain managers seeking leadership strategies for innovative initiatives may learn from the study findings. Some supply chain managers with weak leadership strategies may apply this study's findings in their organization to build better employee relationships, increasing employee motivation and retention. The study findings could significantly enhance supply chain managers' organizational performance by providing metrics showing operational efficiency and increased productivity.

Implications for Social Change

This study's findings might significantly contribute to the local community's economy. According to Lagumdzija and Ceremida (2019), organizations create shared value between the company and society through stakeholder participation to improve communities' living standards. The profitability of supply chain organizations might increase corporate social responsibility activities, leading to infrastructural and economic development in the rural communities playing host to the companies. The results of this study could contribute towards empowering communities by increasing their skill set. The findings could also enhance the sustainability of supply chain businesses, thus contributing towards increased employment opportunities and enhanced livelihoods of the millions of people that depend on the success of supply chain organizations to survive. Successful warehousing optimization improves employees' lives with better processes, accurate data collection, statistics, location allocation, and information transmission (Deng et al., 2018). By studying this research's outcomes and implementing excellent leadership strategies, supply chain managers might successfully adopt new innovative technology to meet consumer needs.

Profitable supply chain organizations might expand into more rural communities, leading to more employment opportunities, infrastructural and economic development, human capital development, and possibly improving the country's gross domestic product. When implementing a warehouse management system, supply chain businesses could benefit from warehousing by increasing productivity, cost savings, and employee satisfaction (Andiyappillai, 2020). Organizations accomplish their corporate social

responsibilities to the local citizens by adopting innovative technology. The corporate social responsibilities might include awards of scholarships, sponsorship of local events, and the building of social amenities such as healthcare, libraries, and schools. The government would benefit from supply chain organizations' improved performance and profitability with more corporate taxes, which the municipal government could use to provide social amenities to the local community.

Recommendations for Action

An effective leadership strategy is fundamental in adopting new innovative technology to increase profitability. I recommend that supply chain managers establish, implement, and maintain influential people management and communication when adopting new innovative technology. To sustain their supply chain businesses, supply chain managers should enhance their leadership style and relationship, coaching, and empowerment skills to increase the likelihood of success in adopting new innovative technology. I recommend that leaders develop skills in people management, effective communication, leadership style, relationship, coaching, and empowerment to stay competitive and profitable.

The study findings indicate that supply chain managers use leadership strategies to drive the successful implementation of technology. It is recommended that supply chain managers develop adequate competency, experience, knowledge, and skills to identify the appropriate leadership strategies for adopting innovative technology. I will disseminate this study's findings to interested groups through presentations at conferences, networks, seminars and training, social media, sharing knowledge in my

workplace, and publications in academic and business journals on supply chain management.

Recommendations for Further Study

This qualitative multiple case study explored leadership strategies that supply chain managers use in adopting new innovative technology to stay competitive in the rapidly changing global business environment. The study findings, recommendations, and conclusions might contribute to existing and future research and close gaps in business practice regarding leadership strategies that supply chain managers use in adopting new innovative technology. This study was a cross-sectional, exploratory qualitative, multiple case study involving semistructured interviews to collect primary data from business managers from different supply chain companies in Atlanta, Georgia. I recommend that future researchers explore using longitudinal, explanatory qualitative, phenomenological study, quantitative or mixed methods involving diverse participants from varying levels of management and supply chain stakeholders at different geographical locations.

A significant limitation of this study was the small sample size of six business managers from different supply chain companies in Atlanta, Georgia. I recommend further studies with a larger sample size from various geographical locations such as Africa, Asia, and Europe. Further study with larger samples could provide helpful insight into supply chain managers' leadership strategies in adopting new innovative technology to stay competitive in the rapidly changing global business environment.

I am a novice in academic research. Hence, my competency, skills, experience, and knowledge of doctoral study are evolving. Consequently, the study was limited to my

subjective evaluation and accurate interpretation of the participant's responses to the interview questions. Also, the study was limited to my personal beliefs and professional background with the topic of the leadership strategies that supply chain managers use to adopt new innovative technology. I recommend that future researchers look beyond their beliefs and experience by exploring a diverse data set of lived experiences. Finally, the study was limited to the accuracy of information from the participants and the availability of company archival data. I recommend that future researchers comprise experts from related multi-disciplines in supply chain management to divulge some details I must have omitted in this doctoral study.

Reflections

This qualitative multiple case study aimed to explore leadership strategies that supply chain managers use in adopting new innovative technology to stay competitive in the rapidly changing global business environment. To meet the requirements for ethical research and Walden University IRR, I completed the CITI web-based training, which improved my understanding of the obligations for using human beings in the research study. I honestly lost hope as I did not anticipate how stressful the process of completing the research would be. However, the challenges encountered because of my work and life made me prioritize, sacrifice, and organize better to produce quality research, and I finally gained momentum. My administration of semistructured interviews and interactions with the participants improved my self-confidence, communication, networking, emotional intelligence, listening, observation, interpersonal, inspirational, and problem-solving skills. I interviewed the participants at their preferred time and date,

which allowed them to express themselves freely and enabled me to gain in-depth knowledge and understanding of the research problem. The organization and data analysis helped me to understand the research problem, identify the themes and patterns, and establish the study findings. Reflecting on my experiences in this study, I can attest to gaining a better understanding of the doctoral study research process with improved skills and competency in conducting academic research work.

From the study findings, I gained an in-depth knowledge of the research problem and how chain managers use a blend of leadership strategies involving people management, communication, leadership style and relationship, and coaching and empowerment. I am excited as I finally complete my DBA program. My new knowledge and understanding of the research problem positively changed my personal bias, perceptions, preconceived beliefs, ideas, and values.

Summary and Study Conclusions

Supply chain managers face challenges in using effective leadership strategies in adopting new innovative technology to stay competitive in the rapidly changing global business environment. This qualitative multiple case study used transformational leadership theory to explore the leadership strategies that supply chain managers use in their organization to achieve longterm sustainability. The sources of secondary data include company archival documents and field notes. The four themes that emerged from the thematic analysis of data were: (a) people management, (b) communication, (c) leadership style and relationship, and (d) coaching and empowerment. By implementing leadership strategies, supply chain managers could adopt new innovative technology and

stay competitive in the rapidly changing global business environment, thereby generating economic growth for local communities. With enhanced business sustainability, supply chain managers would pay more corporate taxes, which local and state governments could use to provide social amenities to the local citizens. By ensuring their organizations' competitiveness and sustainability, supply chain managers would continue to offer job opportunities to the regional communities. The use of transformational leadership theory as a lens for this study involving supply chain managers may fill a gap in the literature on supply chain management. The study findings align with previous scholars' conclusions regarding the need to implement effective leadership strategies in adopting new innovative technology to stay competitive in the rapidly changing global business environment.

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Appendix A: Interview Protocol

1. Set the qualification parameters: (a) business managers from different supply chain companies in Atlanta Georgia that have successfully used leadership strategies to adopt innovative technologies in their companies. (b) referral to an organization implementing innovative technologies.
2. Make a list of potential participants with their email addresses.

Approach volunteers

1. Send an email outlining the program.
2. Identify participants, and secure 5 participants from eligible volunteers.

Consent form

1. Send the consent form to willing participants.
2. Collect the returned emails and store emails in their specific file.
3. A follow-up call to confirm the information on the consent form, provide interview questions, address any concerns, and schedule the interview.
4. Assign the appropriate codes to each participant.

Interview

1. Kick off the Zoom or Teams meeting.
2. Greet the participant.
3. Ensure the technology is working (turn on audio recorder/Zoom recording/ test for accuracy, ask if they have any pre-interview questions).
4. Discuss the availability of additional documents.
5. Begin the interview.
6. List each interview question.
7. Complete the interview, asking if there is anything else; extend thanks.
8. Turn off the audio recorder/Zoom recorder and exit the Zoom meeting
9. Complete the audio recording.
10. Set the member checking interview date.

Post-interview

1. Transcribe the data through NVivo.
2. Summarize the interview information.
3. Follow up interview with the participant to member check the interview information.

Appendix B: Letter of Invitation

Dear Sir/Madam,

As part of my doctoral research at Walden University, I invite you to participate in a research study to explore leadership strategies supply chain managers use in adopting innovative technology. The findings of this study may help business owners identify leadership strategies for adopting innovative strategies that managers within supply chain management organizations can use to increase profitability. The participants for this study shall be supply chain managers in Atlanta, Georgia, who have successfully used leadership strategies to adopt innovative technology.

The mode of data collection shall be via telephone and other social media channels, including Zoom, Teams, and email. Additional follow-on questions, if necessary, will be recorded for accuracy via email, phone, or video teleconferencing services. The survey duration could take anywhere from 15 minutes to 1 hour, depending on how in-depth the participant wants to go into each question. All data collected will be confidential, and your participation in the study is voluntary. 24 hours after I complete the interview transcription, I will send you a summary email and request a response within three days if revisions are needed.

Enclosed with this letter is the Participant Consent Form. If you are interested in participating in the study, kindly review the form carefully and send an email with the words “I consent.” If you need any clarifications about the study, you may contact Bukola Olowo via phone at 347 261 8920 or email me at bukola.olowo@waldenu.edu

Your participation will contribute to the success of the proposed study and could stimulate interest among supply chain managers in the United States in appropriate leadership strategies for adopting innovative technology.

Sincerely,

Bukola Olowo

Appendix C: CITI Certification

CITI PROGRAM

Completion Date 17-Oct-2022
Expiration Date N/A
Record ID 52163599

This is to certify that:

Bukola Olowo

Not valid for renewal of certification through CME.

Has completed the following CITI Program course:

Student's
(Curriculum Group)
Doctoral Student Researchers
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Walden University

CITI

Verify at www.citiprogram.org/verify/?w1792b8e4-326f-46c3-a12e-1679ed4a68ac-52163599