2017

Strategies that Logistics Leaders use for Achieving Successful Process Improvement

Henry Childs Childs
Walden University

Walden University

College of Management and Technology

This is to certify that the doctoral study by

Henry Childs

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Robert Hockin, Committee Chairperson, Doctor of Business Administration Faculty

Dr. Frederick Nwosu, Committee Member, Doctor of Business Administration Faculty

Dr. Richard Snyder, University Reviewer, Doctor of Business Administration Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2017

Abstract

Strategies that Logistics Leaders use for Achieving Successful Process Improvement

by

Henry Childs

MS, Webster University, 1994

BS, University of Georgia, 1973

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

April 2017

Abstract

The successful implementation of process improvement (PI) could reduce operating costs of the Department of Defense, which could lessen the impact of budget reductions and the mounting costs of the expanding global mission requirements. Organizations fail to achieve the return on investment for PI and expected savings because of leaders' inabilities and experiences in integrating critical success factors into PI to improve processes. The purpose of this single case study was to explore the strategies that logistics leaders use to implement PI in the military aviation industry. Six purposively selected group and squadron civilian leaders with over 10 years of experience in successful implementation of PI, working with the Air Force in the military aviation industry in Georgia, participated in the study. The theory of constraints was the conceptual framework for the study. Data collection was through semistructured interviews using open-ended questions, review of organizational documents, and archival records. Seven themes emerged from using a modified version of Miles and Huberman's data analysis approach, including coding of transcribed interview data and grouping significant statements into larger units to form themes. Emerging themes were leadership, continuous PI, organizational culture, climate, strategic management, performance management, and resource. These findings may contribute to social change by providing the United States and allied leaders with strategies to improve aircraft availability to increase flight operations for enhanced safety and humanitarian efforts for their citizens and allies.

Strategies that Logistics Leaders use for Achieving Successful Process Improvement

by

Henry Childs

MS, Webster University, 1994

BS, University of Georgia, 1973

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

April 2017

Dedication

I dedicate this study to my wife (Vivian) and our children. My wife provided the source of inspiration, drive, and emotional support. The expectation of my children accounted for an attitude of striving to maximize personal value. The quest for knowledge and social change are endless pursuits. The support of loved ones and the family's motivation remained the key enablers for me to achieve the success in my life. I also dedicate this study to the military leaders for unselfish acts of dedication and commitment to this great country.

Acknowledgments

I thank God for divine grace and favor. I thank my wife and my children for their support and editing. I give thanks to the participants, the Walden staff, and my advisors. My sincere thanks and appreciation to Dr. Robert Hockin, my doctoral study chair, for providing outstanding mentorship, wisdom, and scholarly feedback. I am grateful to Dr. Frederick Nwosu, my second committee member, and Dr. Richard Snyder, URR, for their academic and scholarly advice. Their wisdom, support, and invaluable assistance made the journey a reality. Life's great accomplishments and success requires mentors and enablers. To whom much is given, much is required.

Table of Contents

List of Tables v

Section 1: Foundation of the Study 1

Background of the Problem 1

Problem Statement 2

Purpose Statement 3

Nature of the Study 3

Research Question 5

Interview Questions 5

Conceptual Framework 6

Operational Definitions 7

Assumptions, Limitations, and Delimitations 8

Assumptions 8

Limitations 8

Delimitations 8

Significance of the Study 9

Contribution to Business Practice 9

Implications for Social Change 11

A Review of the Professional and Academic Literature 11

Historical Perspective of PI 13

TOC and Related Theories 16

TOC and Application in the Manufacturing Industry 28

TOC Application in the Service Industry 30
TOC Application in Healthcare 33
TOC Application in Logistics 34
Points of Views of PI and Relationship to Previous Studies 37
Critical Strategies for PI Success 46
Transition 70
Section 2: The Project 73
Purpose Statement 73
Role of the Researcher 74
Participants 77
Research Method and Design 79
Research Method 80
Research Design 83
Population and Sampling 87
Ethical Research 91
Data Collection Instruments 93
Data Collection Technique 97
Data Organization Technique 102
Data Analysis 104
Reliability and Validity 109
Reliability 109
Validity 112

Transition and Summary....118
Section 3: Application to Professional Practice and Implications for Change....120
Introduction....120
Presentation of the Findings....120
Theme 1: Focus on Leadership....121
Theme 2: Focus on Continuous Process Improvement....130
Theme 3: Focus on Culture....132
Theme 4: Focus on Change....136
Theme 5: Focus on Performance....139
Theme 6: Focus on Strategic Management....144
Theme 7: Focus on Resources....147
How findings relate to the body of knowledge....151
How findings relate to the conceptual framework....176
Applications to Professional Practice....181
Implications for Social Change....182
Recommendations for Action....182
Recommendations for Further Research....184
Reflections....185
Conclusion....186
References....188
Appendix A: Interview Questions....258
Appendix B: Interview Protocol....259

Appendix C: NIH Certificate 262

Appendix D: Organizational Permission 263

List of Tables

Table 1. Details of Literature Reviewed by Year of Publication..... 13

Table 2. Major Themes Identified From Data Collection 121

Table 3. Factors of Leadership 122

Table 4. Factors of Continuous Process Improvement 130

Table 5. Factors of Culture 133

Table 6. Factors of Change Management 136

Table 7. Factors of Performance Management 139

Table 8. Factors of Strategic Management 144

Table 9. Factors of Resource Management 147

Section 1: Foundation of the Study

Organizational leaders in manufacturing use process improvement (PI) as a method to achieve competitive advantages in processes, production, and costs (Ayhan, Oztemel, Aydin, & Yue, 2013). Business leaders use PI to increase market expansion and profit making, achieve customer satisfaction, reduce waste and variability, reduce costs, and adapt to changing business environments (Meybodi, 2013; Sahno, Shevtshenko, Karaulova, & Tahera, 2015). Using annual financial reports as a baseline to determine operating cost, Pulakanam (2012) performed an analysis of savings-to-costs ratios based on percentage of costs and savings revenues to determine the monetary benefit of implementing PI. Pulakanam (2012) found that leaders in large $100 million American multinational organizations in manufacturing, healthcare, banking and finance, logistics management, construction, and project management could expect to save $4 million to $8 million per firm over a 4-year period of Six Sigma implementation. The successful implementation of PI depends on leaders' awareness of critical success factors (CSFs), leadership, organizational culture, PI tools, creative problem solving, and collaboration with suppliers (Sharma, Dixit, & Qadri, 2015). The problem in this study is that some logistics leaders lack leadership strategies for successful implementation of PI.

Background of the Problem

The phenomenon of implementing PI to achieve a competitive advantage is widespread in private manufacturing, but the use of PI is limited in service-oriented agencies and banks (Kovacs, 2015). Military leaders have a need for PI to continually search for improvements in processes that focus on high-performance outcomes (Aaberg

& Thompson, 2011). Members of the Deputy Secretary of Defense Task Group evaluated successful business practices during financial decline and recommended that the Department of Defense (DoD) adopt and implement business strategies and practices to improve performance and reduce costs (Defense Business Board, 2013).

Six Sigma, Lean, and Lean Six Sigma are continuous quality improvement methods that leaders use for PI (Assarlind, Gremyr, & Backman, 2013; Counte, Wang, Jar, & Chang, 2013). The failure of PI methods occurs due to leaders' failure to understand the barriers to successful implementation, leadership support, PI culture, employee training, organizational change, and knowledge management (Dabestani, Taghavi, & Saljoughian, 2014; Raghunath & Jayathirtha, 2014). The successful implementation of PI in a dynamic environment depends on leaders' awareness of critical success factors (CSFs) and knowledge of the constraints in the PI process (Garcia, Rivera, & Iniesta, 2013; Manville, Greatbanks, Krishnasamy, & Parker, 2012).

Problem Statement

In fiscal year 2017, the DoD will spend $150 billion to improve logistic processes that include aircraft maintenance, supply, equipment maintenance, and transportation (Defense Business Board, 2016). According to the Defense Business Board Task Group, the DoD leaders have potential savings of $18-23 billion in logistics and supply chain management with successful implementation of process improvement (Defense Business Board, 2014). The general business problem is ineffective process improvement results in decreased production (Defense Business Board, 2014). The specific business problem

is that some logistics leaders lack strategies to implement process improvement in the military aviation industry.

Purpose Statement

The purpose of this qualitative case study was to explore the strategies that logistics leaders use to implement process improvement in the military aviation industry. A qualitative approach is appropriate when the researcher focus on textual data to understand the meaning and interpretation of experiences (Gioia, Corley, & Hamilton, 2013). The intention of this research was to identify and understand the strategies that logistics leaders use to implement PI. Using a qualitative approach is a means to understand the phenomenon from the perspective of the participants (Armstrong et al., 2013). The target population consisted of civilian logistics leaders, working with the Air Force in the State of Georgia, who use PI in the military aviation industry. The implication for positive social change is the United States and Allied forces could improve flight operations for enhanced safety of our citizens and allies. Nonprofit and for-profit organizations might gain knowledge to improve workforce's self-worth, value to the organization, and work conditions through integrating CSFs into the methods of PI.

Nature of the Study

The method for this study was qualitative. The three types of research methods available to researchers are quantitative, qualitative, and mixed methods (Venkatesh, Brown, & Bala, 2013). An aspect of qualitative research design is the collection, analysis, and interpretation of narrative and visual information (Yap & Webber, 2015). The quantitative research method is the collection and analysis of numerical data to

describe, explain, predict, or control phenomena of interest (Upjohn, Attwood, Lerotholi, Pfeiffer, & Verheyen, 2013; Wester, Borders, Boul, & Horton, 2013). The focus of this research was not the analysis of numerical data to derive findings. Mixed methods research is the combination of both qualitative and quantitative methods (Farquhar et al., 2013); therefore, I rejected the mixed method approach. The purpose of this study was to obtain an understanding of strategies that logistics leaders use to implement PI in the military aviation industry. I selected a qualitative study because the research focuses on the interpretation of narrative and visual information, and not the collection and analysis of numerical data, to gain insight. Denzin and Lincoln (2011) noted that a qualitative study is an appropriate method for achieving a research objective with a research focuses on processes and meanings to discover new knowledge.

A single-case study design was the most appropriate design for this study because the case was representative of a typical event in a PI organization. Yin (2014) recommended a single-case study for a typical case. Additionally, the qualitative case study design is appropriate for exploring circumstances and conditions of commonplace situation and typical projects (Yin, 2012). The rationale for selecting the single-case study was the PI phenomenon is a contemporary phenomenon and the focus of this study was to gain an understanding of the strategies logistics leaders use to implement PI. The qualitative case study design is appropriate for exploring a contemporary phenomenon in depth within the real life context (Yin, 2012).

I did not choose the phenomenology, grounded theory, or ethnography design for this study. A phenomenological design is an appropriate design for the researcher to

explore the lived experiences of individuals through multiple in-depth interviews to establish meanings of the participants' experiences (Rosado et al., 2014; Skiba, 2014). Consequently, I did not select the phenomenological design because my goal was not to understand the essence of experiences, but to identify strategies for implementing PI. I did not choose grounded theory because the focus of a grounded theory study is developing theories and using empirical analysis to reinforce the theories (O'Reilly, Paper, & Marx, 2012). My goal was not to establish a theory, but to explore strategies that logistics leaders use to implement PI. Ethnography, the study of shared patterns of language, beliefs, and behavior within a cultural phenomenon (Killawi et al., 2014), is not appropriate for this study. While organizational culture is an essential factor of PI (Talib, Rahman, & Qureshi, 2013), the goal of this study was not to establish a sociological or cultural basis for implementing PI.

Research Question

What strategies do logistics leaders use to implement process improvement in the military aviation industry?

Interview Questions

I used the following open-ended questions to allow participants to explain their in-depth experiences of the PI phenomenon. Additionally, I used the subquestions listed in the interview protocol, shown in Appendix C, to focus on the rich details of experiences.

1. How do you develop strategies to implement PI?

2. What strategies do you use for continuous PI in your organization?

3. Please describe the leadership style or styles you use for implementing PI.

4. How do you manage the implementation process of PI?

5. Please explain how employees can affect the implementation of PI.

6. Please explain how organization culture can affect PI's implementation.

7. What other information (if any) would you like to share concerning PI's implementation success or failure?

Conceptual Framework

The theory of constraints (TOC) constituted the conceptual framework for this study. Using a case study design, Chou, Lu, and Tang (2012) used the TOC to identify strategies to implement PI in the aerospace industry. They found that the concepts of leadership, change management, knowledge management, strategic management, and performance management were factors in the TOC process. I used these concepts to explore strategies that logistics leaders use to implement PI in the aviation industry.

The TOC was applicable for this study. The central idea in the TOC that Goldratt developed in 1980 is that leaders fail to achieve organizational goals due to organizational constraints (Goldratt & Cox, 2004). The underlying leadership approach to TOC is eliminating performance constraints by a systems based and process approach to achieve PI (Goldratt & Cox, 1984). Process improvement occurs by organizational leaders implementing a change process (Goldratt, 1990). The TOC and PI, to include Six Sigma, Lean, and Lean Six Sigma, are methods that consist of systematic steps and the use of tools by leaders to identify root causes of problems, implement solutions, and measure and control processes (Goldratt & Cox, 2004). Failures occur in implementing

PI based on leaders' inabilities and experiences in removing constraints in leadership, organization culture, human factors of training and employee engagement, strategic management, process methodology, and performance management (Sharma et al., 2015.

Operational Definitions

Lean: Lean is a systematic management approach to improve manufacturing efficiency and product quality by (a) identifying what the customer values, (b) identifying and streamlining the value stream, (c) basing production on customers' demands and continuous product flow through the value stream, (d) establishing pull process steps, and (e) managing toward perfection through the Kaizen process (Koay & Sorooshian, 2013).

Lean Six Sigma (LSS): Lean Six Sigma is a business methodology to increase customer satisfaction, reduce cost, and improve quality and process speed (Laureani, Brady, & Antony, 2013).

Process improvement (PI): Process improvement is a management method of continuous assessment of quality and efforts to increase organizational performance and quality and is synonymous with Six Sigma, quality, and business process reengineering (Bani-Hani & Omari, 2012). According to Campos (2013), the Lean PI steps consist of identifying the problem, analyzing the problem, eliminating workforce errors, and preventing system-related errors.

Six Sigma: Six Sigma is a statistical process control methodology consisting of well-defined sequence steps: define, measure, analyze, improve, and control (DMAIC; Galli & Handley, 2014; Ismyrlis & Moschidis, 2013).

Assumptions, Limitations, and Delimitations

Assumptions

Assumptions are statements of belief and realistic expectations of the inquirer (Kirkwood & Price, 2013). The inquirer states the assumptions to establish truth in research without empirical evidence (Kirkwood & Price, 2013). A fundamental assumption is that participants will provide truthful and accurate information. A second assumption is that a case study is the appropriate design to explore strategies that logistics leaders use to implement PI in the aviation industry.

Limitations

Limitations are factors in the design or methodology of a study that affect the application or interpretation of the results of the study: potential weakness of the study (Kehoe & Wright, 2013). Small sample size is a limitation; research findings may not apply to a broader population (Venkatesh et al., 2013). Participants and researchers' biases are other limitations (Madera, 2013). The participants' biased responses to interview questions and a researcher's biased interpretation of the data have an effect on research findings (Yilmaz, 2013). Yin (2012) noted that the researcher's openness to contrary findings is a test for bias. I used bracketing, setting aside preconceived conceptions (Pereira, 2012), to mitigate bias. A final limitation is the results of the study are not generalizable to every aviation organization.

Delimitations

Delimitations are features of the study that the researcher chooses, in order to set the scope and boundary of the study to answer the research question (Mitchell & Jolley,

2010; Yin, 2014). The population for this study was logistics leaders in the federal government at a military base in Georgia, the scope of the study. The population size, data collection process, and time constraints bound the scope of the study. Audio recording is a criterion for the study. The results of this study might apply to military organizations and not to all industries.

Significance of the Study

This study is may be valuable to military organizations. Some organizational leaders lack a thorough understanding of PI philosophies and techniques (Yapa, 2012). Successful implementation of PI requires further investigation (Krueger, Parast, & Adams, 2014), especially in the area of implementing PI in service organizations to increase theory development (Chakraborty & Tan, 2012). Brun (2011) found that there is a lack of literature concerning successful implementation of PI in Italian companies and recommended further research to develop a roadmap for successful implementation of PI.

Contribution to Business Practice

Process improvement affects all leaders in the military (O'Connell, Littleton-Kearney, Bridges, & Bibb, 2012) and business leaders across many industries to include for-profit (Baia, 2015) and nonprofit (Al-Tabbaa, Gadd, & Ankrah, 2013). Members of the DoD task group recommended that leaders in the DoD initiate actions to create a cost management culture, reduce departments' operating costs, and establish processes for performance improvement (Defense Business Board, 2014). This study may be valuable to military, federal government, nonprofit, and business organizations; leaders might use the information in the study to improve performance and profitability. An increase in the

body of knowledge for implementing PI could occur based on the result of the study. Managers who lack the understanding and knowledge of CSFs failed to achieve successful implementation of PI (Dabestani et al., 2014). Nasslund (2013) concluded that organizational change methods for PI, such as Lean and Six Sigma, are not equally appropriate for all organizations. Consequently, organizations may require different strategies for successful implementation of PI (Dabestani et al., 2014).

Leaders and managers require a strategic business approach that extends beyond the basic PI methodology of define, measure, analyze, improve, and control to achieve continuous PI (Cheng, 2013). To achieve continuous PI, leaders must perceive PI as a strategic change process and integrate factors of culture, leadership, and communication into the DMAIC process (Lertwattanapongcha & Swierczek, 2014). The findings in the study could consist of a model, beyond the generic DMAIC process, which is critical to leaders' understanding of factors that are necessary for successful implementation of PI. Nawanir, Lim, and Siti (2013) used a quantitative method, with a stratified random sampling procedure, to investigate the relationship between lean practices, operations performance (OP), and business performance (BP) in large Indonesian manufacturing companies. Nawanir et al. found that Lean practices have a positive and significant impact on both OP and BP. The manufacturing leaders increased profitability, improved productivity, and reduced costs by managing with an integrative and disciplined approach to PI (Nawanir et al., 2013).

This study is important to the body of knowledge of PI; leaders might gain an in-depth understanding of implementing PI. Organizational leaders might use the results of

this study to improve processes and performance to gain a competitive advantage. The PI's strategies for improving performance and cost efficiency apply to not just the military, but to other industries as well. Process improvement is a global phenomenon, but the systematic methodology of PI requires further study to establish a conceptual foundation for private and public organizations (Cheng, 2013).

Implications for Social Change

The purpose of this study was to explore the strategies that logistics leaders use to implement PI in the military aviation industry. The implication for social change is the potential for other United States and Allied forces to enhance humanitarian efforts and border security. Additionally, the experiences of these logistics leaders may inform external stakeholders of additional leadership insight to improve workforce dignity and the development of individuals into a socialized work environment for PI. Sensei and PI consultants, such as Six Sigma Black and Green Belt leaders, could use the results to formulate new policies and strategies to develop new cultures for implementing PI.

A Review of the Professional and Academic Literature

The review of the literature is a means to provide a deeper understanding of a phenomenon (Isaacs, 2014). Based on an assessment of the literature review, organizational leaders who use PI and the TOC as short-term tactical tools do not achieve successful continuous improvement (Alsmadi, Almani, & Khan, 2014). The emergent themes for successful implementation of PI were the systems interaction of CSF, leadership, performance measurement, organizational change, and strategic management.

The literature review consists of a means to understand the impact of constraints that leaders must consider to implement successful PI (Hagen & Park, 2013). The research subquestions, based on the constraints, is a means to explore the participants experiences with implementing PI. The literature review for this study includes five main topics: (a) the TOC and related theories, (b) applications of the TOC, (c) historical perspective of process improvement, (d) points of views of PI, and (e) critical strategies for successful PI.

The strategy for the review consists of a broad and focused search of various sources across multiple disciplines: scholarly journal articles, books, and electronic media. Key sources from search engines on the Walden University Library research databases included Business Source Complete, ABI/INFORM Complete, ProQuest, SAGE Premier, and ScienceDirect. The literature review consisted of an initial search list of keywords of process improvement: *process improvement*, *Six Sigma*, *Lean*, *total quality management*, *quality*, *A3 process*, and *theory of constraints*. Additionally, the focused keyword searches, after identifying key elements of successful PI implementation based on the initial searches, were *organizational management*, *performance management*, *leadership*, *organizational culture*, and *strategic management*. I identified and evaluated more than 800 articles over a period of 24 months and used 442 peer-reviewed articles and 7 books. A detailed description of sources by publication date is in Table 1. Of the total sources, 98% are peer reviewed with 118-peer-reviewed sources in the literature review. Additionally, 86% of the total sources have a publication date less than 5 years from the anticipated completion date (CAO approval).

Table 1

Details of Literature Reviewed by Year of Publication

	Older than 5 years	2013	2014	2015	2016	2017	Total
Peer-reviewed articles	56	160	157	58	10	1	442
Books	6				1		7
Government documents		1	1	1			3
Totals	62	161	158	59	11	1	452
Percentage peer reviewed							98%
Publication less than 5 years							86%

Historical Perspective of PI

The quality movement formed the foundation for the multiple approaches to the methods of PI (Valmohammadi & Roshanzamir, 2015). Deming originated the philosophy of quality in Japan, during the mid-1940s, as a statistical method and design concept to improve manufacturing and quality of life (Jayaraman, 2013). Beginning in industry with Deming in 1966, quality improvement had a focus on statistical quality output for production (Brun, 2011). The success of the initial PI studies of Deming and Juran, consisting of statistical quality control strategies and training, accounted for further fundamental concepts and studies of total quality management (TQM)during the industrial age (Brun, 2011). Business leaders used quality as a management intervention to improve production (Drohomeretski, da Costa, Gouvea, de Lima, & Garbuio, 2014).

The early intervention focus of leaders in 1980 to improve performance consisted of business process reengineering (BPR), continuous improvement, TQM, the Balanced Score Card, and Six Sigma (Brun, 2011). Brun (2011) noted that the result of Japanese TQM success in industry became the foundation for the widespread global use of process

improvement in the 1980s. Organizational leaders of firms in the United States adopted TQM practices in the early 1980s; leaders in the Motorola Corporation led the movement (Jayaraman, 2013). During the 1980s, the initial PI processes and controls implementation strategies were product development, production quality, and cost consciousness (Parkes, 2015). The subsequent quality transformation consisted of TQM and American quality models of reinventing government, Malcolm Baldrige Award, Six Sigma, and the Federal National Performance Review initiative (Brun, 2011). The various methods and intervention strategies were applicable to industry processes (Chakraborty & Tan, 2012). The success of early intervention was the reason for further evolution of strategies for PI (Brun, 2011).

Total quality management evolved into the Six Sigma method of PI based on the efforts of leaders of Motorola in 1986 (Brun, 2011). The Motorola leaders included the Senior Engineer of the Government Electronics Group, the VP and Senior Quality Assurance Manager, and the CEO of Motorola (Brun, 2011). The concept and method of Six Sigma emerged as a methodology to measure quality to improve production (Pulakanam, 2012). Originally conceived as an approach to improve manufacturing processes, efficiency, and product quality, Six Sigma further developed into an organizational-wide management approach for process improvement at General Electric (GE) during the mid-1990s (Brun, 2011; Pulakanam, 2012).

To achieve desired shareholders' expectations and profit margins, organizational leaders, during the mid-1990s, expanded the focus of quality (Karim & Arif-Uz-Zaman, 2013). Organizations expanded the focus of quality from production to customer

satisfaction and efficiency in key business functions of finance, accounting, services, acquisition, and labor processes (Ngambi & Nkemkiafu, 2015). The subsequent adoption of TQM by Fortune 500 and other companies occurred in the 1990s based on the pioneering efforts of leaders in the General Electric Company (Ngambi & Nkemkiafu, 2015). Fortune 500 companies including American Express, Boeing, Caterpillar, Fidelity Investments, Honeywell International, J.P. Morgan, Chase, Johnson and Johnson, Kodak, Lockheed Martin, Maytag, Northrop Grumman, Sony, and Texas Instruments adopted TQM practices to improve product quality, eliminate defects, and reduce process variability and operating costs (Ngambi & Nkemkiafu, 2015). A strategic shift occurred in TQM based on Deming's 14 points, a management guide to achieve successful PI (Ali & Ivanov, 2015). The 14 points included key elements in leadership, training, performance, culture change, quality, and production to achieve PI success (Ali & Ivanov, 2015). Leaders of nonmanufacturing businesses adopted TQM based on Deming's 14 points (Gerst, 2013). Nonmanufacturing leaders changed the focus of PI to setting expectations, identifying performance targets, and assigning accountability to subordinates (Gerst, 2013). Even though the beginning of PI dated back to the 1940s, scholars have continued to focus research on the phenomenon. Researchers accomplished 118 Lean Six Sigma studies from 2003-2011. However, 15% of the studies occurred from 2003-2007 and 85% occurred from 2008-2011 (Zhang, Irfan, Khattak, Zhu, & Hassan, 2012). Increasingly, businesses used PI to remove constraints in production and developed strategies for informal and formal quality improvement

methods (Davis et al., 2014). Consequently, the TOC constitutes the conceptual framework for this study to explore PI.

TOC and Related

In this qualitative case study, I explored the strategies that logistics leaders use to implement PI in the aviation industry. The premise of the TOC is that companies can gain a competitive advantage by generating more money by increasing throughput, decreasing inventory, or reducing operating expenses (Sale & Sale, 2013). Supporting themes that are means for influencing the performance of a firm in a dynamic changing environment are systems theory, management theory, leadership theory, and knowledge-based theory.

According to von Bertalanffy (1972), the seminal theorist of general systems theory, the organization as a whole is greater than the sum of the parts. As a system, the organization is a chain of interrelated components or subsystems (Chou et al., 2012). Systems theory focus is a complete organizational system involving the interaction of human beings, sociality, and technology working in synchronization to ensure achievement of organizational goals (von Bertalanffy, 1972).

The TOC, as a conceptual framework, is a systems-based management philosophy to improve business profits (Chou et al., 2012). The systematic approach to the TOC, viewing systems and processes as series of dependent events, is a means for problem solving (Sadat, Carter, & Golden, 2013). Organizational problems, resulting from cause and effect interactions between systems, are organizational constraints and goal inhibitors (Sadat et al., 2013).

In a case study, Chou et al. (2012) used a systems approach to the TOC for PI in an aerospace industry. The aerospace company leaders identified constraints and developed strategies to eliminate systems problems in managerial management and procurement. Sadat et al. (2013) used a systems dynamics approach to develop a TOC model for publicly traded for-profit companies and expanded the model to publicly funded health systems. Sadat et al. applied the model of local performance measures of inventory, throughput, and operating expenses to hypothetical patients and concluded that the model is appropriate for healthcare policymakers to increase the quality and quantity of lives. The foundation for creating effective problem solving strategies based on the TOC is for leaders to approach the TOC from the perspective of organizational systems (Chou et al., 2012).

Organizations operate as systems of chain links, or as networks of chains for eliminating constraints and achieving organizational goals (Goldratt, 1990). Mishra and Palo (2014) used the TOC in a phenomenological design to explore participants' experiences involving structural, policy, and human resource systems. Mishra and Palo found that, to prevent failure in achieving organizational goals, business leaders eliminate constraints that are inhibitors in the performance of a system relative to the designated goals. Cheng (2013) used a quantitative method to show relationships between integrating Six Sigma systems with business strategy to improve quality performance. Using variables of business strategy, Six Sigma implementation, and quality performance, Cheng established links between Six Sigma, business strategy, and performance in Taiwanese manufacturing organizations. Cheng found that the

integration of PI programs with the business strategy improved business performance. The CSFs in the integration of Six Sigma with business strategy involved systems of education and training of quality management, quality-enhancing skills, and Six Sigma project management (Cheng, 2013). Constraints, resulting from systems interaction, affect systems performance and leaders abilities to achieve organizational goals (Mishra & Palo, 2014).

The foundation of the TOC is viewing the organization as systems (Goldratt, 1990). Systems constraints are the factors in the network of systems that affect systems' performance in relations to achieving organizational goals (Mishra & Palo, 2014). The five-step TOC model is an appropriate leadership strategy for analyzing and managing constraints (Mishra & Palo, 2014). However, the approach and techniques that organizational leaders use in the TOC process to identify, exploit, subordinate, and elevate the constraints are diverse (Mishra & Palo, 2014). The implication of the literature review is that researchers explored the TOC as a means of identifying and removing organizational constraints; however, few have explored the TOC from and organizational wide strategy to achieve a competitive advantage.

TOC and management theory. Strategic management is a strategic, long-term, approach to leaders' decision-making and organizational adaptation to gain a competitive advantage (Bettis, Gambardella, Helfat, & Mitchell, 2014). The approach to strategic management involves models to improve organization performance to gain competitive advantages (Porter, 1980). Porter (1980) provided a strategic management model to help leaders gain competitive advantage. The elements of the competitive force model were

entry barriers, threat of substitution, bargaining power of buyers, bargaining power of suppliers, and rivalry among industry incumbents (Porter, 1980). Through organizational analysis using the five-force model, leaders determine the inherent profit potential of an industry or subsegment of an industry (Porter, 1980). Organizational use of diverse strategic management models for PI accounts for differences in performance, returns, and value across the firm to gain a competitive advantage (Sigalas & Economou, 2013).

Leaders use strategic management as a strategy to set the future direction of an organization to gain competitive advantages (Florea & Flore, 2014). Jaoua and Radouche (2014) performed a quantitative study of strategic management in Tunisian companies and found strategic management has a direct effect on global performance. Leaders that adopted a strategic management model of financial objectives, customer satisfaction, internal processes to achieve goals, and learning and growth processes achieved improved global performance (Jaoua & Radouche, 2014). Florea and Flore (2014) argued that strategic management is a key element of organizational success. Organizations must plan and implement strategies to capitalize on opportunities in the external environment, to mitigate risks, to establish strategic objectives adapted to the environment, and to find strategies and resources needed to accomplish strategic objectives (Florea & Florea, 2014). The domain of strategic management is future oriented, vast, and spans organizational core competences to achieve performance differentiations (Drouin & Jugdev, 2014).

The TOC is a management method for achieving the ultimate organizational goal of making money through performance improvement (Gupta, Sahib, & Chahalb, 2013).

The five-step TOC model is a process for removing constraints (Mathu, 2014). Steps in the TOC model are (a) identify the system constraints, (b) decide how to make use of the constraints of system, (c) all nonconstraint operations support the decision of Step 2, (d) elevate the system constraints, and (e) return to Step 1 after eliminating the constraints in Step 4 (Huang, Chen, Chiu, & Chen, 2014). The model is a means to improve performance (Huang et al., 2014). Based on a quantitative study of 180 U.S. business companies, Sale and Sale (2013) found a positive relationship between the practice of TOC and business unit financial performance. Companies that used the TOC improved financial performance while, the financial performance of companies that did not use the TOC deteriorated during the same timespan.

Unlike the five-forces, long-term model, the TOC is a short-term tactical tool and is most effective when used with other improvement methods (Alsmadi et al., 2014). Leaders use the TOC as an internal organizational strategy to improve processes (Sale & Sale, 2013). Porter's (1980) model is an internal and external strategic approach to obtaining a competitive advantage. Organizational leaders that analyze competitors by evaluating substitute products, identifying suppliers and buyers, and measuring competitive rivalry, can identify and create competitive strategies (Porter, 1980). The tactical management approach to the TOC enhances leaders' ability to adapt to changing external circumstances, which is the core benefit of the TOC (Davis et al., 2014).

TOC and leadership theory. The role of leadership is essential to achieving successful business improvement using the TOC (Gupta et al., 2013). Leadership theory is a means to view the effect of leadership style on employees' motivation (Bacha, 2014;

Wang, Sui, Luthans, Wang, & Wu, 2014). Wang, Sui, Luthans, Wang, and Wu (2014) argued that authentic leadership, leaders that make decisions based on individual values and use openness and truthfulness to build relationships with followers, is a motiving factor for job performance. Wang et al. used a quantitative, non-random sampling procedure of employees in a Chinese logistics firm, to examine the impact of authentic leadership on performance. Using leader-member exchange, positive psychological resources, and job performance as dependent variables, Wang et al. found positive psychological resources is a moderator for positive relationship between authentic leadership and job performance. Moreover, the complementary congruity between leadership behaviors and follower psychological resources, workers that possess resiliency and self-efficacy, contributes to follower performance (Wang et al., 2014). The physical or psychological traits of leaders, leadership behavior, leadership traits and behavior, and transformational leadership are leadership strategies for motivating employees (Wang et al., 2014).

McDonagh, Bobrowski, Hoss, Paris, and Schulte (2014) argued that the modern approach to leadership, transformational leadership style, is an effective strategy to gain the confidence and trust of subordinates, change expectations, and motivate workers to work toward commons goals. Fundamental concepts of transformational leadership theory are (a) individual consideration, focusing on the personal interest in people; (b) intellectual stimulation, fostering creativity, promoting understanding, and solving problems; (c) inspirational motivation; and (d) idealized influences, providing a clear vision, instilling pride, and earning respect (Sahin, Çubuk, & Uslu, 2014). Bacha (2014)

performed a quantitative study, random sampling procedures to select 100 employees working in French companies, to study the relationship between transformational leadership, task performance and perceived measures of job characteristics in French firms. Bacha found that there is a partial relationship between transformational leadership and follower task performance. Additionally, a partial relationship exists between transformational leadership and follower perceptions of core job characteristics (Bacha, 2014). Bacha argued that transformational leadership is a key element in improving business performance. Transformational leaders focus on creating emotional links with workers and inspiring followers to change expectations, perceptions, and motivations to work toward achieving collective goals (Bacha, 2014).

Transformational leadership is a factor in the successful implementation of the TOC (Gupta et al., 2013). Transformational leaders motivate, create a vision, and influence the attitudes of followers (Pradhan & Pradhan, 2015). Gupta et al. (2013) noted, based on a case study of the PQ Company, that highly motivated cross-functional teams, alignment of individual goals with company goals, and innovation, were factors in implementing the TOC. Additionally, based on a quantitative study, Mehmood, Qadeer, and Ahmed (2014) found a significant association between organizational performance, continuous improvement, and employee involvement, a form of transformational leadership (Mehmood et al., 2014). Change is a key element in the TOC (Tayade & Chavan, 2013) and based on the influence of leaders, employees are less resistant to change both attitudinally and behaviorally (Carter, Armenakis, Feild, & Mossholder, 2013).

TOC and knowledge-based theory. The knowledge-based view (KBV) theory is relevant to the TOC. Knowledge and expertise are organizational resources and primary sources for gaining the competitive advantage (Grant, 1996). Organizations use organizational learning, technology management, and behavioral cognition as knowledge-based differentiations (Grant, 1996). Azmawani, Siew, Sambasivan, and Wong (2013) performed a quantitative study to determine the relationship between knowledge application and managerial skills and organizational effectiveness, managerial skills and organizational effectiveness, and knowledge protection and managerial skills and organizational effectiveness. Azmawani et al. (2013) used randomly selected management participants from diverse manufacturing firms: electric and electronic products, chemical products, food and beverages, automotive components, packaging, canning and resins, and firms manufacturing rubber glove products and steel components for data collection. Azmawani et al. posed a model of training and processes of knowledge management to indicate the relationship with organizational effectiveness. Elements of knowledge management, acquisition, application, protection, and elements of types of training skills, individual, managerial, and process, affect organizational performance (Azmawani et al., 2013). Azmawani et al. found that the elements of types of training skills have a positive relationship with organizational effectiveness. Additionally, the elements of knowledge management are means to moderate the relationship between individual skills and organizational effectiveness (Azmawani et al., 2013). Knowledge management must be an integral part of the organizational quality strategy (Sivakumar, Devadasan, & Murugesh, 2014).

Knowledge is an important factor in the TOC CRT to FRT change process (Al-Zubi & Khamees, 2014). Huang et al. (2014) inserted a knowledge transfer step in the TOC to ensure implementation success. Composing the team of individuals who have knowledge of the processes enhances team's success and leaders' success in using the TOC to improve organizational performance (Huang et al., 2014). The selection of appropriate CRT team members is a factor in developing strategies to identify and resolve undesired effects (Librelato, Lacerda, Rodrigues, & Veit, 2014). Mehmood et al. (2014) found that employee involvement is significantly associated with organizational performance. Employees are responsible for productivity and performance enhancement (Mehmood et al., 2014). Companies gain the competitive advantage by improving the abilities and skills of workers through training (Mehmood et al., 2014). Employees are the most valuable resource for firms (Mehmood et al., 2014).

Procuring new resources, the elevation of constraints in Step 4 of the TOC model, is a strategy in the TOC (Chou et al., 2012). Investing in new equipment, business leaders improve the capacity in the constrained process to eliminate the bottleneck (Moynihan, 2014). The strategies for the PQ Company, the case-study research company, to elevate constraints were capital investments, new products, employing overtime, and outsourcing (Gupta et al., 2013). Hsiang-Han and Tsung-Ting (2016), using a case study design, found that innovative resource capability is a long-term strategy for leaders to gain the competitive advantage. Khuong and Hoang (2015) argued that employees are an important company asset because workers create values for firms.

Knowledge of organizational performance measures are necessary for organizations to compete in a turbulent market environment (Mensah & George, 2015). Leaders use performance measures to improve production and to manage operational processes efficiently (Mensah & George, 2015). Teeratansirikool, Siengthai, Badir, and Charoenngam (2013) found that relationship existed between competitive strategy and performance measures. Performance measures are indicators of performance that leaders use to create organizational value through profit, cash flow, new product development, and personnel development (Teeratansirikool et al., 2013). Performance management is a critical element in the process of identifying performance problem and operational efficiency (Mensah & George, 2015); however, establishing systems of goal and performance measures are prerequisite steps to the role of leaders in applying the TOC (Sadat et al., 2013).

TOC and organizational culture. Organizational culture is a subsystem in systems theory and a means to understand human systems (Curry et al., 2015). Elements of organizational culture, norms, values, and beliefs are factors that affect employees' behavior, thoughts, and feelings (Marchand, Haines, & Dextras-Gauthier, 2013). Organizational people and culture affect the successful implementation of the change process (Talib et al., 2013). Employees' attitudes toward change affect organizational change (Haffar, Al-Karaghouli, & Ghoneim, 2014; Hanif, Khan, & Zaheer, 2014). Organizational change failure occurs based on employees' attitudes of resistance to change and lack of trust (Manfreda, Kovacic, Stemberger, & Trkman, 2014). Hanif et al. (2014) used a quantitative method and purposive sampling to find the impact of

organizational resistance to change resulting from the implementation of business process reengineering (BPR). Hanif et al. found, based on 150 questionnaires from participants in the State Bank of Pakistan, that human factors, organizational factors, and information technology affect BPR initiatives. Hanif et al. concluded that workers who have positive attitudes toward business process reengineering show less resistance to change than those with negative attitudes. Companies increase the chance of the successful implementation of business process reengineering change when employees are motivated, satisfied, and involved in the improvement process (Hanif et al., 2014).

Organizational culture is an essential element in organizational change (Garcia et al., 2013). Based on a quantitative study, using participants from Syrian manufacturing companies, Haffar et al. (2014) found that an organization's emphasis on group culture and adhocracy culture is positively associated with the level of individual readiness for change. A group culture characterized by teamwork, participatory environment, and empowerment, is conducive for organizational change (Haffar et al., 2014). Additionally, a supportive attitude for change is characteristics of an adhocracy culture, a culture of entrepreneurship, risk-taking, or innovation. In contrast to group culture, Haffar et al. found that hierarchy and market culture types have strong and negative influences on individuals' readiness for change. In the hierarchical culture and market culture organizations, members must follow formal and complex rules, policies, procedures, and stipulated relationships (Haffar et al., 2014). Members perform tasks according to fixed rules and do not have the opportunity to recommend change and innovation (Haffar et al.,

2014). Haffar et al. concluded that members are less likely to accept new PI change initiatives. Consequently, organizations fail to achieve continuous PI.

TOC and change. Organizational change is a key element in the TOC (Goldratt, 1990). Mishra and Palo (2014) argued that the TOC is a method to exploit organizational change based on internal and external constraints. Company leaders can use the TOC as a change process to eliminate constraints and improve performance (Tayade & Chavan, 2013). Organizational leaders use the current reality tree (CRT) and the future reality tree (FRT) diagrams and the value stream maps of the TOC processes in Steps 2 thru 4 to identify constraints and to implement strategies to remove constraints (Alsmadi et al., 2014). In a case study of an aerospace industry, Chou et al. (2012) used the TOC for PI. Chou et al., as researchers and consultants to the company, used the TOC to resolve supply chain bottlenecks and to make changes to processes in material-management systems. Case company leaders used the TOC's thinking process method as a change process (Chou et al., 2012). Elements of the process were (a) what to change, (b) what to change to, and (c) how to implement the change (Chou et al., 2012). The TOC was a means for leaders to identify core problems, identify strategies, and implement strategies to improve inventory management and material management. In a case study, Taylor and Esan (2012) explored the use of TOC as a conceptual framework to explore strategies to improve agriculture performance in Nigeria. Following the thinking process of the TOC change process, Taylor and Esan identified constraints, determined solutions, and implemented change solutions (Taylor & Esan, 2012). Organizational leaders use the

change process to improve performances, elevate business efficiencies, and gain a competitive advantage (Sharma et al., 2015).

TOC and Application in the Manufacturing Industry

The approach to the TOC differs based on organizational goals and constraints (Chou et al., 2012). In the manufacturing industry, organizational leaders used a combined approach to the TOC to increase throughput performance by eliminating constraints in production, supply chain, sales, labor, performance assessment, and technology (Huang et al., 2014; Librelato et al., 2014). For example, Huang et al. (2014) combined the TOC with activity based costing (ABC) to study organizational production. Huang et al. used a qualitative case study to explore manufacturing improvements based on the TOC. In an automotive, electronics manufacturing firm, the TOC process had the focus of eliminating constraints in production and inventory management to reduce operational expenses (Huang et al., 2014). The TOC team members combined the five-step TOC approach with activity based costing (ABC) to identify constraint areas in sales and resolved constraints through deploying idle labor, creating performance assessment, and investing in technology (Huang et al., 2014).

Librelato et al. (2014) combined the TOC and Value Stream Mapping (VSM) as an approach to increase profit. The VSM process is a tool for leaders to identify waste and systems-wide problems from raw material to product, whereas the TOC process-thinking model is associated with finding the root of problems (Librelato et al., 2014). Leaders in the medium sized automotive company used the TOC and VSM to improve production of automotive parts. The results of using the TOC process were increased

speed of the production, reduced total lead time, improved product delivery, and reduced stock levels (Librelato et al., 2014). A combined approach of the TOC thinking process model and VSM was a model to eliminate waste and constraints in the production cycle (Librelato et al., 2014). The steps in the TOC's thinking process model were selecting the constrained products, mapping the current state to create a CRT map, creating a FRT map, and preparing and implementing an implementation plan (Librelato et al., 2014). An important element in the CRT process was the understanding of systems integration, effect-cause-effect relationships (Librelato et al., 2014). Divisional product integration, relationship with suppliers, and a change process from the current state to future state were key strategies to eliminate constraints (Librelato et al., 2014). The thinking process model and VSM process are analysis and planning tools to improve processes (Alsmadi et al., 2014); however, a process to determine implementation success is necessary for organizational success (Sadat et al., 2013).

Performance measures for manufacturing throughput capacity and operational cost are key elements in identifying the constraints and assessing the success of using the TOC to improve performance (Huang et al., 2014; Sadat et al., 2013). Performance measures are essential for identifying organization value (Sadat et al., 2013). Huang et al. (2014) used a combined TOC and ABC to seek the best cost object combination by identifying bottlenecks in each operation. Case company benefits in using the TOC with ABC were the removal of non-value-added operations by decreasing production time, implementing methods to decrease total cycle time, and increasing output capacity (Huang et al., 2014). Effective strategies for removing constraints were implementing a

cost management system, revising policies and processes, and implementing methods for product improvement (Huang et al., 2014). Using the time to production and production cost per unit time, operating projects, operating time, and activity drivers, company leaders can improve performance and reduce cost (Huang et al., 2014).

Integrating the TOC with other improvement methods can lead to a competitive advantage (Alsmadi et al., 2014; Lin, Chu-hua, & Kang-Wei., 2013). Alsmadi et al. (2014) performed a case study in a manufacturing company to explore the integration of the TOC and ABC to enhance decision making in a Lean context. Leaders of the plastic container manufacturing company integrated TOC and ABC as a strategic management tool (Alsmadi et al., 2014). By combining the TOC and ABC, company leaders gained a process to determine long-term optimal product mix to increase profits (Alsmadi et al., 2014). Combining the TOC with ABC, leaders of Lean processes can acquire accurate, timely, and reliable cost information to make decisions about pricing, production line development, process improvements, and product-mix (Alsmadi et al., 2014).

TOC Application in the Service Industry

Manufacturing leaders achieved success by combining the TOC with another management strategy (Huang et al., 2014; Librelato et al., 2014); however, leaders in the service industry used a holistic approach. In the service industry, the focus of the TOC was increasing throughput performance by eliminating constraints in organizational structure, policy, and personnel (Mishra & Palo, 2014; Oglethorpe & Heron, 2013). Oglethorpe and Heron (2013) took a holistic approach to the TOC to improve performance in the food service industry. Oglethorpe and Heron used a case study design

of 23 cases to explore the entire supply chain of the food service products. Constraints in the food service industry were the nature of the market, nature of the product, employment and skills, and institutional constraints (Oglethorpe & Heron, 2013). Other areas of constraints were supply chain relationships, certification, policy and regulatory constraints, and personal beliefs (Oglethorpe & Heron, 2013). Using the TOC from a holistic view, food service leaders eliminated supply chain constraints, physical waste, financial wastes in disposal costs, and labor waste (Oglethorpe & Heron, 2013). Understanding the constrained process, owners can improve the processes for distribution networks, regional food groups, and supply chain centers (Oglethorpe & Heron, 2013).

Eliminating waste was a key focus in using the TOC in manufacturing; however, improving employee performance and the organizational policy was the focus of the TOC in the administrative service field (Mishra & Palo, 2014). Mishra and Palo (2014) selected a phenomenological design and the TOC to explore lived experience of leaders' constraints in the Indian Administrative Services. Based on emergent themes, participants identified administrative constraints as bureaucratic processes, political interference in administration, quantum of responsibilities, human resources, and policy issues (Mishra & Palo, 2014). The thematic grouping of constraints was structure, policy, and human resources (Mishra & Palo, 2014).

Mishra and Palo (2014) identified the benefits of eliminating administrative constraints and the effect of the constraints. Mishra and Palo (2014) concluded that by eliminating the thematic constraints leaders could reduce rising workloads, improve decision making, and gain administrative efficiency and workers' productivity.

Structural bureaucratic constraints, policy and regulations, decision making, and position power, affect administrative performance (Mishra & Palo, 2014). Policy constraints of encroachment and interference affect performance (Mishra & Palo, 2014). Misaligned and inaccurate interpretations of policies that result in inaction, confusion, or wrong actions are inhibitors to performance (Mishra & Palo, 2014). The result of political interference in administration is centralization and corruption (Mishra & Palo, 2014).

Organizational culture and resources affect performance in the service industry (Mishra & Palo, 2014). A corporate culture of corrupt hiring practices results in constraints on the span of control, employee motivation, and performance (Mishra & Palo, 2014). Additionally, junior officers in Administrative Services refused to take responsibility due to a culture of top down decision-making and centralization of power. The result of the constraints is a culture of inaction; slow processes, slow decision making, and lengthen implementation time in achieving objectives (Mishra & Palo, 2014). Human resource constraints, lack of skilled workers, lack of motivation, poor interpersonal skills, and lack of an appraisal system affect workers' attitude and performance (Mishra & Palo, 2014). Rising workload, inadequate resources, and a culture of inefficiency are the effects of the aforementioned constraints (Mishra & Palo, 2014).

Mishra and Palo (2014) only used the TOC as a tool to identify problems; however, while in the roles of researchers and consultants, Zivaljevic (2015) used an exploratory design to explore the use of the TOC approach as a method to solve traffic congestion in a New Zealand transport organization. Using the TOC's process steps,

Zivaljevic identified bottlenecks and implemented solutions to improve the transportation system. Successful application of the TOC resulted from the process analysis team's ability to identify change strategies, assess the impact of proposed strategies, and identify and implement the change process (Zivaljevic, 2015). Zivaljevic concluded that the TOC is a method for leaders to improve the utility of the land transportation systems without major changes in resources, legislative action, and roadwork design.

Zivaljevic (2015) failed to consider performance measures in the TOC process. Sadat et al. (2013) argued that the TOC begins with systems' owners setting goals and establishing units of measures to evaluate performance and cost. Performance measures are necessary to determine the impact of the injection strategies to improve profit (Sadat et al., 2013). Cost, quality, lead time, processing time, operations time, on-time service delivery, and customer satisfaction are measurements of performance that affect manufacturing (Karim & Arif-Uz-Zaman, 2013). In banking operations, resource utilization, revenue, and employee satisfaction are performance measures (Moreira, Castano, Sousa, & Meneses, 2014).

TOC Application in Healthcare

The TOC was an applicable strategy to improve performance in healthcare (Gjolaj, 2016; Ryan et al., 2013). Using different TOC approaches to the TOC, Ryan et al. (2013) improved healthcare performance by removing constraints in policies, resource, and wait time. The TOC based on a change process is an effective method to improve processes (Librelato et al., 2014). However, using the TOC solely as a change tool without incorporating other methods to assess performance, organizations fail to

achieve a long-term competitive advantage (Alsmadi et al., 2014). Ryan et al. (2013) combined the TOC and Lean methods to improve process flow in a hospital emergency department (ED). The combination of Lean thinking and the TOC was the strategy for removing constraints (Ryan et al., 2013). The Lean process of VSM is a method for identifying waste, non-value steps (Ryan et al., 2013). The TOC was the method for identifying and prioritizing constraints for elimination (Ryan et al., 2013). Using a benchmark wait time of 4 hours as the National Health Service standard, Ryan et al. collected wait time data based on the Lean VSM concept (Ryan et al., 2013). Data analysis, SPSS statistical software package, was the process to identify bottlenecks (Ryan et al., 2013). Ryan et al. found a significant difference in the mean times between the under and over 4-hours groups in four variables: wait for radiology, wait for the in-patient team, wait for a bed, and the ED doctor turnaround time (Ryan et al., 2013).

The combined method of Lean and the TOC was an effective method to identify constraints (Librelato et al., 2014); however, Ryan et al. (2013) did not consider strategies to eliminate the bottleneck or implement performance measures to assess continuous improvement. The focus of the healthcare leaders was patients' time with the physician and not the entire value stream (Ryan et al., 2013). Applying the TOC throughout the value chain, organizational leaders achieve sustained value creation (Mathu, 2014).

TOC Application in Logistics

Applying the TOC from a holistic perspective was a means to improve logistics operations (Chou et al., 2012; Lin et al., 2012). Lin et al. (2012) used a qualitative case

study to explore logistic management planning in the national research institution. Using the TOC as the conceptual framework, Lin et al. provided a deeper understanding of the core issues that affect logistics reengineering, logistics management processes, and competitive power under the current environment. Lin et al. used a five-logic tree model of current reality tree, conflict tree, future reality tree, prerequisite reality tree, and transition tree to identify problems and develop solutions. The model is a change process for leaders to decide what items to change, what to change items into, and how to cause the change (Lin et al., 2012). System structure, performance measurement, and organizational culture are bottlenecks, diagramed as the conflict tree, in logistics management that prevents improvement (Lin et al., 2012). The key strategy for achieving a successful FRT state was reorganization, the establishment of a logistics management department, to manage the entire supply chain process (Lin et al., 2012). Lin et al. (2012) used a holistic approach to identify constraints in the entire logistic value chain, logistics management planning, storage management, research and development, manufacturing, and distribution of products to points of sales (Lin et al., 2013). The establishment of a logistics management department was a means to achieve an organizational wide integrated approach to reduce inventory, lower costs, increase management efficiency, and achieve competitive advantages (Lin et al., 2012).

An integrated approach to the application of the TOC is an element of eliminating constraints (Chou et al., 2012; Mathu, 2014). Mathu (2014) explored logistic supply chain operations in the South Africa Mining company by using the TOC as a conceptual framework. The TOC is an effective tool for effectiveness, efficiency, and profitability in

supply chain operations (Mathu, 2014). Using a qualitative case study, Mathu identified constraint themes based on interview data. The constraints themes in the supply chain operations were the properties of coal, legislative policy, stakeholders' operations, transportation, and personnel (Mathu, 2014). Mathu identified public-private partnership as the critical element for leaders to eliminate constraints (Mathu, 2014). The partnership between key stakeholders in mining production, government, suppliers, transportation, and customers is a requirement for goal attainment (Mathu, 2014).

Implications of the results are that organizational leaders must apply the TOC throughout the supply value chain (Chou et al., 2012; Mathu, 2014). A holistic evaluation of the value chain processes of logistics, operations, warehousing, performance measures, and profitability is necessary to achieve successful implementation of TOC (Mathu, 2014). Collaboration and connectivity between stakeholders and public and private partnership are critical factors in removing inadequate logistics constraints (Chou et al., 2012; Mathu, 2014).

The requirements for leaders to change business processes to improve quality, cost, service, and gain competitive advantages are reasons for the relevancy of the TOC to PI (Tayade & Chavan, 2013). The TOC is a method for leaders to improve processes based on the premise that continually identifying and resolving systems bottlenecks, leaders can solve operational problems (Polito & Capen, 2014; Sadat et al., 2013). The TOC management philosophy consists of systematic steps that leaders use for problem solving: identify the constraint, exploit the constraint, subordinate process, elevate the constraint, and overcome inertia (Sadat et al., 2013; Sale & Sale, 2013). The application

of the TOC is the foundation for the problem solving steps in PI. Define the problem, measure the inputs and outputs, analyze the results, make improvements, and implement a control strategy are Six Sigma steps, acronym DMAIC, to eliminate defect constraint and reduce cost (Prashar, 2014; Toledo et al., 2013).

Points of Views of PI and Relationship to Previous Studies

The focus of this study was to explore strategies that civilian leaders, working at a military base, use to achieve successful implementation of PI. A case study was an appropriate approach; however, various research methods, PI methods, and strategies exist to improve production, services, and profit margin (Wang, Wang, & Lee, 2014). Based on studies of quality management, organizations differed from various approaches to PI and scholars associated multiple concepts with the PI phenomenon (Bon & Mustafa, 2013; Drohomeretski et al., 2014).

A comparison of previous PI studies indicates diverse CPI methodologies, strategies, and approaches (Zhang et al., 2012). The essential features of studies based on the Six Sigma method consist of systematic steps to define, measure, analyze, improve, and control (DMAIC) processes to achieve continuous improvement and reduce the cost of poor quality (Neufeld et al., 2013; Prashar, 2014; Toledo et al., 2013). However, other methods and designs were appropriate for the study of PI. Rohleder et al. (2013) used a single case study, the Mayo Clinic in Minnesota, to explore the use of PI to improve healthcare service quality and efficiency. Rohleder et al. used documents and direct observation as sources of data. The method for PI was the use of simulation modeling using performance data to drive change. The result of the study was a 70% improvement

in patient service performance (Rohleder et al., 2013). Culture change and performance were the strategies for improvement. Garza-Reyes, Flint, Kumar, Antony, & Soriano-Meier (2014) selected a single case design to explore the use of a modified version of the DMAIC process for reducing lead time in an aerospace engine assembly process. Garza-Reyes et al., using an aerospace company in the United Kingdom and collecting data from documentation, archival records, and direct observation modified the DMAIC approach of Six Sigma to validate a new method of improvement. Garza-Reyes et al. changed the improve phase to the, improve and review phase. The result of the new modified process was a 20% reducing in the engine assembly lead time. Performance measurement was a factor in determining the success of PI. In a qualitative, case study, Baia (2015) explored the benefits of implementing the strategy of Six Sigma in a company in Portugal. Baia used a combined approach of DMAIC and the 5S program to improve product quality and safety. The result of implementing Six Sigma was a reduction in defective products, variation, and costs. The result of the 5S program, the process of organization and standardization in the workplace, was an 80 percent decrease in work-related accidents (Baia 2015). Other benefits of the 5S program were a reduction in absenteeism and an increase in workers' morale. Baia found that the key success factors for implementing the Six Sigma strategy were educating leaders on the return on investment for using Six Sigma, overcoming resistance to change, and establishing effective communication for deploying a Six Sigma strategy (Baia, 2015). A case study and the use of the DMAIC method were the predominant approaches to study PI; however, Ismail, Ghani, Ab Rahman, Md Deros, and Che Haron (2014) argued that the

DMAIC method is appropriate for PI of existing products and processes. In contrast, the define, measure, analyze, design, and verify (DMADV) method is the preferred method for new products and processes (Ismail et al., 2014).

In contrast to the qualitative, case study approach for studying PI, Fadly Habidin and Mohd Yusof (2013) used a quantitative approach to identify CSFs for Lean Six Sigma in the Malaysian automotive industry. Using non-random sampling of 161 companies, Fadly Habidin and Mohd Yusof identified seven CSFs for the successful implementation of Lean Six Sigma. Leadership, structured improvement procedures, quality information and analysis, supplier relationship, just-in-time delivery, customer focus, and focus on metric are the important factors for successful implementation. Leadership, customer focus, and focus on metrics were the top three factors for CPI (Fadly Habidin & Mohd Yusof, 2013). The CSFs of PI are significant strategies for leaders to implement successful PI (Talib et al., 2013). In a quantitative research, Talib et al. (2013) investigated the relationship between TQM practices and quality performance in Indian service companies. Talib et al. collected data from a sample size of 600 companies and found a partial correlation between TQM practices and quality performance of the Indian service companies. Fening, Amaria, and Frempong (2013) used a quantitative study to examine the relationship between TQM and organizational performance. Using correlation analysis of data from 250 questionnaires, Fening et al. found a positive correlation between the TQM variables and performance. Independent TQM variables of top management commitment, training for TQM, customer-driven information, process control and improvement, employee empowerment, supplier

involvement, and communications on the practices of TQM impact organization performance (Fening et al., 2013). The areas of organizational performance were productivity, market share, sales growth, profit growth, and quality of product/service (Fening et al., 2013). While examining manufacturing companies in Mexico, Garcia et al. (2013) identified other CSFs in manufacturing. In a quantitative study, Garcia et al. used factor analysis to identify the CSFs for Kaizen implementation. Using non-random sampling of 140 companies, Garcia et al. analyzed data from 258 questionnaires. Garcia et al. identified seven CSF for continuous PI. The CSF were (1) workforce training and education, (2) organizational-wide vertical and horizontal communication, (3) documentation, standards, and guidelines for processes, (4) workers' involvement in the decision making process, (5) organizational culture of change and improvement, (6) management commitment, and (7) customer orientation (Garcia et al., 2013). Considering different critical factors and methods of using PI is necessary for successful application of PI (Talib et al., 2013).

In other studies, researchers indicated a holistic approach to PI, the integration of CSFs, contributes to the effective implementation of quality improvement programs and maximum returns on investment (Talib et al., 2013). Manville et al. (2012) used a mixed method approach to evaluate the importance of developing a Lean Six Sigma strategy from a middle management perspective. Manville et al. collected data from 200 structured survey issued to managers in Company A and semistructured interviews. Manville et al. concluded that integrating emergent strategies with PI methodologies might be the appropriate strategy for leaders that operate companies in dynamic

environments. Heavey, Ledwith, and Murphy (2014) used mixed methods to develop and validate a new framework for continuous improvement. Heavey et al. interviewed seven PI experts from four countries and used surveys from 610 IDA companies in Ireland to collect data. Heavey et al. identified leadership, strategic objective, improvement specialist, and methodology as strategies for continuous process improvement.

Combining different methods and approaches to PI was a means to improve organizational performance and lower cost; however, organization leaders must consider variants of critical factors that affect the success of implementing PI (Talib et al., 2013). Factors to improve performance in service companies differed from the factors in manufacturing companies. Factors to improve performance in service companies in India were training and education, quality systems, benchmarking, quality culture, and teamwork (Talib et al., 2013).

PI approach and application. Qualitative case study was the dominant approach to study the phenomenon of PI (Chakraborty & Tan, 2012). However, Shokri, Oglethorpe, and Nabhani (2014) argued that the strategies for implementing PI differ based on organizational type and size, small, medium, or large. In healthcare, PI is a means to reduce hospital registration time (Bhat, Gijo, & Jnanesh, 2014) and waiting times between patients' services (Wang et al., 2014). Bhat et al. (2014) used a case study to explore the scope of Lean Six Sigma strategy and successful implementation in a medical college hospital in India. Using the DMAIC process of Lean Six Sigma to reduce the cycle time of patient registration, Bhat et al. found that the use of Lean Six

Sigma results in reduced cycle time. Bhat et al. concluded that management support, support from team members, and cultural change are CSFs for successful implementation of PI. Wang et al. (2014) used a case study to explore the reduction of wait time in the Health Evaluation Center in Taiwan. Using the Six Sigma method, the healthcare leaders reduced total cycle time by 40.3% and total waiting time by 56.2% (Wang et al., 2014). Laureani, Brady, and Antony (2013) used multiple-case study design to explore Lean Six Sigma implementation in a large semi-urban hospital in Ireland. The result of the study was a reduction in inventory, an increase in medical records availability, an effective laboratory process, an improved communication plan for patient care, and an effective fall prevention plans. Laureani et al. found that CSFs of Lean Six Sigma implementation are management commitment, cultural change, linking Lean Six Sigma to business strategy, and leadership styles. Bode, Roberts, and Johnson (2013) used a case study design and explored PI in a military medical clinic. Bode et al. used a modified method of plan-do-check-and-act; additional steps in the process were find-organize-clarify-understand-select. The result of the modified method of continuous process improvement was improvement in medical diagnosis and intervention rates for obesity in the military (Bode et al., 2013).

While in education, based on case studies, the use of PI resulted in improved services: quality of education, efficiency and effectiveness of technical and administrative processes, and improved student services. Svensson, Antony, Ba-Essa, Bakhsh, and Albliwi (2015) used a case study to explore a framework for LSS in higher education student admission process in Saudi Arabia. Svensson et al. used the DMAIC

model for PI. The framework for successful implementation of Lean Six Sigma in higher education is (a) Lean Six Sigma training, (b) stakeholder management and leadership commitment (c) effective communication, and (d) change management (Svensson et al., 2015). The DMAIC process was a platform for improving business process quality across the administrative functions within the university (Svensson et al., 2015).

Ndaita, Gachie, and Kiveu, (2015) performed a qualitative, case study to explore Six Sigma's implementation in National Bank in Kenya. Ndaita et al. used a Six Sigma process of (1) initialize, preparing and planning for deployment; (2) deploy, selecting, training, and resourcing staff; (3) implement, implementing projects and improving performance; (4) expand, expanding the scope to other divisions; and (5) sustain, imbedding a Six Sigma climate in business operations. Ndaita et al. found that positive change in operational culture, improved flow time in operation processes, leadership commitment to organizational strategy, reduction in error rate and Six Sigma champions' involvement in project management. Scholars used different methods to study PI; however, the central focus of PI is improving performance and lowering cost (Sale & Sale, 2013).

The central focus of using methodologies for PI is increasing business performance and profitability (Sale & Sale, 2013). Relationships exist between lean production, product quality performance, and business performance (Belekoukias, Garza-Reyes, & Kumar, 2014). Losonci and Demeter (2013) found that positive relations exist between PI and performance; however, variables to assess performance differed based on core functions in organizations and targeted areas of improvement. In manufacturing

studies, with a focus on production, researchers found that PI has a positive effect on performance (Belekoukias et al., 2014; Cheng, 2013). The performance improvement included eliminating process variability, reducing defect levels, reducing manufacturing and maintenance inspection time, improving cycle time, improving inventory, and on-time delivery (Belekoukias et al., 2014). Using a case study, Bhat et al. (2014) found that turn-around-time in a clinic medical record section is a measure of performance. Incorporating the concepts of PI in the workplace, leaders can improve efficiency and responsiveness, and thus, reduce costs for the organization (Bhat et al., 2014).

The use of PI varies according to the organizational type and purpose (Zhang et al., 2012). PI is a means to improve customer service processes, reduce service delivery time, and improve financial decision-making to increase profit (Moreira et al., 2014). The leaders of PI, in the business industry, had a purpose of cost reduction, employees' motivation, customer satisfactory, and profit increase (Cheng, 2013). Moreira, Castano, Sousa, and Meneses (2014) used mixed methods and explored the application of PI in the banking sector in Portugal. Moreira et al. found four key factors for adopting the TOC to improve processes in the banking industry. The key factors were the importance of technology resources and information systems, the need to increase the quality of their services, the use of human resources, and the current economic situation. The quality of the service in bank systems is vital for competitive success (Moreira et al., 2014). Chakraborty and Tan (2012) used a case study design to explore the implementation of Six Sigma in service organizations. Organizational types were hospitals, a public service organization, a consultancy service, and a hotel. Collecting data from interviews and

documentation from 12 cases, Chakraborty and Tan (2012) identified CSFs for PI in service organizations. While, in education, researchers used case studies and found that the use of PI resulted in improved services: quality of education, efficiency and effectiveness of technical and administrative processes, and improved student services (Svensson et al., 2015). Determining the impact of PI practices on performance is an integral strategy in PI to achieve competitive advantages; however, PI results based on methodological approaches were inconclusive in education (Asif, Awan, Khan, & Ahmad, 2013). Differences in methods and approaches existed in the use of PI, but the primary focus of leaders is using PI to eliminate constraints that affect performance (Prashar, 2014).

Constraints exist that preclude leaders from achieving successful implementation of PI: lack of performance data, project delays, teamwork and employees' commitment, resistance to change, and inability to define problem areas (Prashar, 2014). In manufacturing, the CSFs to eliminate constraints are top management commitment, supplier quality management, continuous improvement, product innovation, employee involvement, reward and recognition, education and training, and customer (Das, Kumar, & Kumar, 2011). Das et al. (2011) used a quantitative method to identify the CSFs of leadership for the implementation of PI in Thai manufacturing companies. Using survey data from 265 participants in ISO 9000 certified companies, Das et al. found that the CSFs of PI are significant strategies for leaders to implement successful PI. Constraints that involve human resource, leadership support, communication of shared vision, organizational change, and regulatory and policy guidelines, could prevent successful

implementation of PI (Lorden, Zhang, Lin, & Cote, 2014). To achieve successful PI and gain a competitive advantage, leaders must extend PI beyond the DMAIC approach (Cheng, 2013). Process improvement strategies must align with long-term business strategy (Kornfeld & Kara, 2013), and leaders must focus on organizational, critical success factors (Cheng, 2013).

Critical Strategies for PI Success

Logistics leaders perform PI, to remove constraints, in a changing business environment to improve performance (Sale & Sale, 2013). However, the successful implementation of PI varies based on organizational size, business type, and implementation strategy (Shokri et al., 2014). Shokri et al. (2014) used mixed methods to investigate whether Six Sigma is applicable and beneficial for food distribution in small and medium-sized enterprises (SMEs). Shokri et al. used a quantitative approach to achieve four research objectives: investigate the organizational capability of food distribution SMEs to implement Six Sigma; investigate the senior management commitment and employee resistance to change; justify the application of the Six Sigma methodology against other quality management initiatives; and identify the financial, strategic logistical focus of Six Sigma. Shokri et al. used the case study approach to explore the practical benefits of using Six Sigma in a food distribution SME. Shokri et al. found organizational size effect the ability of leaders to implement Six Sigma projects because of organizational resources. Additionally, senior management commitment is the most important success factor of implementing Six Sigma, and Six Sigma is a model

for business improvement in the food industry. Moreover, the result of using Six Sigma was an increase in customer value and a reduction in costs (Shokri et al., 2014).

Organizational size and business strategy are factors in successful implementation of PI, but Sharma et al. (2015) argued that the implementation strategy for PI was a factor in achieving successful implementation. Successful implementation of PI in the healthcare field required a holistic system's strategic approach (Das, Venkatadri, & Pandey, 2014). A holistic approach to PI in healthcare was technology integration, training, and focus on robust communication (McFadden, Lee, Gowen, & Sharp, 2014). McFadden et al. (2014) used a quantitative research to examine the extent to which quality improvement initiatives depend on knowledge management for realizing positive patient safety, learning outcomes. McFadden et al. found that employee knowledge acquisition, marketing knowledge dissemination, responsiveness to customers, and patient safety learning outcomes, which is a holistic construct of continuous quality improvement, have a direct positive relationship with patient safety learning outcome. Additionally, McFadden et al. found that Six Sigma did not have a statistically significant direct association with patient safety, learning outcomes. The factors of a holistic approach to PI were knowledge management, data-driven knowledge, and a motivated workforce (McFadden et al., 2014). Other holistic approaches and key success factors for the implementation of PI in healthcare, based on a multiple-case study, were leadership commitment, training, and organizational change (Laureani et al., 2013). Process improvement changes in healthcare organizational structures, programs, and systems resulted in improved processes to manage diseases, to assess patients' perceptions of

care, and to ensure uniform healthcare benefits and high quality healthcare (Liberatore, 2013).

Cheng (2013) found that a holistic approach to PI in manufacturing led to successful PI. Cheng performed a quantitative study to examine PI's success and failure in the manufacturing business. Components of successful PI in manufacturing are process control, organizational culture, leadership strategy integration, and quality training (Cheng, 2013). The holistic approach of integrating leadership, training, knowledge, and resources was essential elements that extend beyond the traditional DMAIC approach to PI (Cheng, 2013).

To achieve competitive bottom line results, leaders must consider, in addition to traditional PI methods, factors that enable PI's implementation success: leadership styles, organizational culture, and linking Lean Six Sigma to business strategy (Laureani et al., 2013). Constraints in PI that were barriers to successful implementation of PI were factors of leadership, organizational culture and change, human factors of training and employee engagement, and performance management (Nasution, Mahargiono, & Soesatyo, 2016; Ugurlu & Kurt, 2016). In a multiple case study in India, Malik and Blumenfeld (2012) found that organizational leaders who approach PI from a strategy of integrating organizational learning, training, human resource factors, organizational culture, and technology capabilities eliminate performance constraints and improve the effectiveness of PI. Using a multiple case study in an Ireland hospital, Laureani et al. (2013) found that CSFs of PI implementation are management commitment, cultural change, linking Lean Six Sigma to business strategy, and leadership styles. The

awareness of CSFs, in combination with an awareness of similarities between the methods, is a factor that affects organizations' success in implementing PI (Naslund, 2013).

The strategies that organizational leaders could use to achieve PI success require further research (Ponsignon, Maull, & Smart, 2014). Sadikoglu and Olcay (2014) argued that the CSFs of TQM vary based on the type of organizations. Raghunath and Jayathirtha (2014) argued that companies do not achieve the expected level in implementing Six Sigma because consultants restrict the application of Six Sigma to training and improving projects. Other critical factors of successful implementation of Six Sigma are changes in the organization culture, leadership, and the overall business and process management activities (Raghunath & Jayathirtha, 2014). Sadikoglu and Olcay performed a qualitative study using non-random sampling of firms in the Turkish Quality Association. Sadikoglu and Olcay found TQM factors of (a) leadership, (b) knowledge management, (c) training, (d) supplier quality management, (e) customer focus, (f) strategic quality planning, (g) continuous improvement, (h) employee involvement, and (i) process management have positive relation with performance improvement.

In this literature review, the CSFs comprise the strategies for developing themes for successful implementation of PI that form the foundation for this study. The CSFs are leadership, strategic management, performance management, culture, change management, human capital, and knowledge management (Gurumurthy, Mazumdar, &

Muthusubramanian, 2013). The TOC is the fundamental concept to explore the strategies that logistics leaders use to implement PI in the military aviation industry.

Leadership. Leadership is a critical element in defining the problem to improve performance (Valmohammadi & Roshanzamir, 2015). Ineffective leadership is a key constraint in the DMAIC phases of PI and problem solving methods (Shaaban & Awni, 2014). Leaders are responsible for defining organizational vision, increasing performance and profit, developing commitment to PI, and attaining goals (El Aziz & Fady, 2013; Laureani et al., 2013). In a case study at a healthcare facility, Schell and Kuntz (2013) found that leadership is critical to PI in healthcare. Leaders' role during the PI change process in eliminating ineffective communication during the change process, mitigating resistance to change, and support for the proposed change is essential for successful implementation of PI (Schell & Kuntz, 2013).

Leadership theories and models are relevant to an understanding of organizational leadership strategies to eliminate constraints to achieve the successful implementation of PI (Gaubatz & Ensminger, 2015). Researchers (Gaubatz & Ensminger, 2015; Malik, 2013) have used leadership theory to understand the effect of leadership on organizational performance and behavior. The 1964 leadership grid of Blake and Mouton is a method to characterize leadership based on an orientation of people and task (Gaubatz & Ensminger, 2015). Gaubatz and Ensminger (2015) chose a multiple-case study and explored the effect of leadership behaviors on the change process in secondary schools. Based on the analysis of interviews and documents, Gaubatz and Ensminger found connections between the change model and the Blake and Mouton leadership grid.

During the stages in the change process of care, relate, examine, acquire, try, expand, and renew, leaders' changed leadership style that corresponded to the Blake and Mouton grid (Gaubatz & Ensminger, 2015). Leaders change leadership style according to actual circumstances or situations to motivate people to achieve desired results (Gaubatz & Ensminger, 2015). Contingency theories have a focus that leaders adjust behavior to fit situations (Malik, 2013). Transformational leadership occurs when leaders focus on the needs of followers to gain their support, legitimacy as leaders, and motivate followers to achieve desired goals (Carter et al., 2013; Effelsberg, Solga, & Gurt, 2014). The various leadership styles affect the influence that leaders exert on workers to motivate employees to achieve organizational goals (Carter et al., 2013).

Social exchange and strategic contingency theories of leadership are relevant to understanding the power and influence of leaders (Malik, 2013; Waters, 2013). The social exchange theory is a leadership strategy that leaders use to motivate workers' performance and improve management's influence on workers to accomplish objectives (Watson & Foster-Fishman, 2013). The concept of social exchange theory is the creation of power through an exchange of benefits or expectations (Watson & Foster-Fishman, 2013). Leaders motivate workers to achieve organizational goals, achieve desired requests, support decisions, and implement proposals by creating benefits for the performance of employees (Carter et al., 2013).

Power and relationships are elements of leadership to achieve organizational goals and control behavior (Laschinger, Wong, Cummings, & Grau, 2014). Successful PI involves leaders' ability to influence workers to achieve organizational goals in a

dynamic system environment (Voet, 2014). Internal and external influences based on the power relationship between leaders and followers have a positive relationship with PI's performance and implementation success (Groves, 2014). Organizational leadership is the critical factor in determining organizational success, performance, and efficiency through strategic choices (Ali & Ivanov, 2015). Leaders develop the organizational vision and long-term goals, manage human capital factors to implement the vision, and manage culture to achieve transformation changes (Loshali & Krishnan, 2013). The role of leadership in organizations is a factor in the success or failure of PI (Cheng, 2013).

Leadership competencies, influences, and relationships are essential components of PI's implementation success (Das et al., 2011). Anderson and Kovach (2014) used a case study to explore PI in a construction company. Process improvement success depends on leaders' skills and influences to direct work and control processes, train employees, assign suspense and tasks, and develop standards (Anderson & Kovach, 2014). The support and commitment of leaders to PI, motivation and training of the workforce, and a culture of communication and change are factors in creating an environment for CPI (Baia, 2015; Lertwattanapongcha & Swierczek, 2014). Cheng (2013) found that workforce errors, lack of a clear communication, unwillingness to implement process changes, and insufficient performance data were constraints that prevented PI in healthcare. Additionally, leaders' resource allocations and influences were vital elements in PI's success (Das et al., 2011). Leadership competencies, commitment, and allocation of resources affect workforce performance; however,

company leaders must take a strategic approach to PI to achieve a competitive advantage (Jaoua & Radouche, 2014).

Strategic management. Positive relations exist between strategic management and gaining the competitive advantage (Jaoua & Radouche, 2014). Strategic alignment of organizational goals, business strategy, and business resources result in sustained organizational performance (Chen, Delmas, & Lieberman, 2015; Watts & Ormsby, 2015). Watts and Ormsby (2015) performed a quantitative study to investigate the effect of operational and strategic planning on performance. Watts and Ormsby used non-random sampling of participants in small independently owned banks and collected data to find the relationship between strategic and operational variables on organizational performance. Watts and Ormsby found that strategic planning components of strategic posture, opportunities and threats, resources and skills, strategic issues had a strong relationship with return on assets. Additionally, operational components of marketing, finance, personnel, and operations had a strong relationship with return on assets (Watts & Ormsby 2015). Leaders use strategic management to assess organizational performance; ineffective strategic management is an organizational constraint (Chen et al., 2015).

Strategic management is a factor of leaders' long-term successes or failures in using PI to achieve organizational vision and goals (Sa, 2013). Leaders use strategic management to integrate business strategies with PI initiatives to achieve higher performance (Watts & Ormsby, 2015). Sadikoglu and Olcay (2014) found that strategic quality planning related positively to employee performance and social responsibility.

The alignment of business strategy with performance and the competitive environment is an element of strategic management (Perera & Perera, 2013). Strategic management, as a dynamic capability process, is a process that leaders use to connect the missions, goals, vision, and objectives of an organization to improve performance (Sa, 2013; Sadikoglu & Olcay, 2014). Moreover, the employees' involvement in the strategic management process is a motivational factor for achieving organizational goals, which results in improved performance (Sadikoglu & Olcay, 2014). The competitive environment is the strategic focus of leaders in determining the strategic direction of the company (Nasution et al., 2016). Leaders form the future direction of the company based on the integrated alignment of vision, mission, strategic planning, and implementation strategies with cost leadership strategy (Nasution et al., 2016).

A strategic approach to PI is the integration of resources through strategic management of human capital, knowledge management, technology, and systems integration (Manville et al., 2012). The strategic management approach is a means to link PI to business strategy and customers, improve project selection and prioritization, manage training and education, and ensure leadership and organizational support (Manville et al., 2012). A resource-based strategy of differentiation has a positive relationship with the development of internal and external resources (Laosirihongthong, Prajogo, & Adebanjo, 2014). Leaders who developed human capital resources of internal knowledge and creativity and external relationship with suppliers and customers achieved innovative performance in manufacturing organizations in Thailand (Laosirihongthong et al., 2014).

Leaders can use the strategic differentiation strategy to achieve innovation success, improve performance, and increase competitiveness (Laosirihongthong et al., 2014). Abdel Al and McLellan (2013) tested the relationship between accounting practices and organizational performance. Leaders who aligned accounting practices and strategy had a positive and significant effect on performance (Abdel Al & McLellan, 2013). Organizational leaders attained greater organizational performance by using a differentiation strategy (Abdel Al & McLellan, 2013).

Strategic management is an integral process in PI and performance management (Hvidman & Andersen, 2014). Public and private leaders, in the Danish compulsory educational system, achieved effective strategic management by shifting strategies from strategic planning to strategic management, changing the focus from production measurement to performance management, and linking strategies to performance management and PI (Hvidman & Andersen, 2014). Strategic management resulted in effective organizational change, increased capacity, and continuous performance management (Hvidman & Andersen, 2014). Organizational leaders increase synergies among stakeholders and changing environments for meeting customers' requirements by using a strategic methodology (Manville et al., 2012). Strategic alignment activities, process improvement principles, and measurements are strategic methods to improve customer satisfaction (Manville et al., 2012).

Performance management. Performance constraints are limiting factors that have an effect on the ability of leaders to achieve organizational goals (Tayade & Chavan, 2013). Organizations use performance management as a strategy in the

application of Lean methods for achieving PI's goals (Karim & Arif-Uz-Zaman, 2013). Karim and Arif-Uz-Zaman (2013) used a case study design to develop an effective methodology for implementing Lean manufacturing strategies and a leanness evaluation metric using continuous performance measurement in an Austrian manufacturing company. Karim and Arif-Uz-Zaman proposed a Lean model of (1) identify production and process details, (2) form Lean teams to establish a Lean culture, (3) define and evaluate the manufacturing performance variables, (4) develop a current process map, (5) institute performance assessment, and (6) design the new process. The results of implementing the Lean model were a process to systematically identify wastes, select appropriate lean tools, identify relevant performance indicators, achieve significant performance improvement, and establish a Lean culture in the organization. Performance management was a key element in the model to assess continuous performance (Karim & Arif-Uz-Zaman, 2013). Performance measures, as indicators of companies' efficiency, performance, and costs (Sadat et al., 2013), are effective management tools, but leaders who strategically align performance measures with organizational objectives achieve market competitiveness (Mensah & George, 2015).

A strategic approach to PM is a critical factor in PI (Perera & Perera, 2013). During the analysis phase of PI, business leaders seek to improve performance by meaningful measures of metrics (Cheng, 2013). Performance measures are factors in leaders' achieving organizational objectives, improving plant performance, and lowering costs (Perera & Perera, 2013). Perera and Perera used a cased study design to develop a performance measure model for Lean manufacturing. Using interviews and documents,

Perera and Perera identified key performance indicators based on safety, quality, delivery, manufacturability, and cost. Sadikoglu and Olcay (2014) found significant relations exist between PI and performance measures of operational performance, inventory management, employee performance, innovation social responsibility, customer satisfaction, and market and financial performance. Organizations that identify key performance indicators improve competitiveness (Perera & Perera, 2013).

The balanced performance management approach is an effective strategy to improve educational performance (Ploom & Haldma, 2013). Ploom and Haldma (2013), using a quantitative approach, found that the key performance indicators in education are strategic management, resource management, collaboration with stakeholders, learning processes and quality management, and school performance evaluation (Ploom & Haldma, 2013). The metrics are indicators of school leaders' performance in providing quality of teaching and education, creating a supportive climate, and performing strategic management (Ploom & Haldma, 2013).

Performance indicators varied according to core business functions and maturity level of PM (Hvidman & Andersen, 2014). The elements to determine organizational PM, as an element of PI, differed among organizations based on the core functions and processes of organizations (Hvidman & Andersen, 2014). Performance management in the education field included personal benefits, job security, additional responsibilities, training and development, teaching aids and work environment, and work freedom (Ploom & Haldma, 2013). A PM model for manufacturing businesses included manufacturing performance, sales, managing and evaluating business strategy,

monitoring operational efficiency improvements, and productivity (Losonci & Demeter, 2013). According to Belekoukias et al. (2014), the manufacturing logistics performance measures are lead time, flexibility and on-time delivery, and customer satisfaction. The focus of PM in the shipping industry was financial performance, marketing performance, human capital factors, and operational performance (Cheng & Choy, 2013). The strategic choice of leaders to align PI initiatives with performance management, in the banking industry, resulted in outcomes of cost efficiency, customer satisfaction, and achieving competitive goals (Buavaraporn & Tannock, 2013). In Indonesia manufacturing, Nawanir et al. (2013) found that a holistic PM process improves operational performance and business performance. Strategic and tactical factors of performance management enhance the transformation process of PI to achieve sustained customer satisfaction, service quality, innovation, speed, and price competitiveness (Das et al., 2011). Tactical areas of core performance improvement are just-in-time delivery, reduced production costs, increased productivity, improved flexibility, and reduced waste and quality of products (Das et al., 2011).

Culture management. Culture is an essential factor for the success of PI (Talib et al., 2013). Internal and external cultural socialization involving systems of norms, shared values, and common beliefs were essential elements of strategic change for leaders to gain competitive advantages (Awadh & Alyahya, 2013). During the implementation stage of process improvement, leaders must create a culture of change throughout the organization to achieve success in implementing PI (Garcia et al., 2013). Organizational culture, comprising the thoughts, feelings, and attitude of workers, is a

factor of PI that leaders use to implement changes, guide the change process, and control the behavior of individuals (Talib et al., 2013). The negative attitude of workers toward quality initiatives is a cultural constraint that hinders the successful implementation of PI (Moreira et al., 2014). Elements of a quality culture are teamwork, pride in workmanship, participative management, and leadership support, are useful strategies for leaders to remove organizational constraints to PI (Talib et al., 2013).

Researchers (Alagaraja, 2013; Garcia et al., 2013) have studied the effect of culture on PI. Hierarchal structures characterized by tribal cultures, where employees prefer incremental change, top down decision-making processes, and one-dimensional communication, are change constraints that hinder the PI changes (Alagaraja, 2013). A culture of leadership support, employee commitment, open communication, and proactive change is critical for the implementation success of PI (Garcia et al., 2013). Knapp (2015) performed a quantitative study to find the relationship between four organizational cultural types and three Lean Six Sigma's implementation components of management involvement, use of Lean Six Sigma methods, and Lean Six Sigma infrastructure. Knapp argued that dominant characteristics, leadership style, organizational glue, organizational climate, success criteria, and management style are dimensions of culture. Knapp identified four cultural types in a framework of organizational competing values. Group, developmental, hierarchical, and rational culture affect the successful implementation of Lean Six Sigma (Knapp, 2015). The characteristics of group culture are an internal organizational focus and an emphasis on flexibility and cohesion. Additionally, a sense of togetherness, teamwork, and participation are elements in a group culture (Knapp,

2015). In a group cultural environment, leaders support team development and participatory decision-making. Developmental cultural organizations emphasize flexibility but have an external focus (Knapp, 2015). Developmental organizational characteristics are innovation, risk taking, adaptability, and individuality. Other characteristics are entrepreneurship, vision, and constant change (Knapp, 2015). Organizations that exemplify hierarchical culture are control and internal oriented and have a rigorous adherence to formal rules, procedures, structure, and authority (Knapp, 2015). Leaders implement policies and procedures and develop strategies for reducing errors, standardization, and consistency. Characteristics of rational culture organizations are control oriented, external focus, emphasis on productivity, and goal oriented (Knapp, 2015). Knapp found a significant interaction between group culture and senior management support. Group culture had the greatest interaction with management support. Additionally, Knapp found a significant interaction between developmental culture and management support. However, Knapp did not find a significant interaction between the rational culture and Six Sigma methods. Moreover, Knapp did not find a significant interaction with the hierarchical culture and Lean Six Sigma infrastructure. Knapp concluded that characteristics associated with group cultures, such as collaboration, involvement, and learning are critical factors for effective implementation of Six Sigma. The result of establishing a quality culture includes a climate of continuous improvement and innovation, workforce motivation, management involvement, and workers' empowerment to drive customer satisfaction (Garcia et al., 2013; Talib et al., 2013).

A culture of innovation is conducive to continuous improvement (Wei, O'Neill, Lee, & Zhou, 2013). A perceived innovative culture significantly and positively affects employees' job satisfaction, perceptions of organizational dynamism, and firm performance in achieving competitive resources and advantages (Wei et al., 2013). Cultures, characterized as innovative, flexible, and adaptable, are systems of behavioral dynamics for innovative ideas, acceptance of change, and commitment to organizational vision (Kash, Spaulding, Johnson, Gamm, & Hulefeld, 2014). Leaders that establish a culture of understanding and adapting to the competitive environment and customers, communicating vision and mission to the workforce, making consistent decisions and establishing consistent processes, and empowering employees create high performing organizations (Ovidiu-Iliutav, 2014).

Cultural factors of leadership commitment, empowerment, and innovation affect organizational performance (Lertwattanapongcha & Swierczek, 2014). Lertwattanapongcha and Swierczek (2014) used a multiple case study design to assess the change process of LSS. Lertwattanapongcha and Swierczek (2014) compared the PI's implementation success of three multinational corporation in Thailand. Lertwattanapongcha and Swierczek (2014) identified a culture of leadership commitment, employee empowerment, strategic vision, and effective communication as the CSF for implementation success. Additionally, culture was an important factor in achieving successful PI in the manufacturing industry (Valmohammadi & Roshanzamir, 2015). Valmohammadi and Roshanzamir (2015) performed a study to find the relationship between organizational culture and TQM implementation. Valmohammadi and

Roshanzamir used non-random sampling and collected data from 47 pharmaceutical manufacturing companies in Tehran. Analyzing data from 209 questionnaires, Valmohammadi and Roshanzami found organizational culture is positively associated with the level of TQM implementation and organizational performance. Leadership is the critical factor in creating an organizational culture (Valmohammadi & Roshanzamir, 2015). Organizational leaders create an environment for organizational performance and improvement. Leaders establish the workforce focus on mission, strategic objectives, customers, and workforce learning, which are elements of sustained performance (Valmohammadi & Roshanzamir, 2015).

Organizational culture, a socialization process where individuals learn accepted behavior, is a fundamental element of performance innovation (Steiber & Alange, 2013). Cronemyr (2014) argued that leaders that factor different aspects of national cultures into the implementation of Six Sigma enhance the understanding, cooperation, and performance of an organization. Ovidiu-Iliuta (2014) tested the relationship between organizational culture and practices of performance management. Using non-random sampling, Ovidiu-Iliuta collected data from 81 of 126 questionnaires received from IT companies in Romania. Ovidiu-Iliuta identified variables of organizational culture to achieve sustained performance as adaptability, mission, consistency, and involvement. Ovidiu-Iliutav found strong and positive correlation exists between the variables of organizational culture and performance management systems in information technology companies. A culture of a mission successful organization is an organization with defined goals, clear mission objectives, and strategic direction (Ovidiu-Iliuta, 2014).

Organizations that adapt and react to the competitive environment and customers are high performing organizations. Leaders restructure behaviors and processes to foster adaptation that result in new ideas and different solutions for PI (Ovidiu-Iliuta, 2014). Additionally, a culture of consistency, a system for integration, coordination, and control of resources and governance, is an element of high performing organizations (Ovidiu-Iliuta, 2014). Moreover, involvement, a process of creating a sense of responsibility, commitment to the organization, and autonomy, is a performance differentiator from competitors (Ovidiu-Iliuta, 2014). Leaders that establish a culture of (a) understanding and adapting to the competitive environment and customers, (b) communicating vision and mission to the workforce, (c) making consistent decisions and establishing consistent processes, and (d) empowering employees create high performing organizations (Ovidiu-Iliutav, 2014).

Change management. Organizational leaders require a systematic change strategy for successful implementation of PI (Kovacs, 2015). PI is a change process that leaders use to transform organizations from a current state to a future state to adapt to changing environments (Karim & Arif-Uz-Zaman, 2013). A result of change initiatives is employees change their previous work routines to newly established workflow processes to improve performance (Carter et al., 2013). The DMAIC process of Six Sigma is equivalent to Lewin's change model of unfreeze, move, and freeze (Pinedo-Cuenca, Pablo, & Setijono, 2012). To achieve successful organizational change, leaders must understand the effect of resistance to change (Kokkranikal, Antony, Kosgi, & Losekoot, 2013).

Resistance to change is a constraint to the adoption, expansion, and success of PI (Kokkranikal et al., 2013). Managers and employees are reluctant to implement PI change based on an attitude of doubt about the effectiveness of PI methodologies, a lack of knowledge of PI, and prejudice thinking that PI is only applicable to large companies (Pinedo-Cuenca et al., 2012). According to Lorden et al. (2014), using within case and cross case evaluation, resistance to change is a factor in the failure of PI in healthcare. Implementation failure occurs based on the lack of physicians' consensus on proposed change, dissenting opinion of providers, inability to achieve a shared vision, and lack of a higher authority to drive the change process (Lorden et al., 2014). Managing the change process and eliminating resistance is critical for successful PI (Galli & Handley, 2014).

Managing the change process, leaders can eliminate constraints and improve the successful deployment of PI (Galli & Handley, 2014; Pinedo-Cuenca et al., 2012). Strong commitment and support from the top management and allocation of financial resource are factors to eliminate change constraints (Pinedo-Cuenca et al., 2012). A participatory climate of workforce involvement, process ownership, empowerment of the processes, and participation from team members is an effective strategy to gain workforce's acceptance of changes, support and contribution, and commitment to the project (Pinedo-Cuenca et al., 2012). Additionally, leadership style is a management strategy to eliminate constraints (Lertwattanapongchai & Swierczek, 2014). Transformational leadership and relationship quality between leaders and workers affect change implementation (Carter et al., 2013). Managing organizational change through establishing the appropriate organizational culture and leadership style, leaders must

consider the effect of human capital in the change process to improve performance (Fallahi & Baharestan, 2014; Lertwattanapongchai & Swierczek, 2014).

Human capital. Human capital, human resource management, and knowledge management, are essential elements in organizational performance, financial performance, and innovation (Fallahi & Baharestan, 2014; Mitchell, Obeidat, & Bray, 2013). Human resource management has a significant impact on intellectual capital and organizational performance (Fallahi & Baharestan, 2014; Mitchell et al., 2013). The production and satisfaction of workers are elements in achieving organization goals (Fallahi & Baharestan, 2014) of retention of employees and reduced absenteeism (Kehoe & Wright, 2013). The selection and performance of workers contribute to the long-term success of the company in achieving the competitive advantage (Fallahi & Baharestan, 2014).

An organization's greatest asset is human capital (Channar, Talreja, & Bai, 2015; Sutton, 2015). Human capital management practices have a positive effect on corporate performance (Mitchell et al., 2013). Channar et al. (2015) performed a quantitative study to assess the impact of human capital variables of acquisition of knowledge, skills, and expertise on job satisfaction and organizational performance. Channar et al. used random sampling to select 112 of 2,000 university faculty members. Channar et al. found that human capital developments would increase the organization performance. Additionally, human capital development has a positive relation with employee satisfaction and customer satisfaction. Organizations that provide employees with human capital development achieve employees' job satisfaction that results in improved performance

and customer satisfaction (Channar et al., 2015). Mitchell et al. (2013) argued that the use of effective HRM strategies is essential for organizational performance and successful implementation of PI.

Human performance is a critical strategic resource that organization should actively manage to gain a competitive advantage (Bulut & Atakisi, 2015). Effective HRM strategies, recruitment and selection practices, training and development, effective performance appraisal, and rewards and benefits, have a positive effect on improving performance (Mitchell et al., 2013). Bulut and Atakisi (2015) used a quantitative method and investigated the effect of various HRM practices on PI practices in logistic supply chain operations. Bulut and Atakisi used non-random sampling of 15 supply chain experts. Bulut and Atakisi found that the HRM variables of training, compensation, selection, and rewards have significant effects on organizational performance. A prerequisite for continuous process improvement in supply chain operations is workers' training and knowledge, strategic application of rewards and recognition, recruitment of capable talents, and performance evaluation (Bulut & Atakisi, 2015).

Additionally, job satisfaction and performance are the results of effective HRM strategies (Channar et al. 2015). Employees' satisfaction is a factor in job performance (Channar et al., 2015). The satisfaction of employees improves employee quality awareness and customer satisfaction (Channar et al., 2015). Sheehan (2013) performed a quantitative study to determine if human resource practices in small and medium-sized enterprises affect firm performance. Sheehan found that human resource factors of recruitment and selection, performance appraisal, performance-based compensation pay,

training and development, employee voice, and participation and information sharing, have positive relations with profitability, innovation, and labor turnover.

Knowledge management (KM) is an aspect of PI (McFadden et al., 2014). The integration of PI with KM is a factor in improving organizational performance in supply chain management and healthcare (McFadden et al., 2014). Using the 705 companies in the Vietnamese publicly listed organizations in the Vietnamese Stock Exchanges, David Han-Min and Quang Linh (2014) integrated total quality management and KM into a framework to study supply chain learning. David Han-Min and Quang Linh examined the moderating role of adopting quality management system to determine the effect of implementing knowledge management on organizational performance. David Han-Min and Quang Linh found, using data from non-random sampling, quality management system boosts the implementation of knowledge management and enhances organizational performance. David Han-Min and Quang Linh concluded that the effect of implementing knowledge management on organizational performance is stronger under the high level of adopting the quality management system than under the low level of adopting the quality management system. Moreover, the implementation of knowledge management improves organizational performance (David Han-Min & Quang Linh, 2014). Knowledge management was a factor in improving the return on asset, return on equity, innovativeness, quality in products or services, and customer satisfaction (David Han-Min & Quang Linh, 2014). The knowledge of employees is essential to a company; Azmawani et al (2013) noted that complex knowledge is a means to improve organizational effectiveness and competitive differentiations, a valuable,

unique company asset that is hard to duplicate. The KM factors of an innovative climate, cooperation, trust, communication, and coordination are essential to leaders' abilities to leverage knowledge management as a source of competitive advantages (David Han-Min & Quang Linh, 2014). Assarlind and Aaboen (2014) found that a lack of knowledge of Lean Six Sigma is a constraint to successful implementation and continuous improvement.

The ability of leaders to manage the organization as a learning environment enhances the PI's processes (Tyagi, Cai, Yang, & Chambers, 2015). Knowledge is the key element throughout the DMAIC and problem solving processes of PI (McFadden et al., 2014). Included in the PI models are processes for leaders to integrate the theory of knowledge management into the organization's PI strategies (Azmawani et al., 2013). Ugurlu and Kurt (2016) performed a quantitative study to find the relationship between organizational learning capability and dimensions of product innovation performance. Using stratified random sampling, Ugurlu and Kurt selected 120 of the 1000 manufacturing firms in Turkey. Ugurlu and Kurt found that dimensions of organizational learning capability have a positive effect on product innovation efficiency. Additionally, dimensions of organizational learning capability have a positive effect on successful product innovation. Leaders that establish a learning culture create a flexible organizational structure to facilitate knowledge sharing through informal communication. Consequently, workers, adapting to changing circumstances and positions rather than adhering to rigid job descriptions, improve performance and innovation (Ugurlu & Kurt,

2016). Knowledge management is a process for leaders to leverage knowledge strategically as a source for gaining competitive advantages (Merat & Bo, 2013).

Process improvement is an appropriate and effective strategy for implementing KM in organizations (Salajeghe, Nejad, & Soleimani, 2014). Knowledge management, a deploying agent for innovation, is the means for creating, storing, transferring, and applying knowledge to enable successful implementation of PI practices (Azmawani et al., 2013). The role of people in acquiring, sharing, and creating knowledge is the vital link between leaders and the implementation success of PI (David Han-Min & Quang Linh, 2014). McFadden et al. (2014) found that PI's initiatives have a positive, significant linkage to employee knowledge acquisition. Organizational leaders in hospitals that combine KM capabilities with PI initiatives improve patient safety, manage resources effectively, adopt innovative practices, and achieve continuous improvement (McFadden et al., 2014). Talib et al. (2013) found, in the service industry, that training and education in TQM practices have positive correlations with quality performance. Training and education are means for employees to acquire knowledge of continuous improvement and innovation to achieve business excellence (Talib et al., 2013).

Knowledge management is a leadership strategy to ensure that the billions of dollars invested in training result in increased profits (Azmawani et al., 2013). Salajeghe et al. (2014) argued that gaining competitive advantages depend on education and management of human capital. Leaders, in the banking industry, increased organizational performance by establishing a KM value chain process to create, store, organize, distribute, and apply knowledge for employees to acquire individual and process

knowledge skills (Salajeghe et al., 2014). Hyun Kim et al. (2016) performed a quantitative study to find the relationship between knowledge management systems and performance outcomes. Using data from 638 randomly selected retail grocery chains, Hyun Kim et al. found the effect of the knowledge management systems usage on performance was positive and highly significant. Managers that have a high usage of knowledge management systems achieved higher performance in sales. Hyun Kim et al. found the net benefit from utilizing knowledge, determined from the learning benefit from knowledge, the cost of searching relevant knowledge, and the cost of knowledge transfer was 4.5 million dollars in annual sales. Leaders must establish processes to access the effectiveness of training to enhance organizational effectiveness, increase production, and lower cost (Azmawani et al., 2013; Salajeghe et al., 2014). The benefits of managing training programs include increased performance of employees, improved customer satisfaction, better business performance, greater profitability, and higher productivity (Salajeghe et al., 2014).

Transition

Section 1 was an introduction to the foundation of the research study. I provided detailed explanations of the study: background of the problem, the problem and purpose of this research study, and the nature of the study that included the research method and design. Further discussions were the main research question with seven interview questions and the conceptual framework based on the theory of constraints. Additional topics were assumptions, limitations, and delimitations of the research study, significance

of the study, implications for social change, contribution of this research study to business practice, and a review of the professional and academic literature.

The purpose of this qualitative case study was to explore the strategies that logistics leaders use to implement PI in military aviation industry. The TOC constituted the conceptual framework for the study. This study may be valuable to military, federal government, nonprofit, and business organizations; leaders might use the information in the study to improve performance and profitability. Through the literature review, I discovered that Six Sigma, Lean, and Lean Six Sigma are global PI methodologies that leaders use to achieve a competitive advantage in a constant changing environment (Drohomeretski et al., 2014). Leadership, strategic management, performance management, organizational culture and change, and human capital are CSFs for leaders to consider when developing strategies for implementing PI (Manville et al., 2012; Talib et al., 2013). A holistic approach to PI, integration of CSFs, contributes to the effective implementation of quality improvement programs, maximum returns on investments, and improved business performance (Jung-Lang, 2013; Talib et al., 2013).

Section 2 is a detailed discussion of the project. Topics of discussion in Section 2 are the purpose statement, role of the researcher, participants, method and design, population and sampling, and ethical research. Other topics are data collection and organization techniques, data analysis, and reliability and validity of the research study.

Section 3 of the research study is an overview of the study. The discussions in Section 3 include a presentation of the findings, the applications to professional practice, and the implications for social change. Additionally, Section 3 includes the findings,

recommendations for further study, the reflections learned during the doctoral study journey, and the conclusion.

Section 2: The Project

Section 2 is a discussion of the project. Included in the discussion of Section 2 is the purpose statement, the role of the researcher, the participants in the study, the research method and design, the population sampling, and the research ethics. Additionally, data collection, data organization techniques, data analysis techniques, reliability, and validity, are discussion topics. I conclude Section 2 with a transition and summary. I include in Section 3 a brief overview of the study and a presentation of the findings.

Purpose Statement

The purpose of this qualitative case study was to explore the strategies that logistics leaders use to implement process improvement in the military aviation industry. A qualitative approach is appropriate when the researcher focus on textual data to understand the meaning and interpretation of experiences (Gioia, Corley, & Hamilton, 2013). The intention of this research was to identify and understand the strategies that logistics leaders use to implement PI. Using a qualitative approach is a means to understand the phenomenon from the perspective of the participants (Armstrong et al., 2013). The target population consisted of civilian logistics leaders working with the Air Force in the State of Georgia who use PI in the military aviation industry. The implication for positive social change is the United States and Allied forces could improve flight operations for enhanced safety of our citizens and allies. Nonprofit and for-profit organizations might gain knowledge to improve human value and work conditions through integrating CSFs into the methods of PI.

Role of the Researcher

The focus of this study was to explore the strategies that logistics leaders use to implement PI in the aviation industry. The role of the researcher is to function as the primary instrument for the data collection process and to maintain strict adherence to ethical guidelines (Yilmaz, 2013). In a qualitative case study, interviewing participants, coding the data, identifying themes and patterns, and drawing conclusions are other roles of a researcher (Murphy, Dionigi, & Litchfield, 2014). I performed these roles in this study. Additionally, achieving interview quality entails detailed interview planning and preparation, accurate note taking, and thorough data analysis (Qu & Dumay, 2011). According to Yin (2012), an element of a case study is multiple sources of data. I used semistructured interviews as a data source and collect organizational archival and document data as the other sources of data. Malik and Blumenfeld (2012) used semistructured interviews and documents in a case study to explore the impact of Lean Six Sigma and a firm's quality management capabilities in developing strategies for organizational learning capability.

The role of the researcher involves revealing relationships, research biases, experiences, and values (Yilmaz, 2013). Darawsheh (2014) argued that the researcher's reflectivity is a tool to guide the research process and bracketing. I am familiar with the topic of PI and the implementation of PI; the relationship with participants was on a professional basis. After 30 years in the Air Force, retiring as a senior leader and 4 years as an Air Force PI contractor, I reflected on strategies for effective PI implementation. I observed senior leaders in the Air Force and PI managers using Kaizen events as the

primary method for PI. The components of Kaizen events are developing the business case analysis, selecting and training team members, mapping processes from the current state to the future state, and developing a strategy for PI implementation (Glover et al., 2014).

The role of the researcher is to adhere to ethical research and research that involves human participants (Hardicre, 2014; Mitchell & Wellings, 2013). The researcher is responsible for mitigating risks to participants and protecting the dignity, rights, safety, and wellbeing of the participants (Hardicre, 2014; Lange, Rogers, & Dodds, 2013). I accomplished ethical actions to mitigate the potential harm to respondents. The ethical actions involved obtaining informed consent, protecting the participants' rights to privacy, ensuring confidentiality, and maintaining honesty in collaborating with other professional colleagues (Snowden, 2014). Ament et al. (2014), using a case study design, followed the ethical procedures of gaining approval for the study and following the ethical guideline of the Medical Ethics Committee of the University of Maastricht. Other ethical procedures were confidentiality with the participants and informed consent (Ament et al., 2014; Valiee, Peyrovi, & Nasrabadi, 2014). I adhered to the ethical principles and guidelines in the Belmont Report and the ethical requirements of the Walden University's Institutional Review Board (IRB). Ethical guidelines in the Belmont report include respecting of personal autonomy and diminished autonomy, following the principles of beneficence and justice, gaining informed consent, assessing risks and benefits, and selecting subjects fairly (U.S. Department of Health and Human Services, 1979). Participants in this study were not

vulnerable, and all participants signed a consent form. Jacob and Furgerson (2012) recommended that participants sign a consent form before participating in a research study.

The process of bracketing, separating personal experiences, perceptions, morals, and beliefs from the research data, was the strategy to mitigate bias (Pereira, 2012; Tufford & Newman, 2012). In a multiple case study, the bracketing method of Lambert, Velez, and Elliott (2014) was setting aside experiences and biases that could potentially influence the interpretation of the results and affect objectivity and confirmability. The method for achieving bracketing in this study was annotating preconceptions about PI, keeping memos during the data collection and analysis process, and adhering to journaling procedures. The use of a journaling process, keeping a detailed record of data collection, data analysis, and data reporting is a means to eliminate personal bias (Tufford & Newman, 2012). I used the journaling process as a technique to remain objective and aware of potential biases. Using the journaling process, the researcher focuses on the participants' rich description of the phenomenon and accurately obtains a construct of the participants' perspectives (Tufford & Newman, 2012).

The interview protocol consists of a list of open-ended questions, an interview script, and a consent form to gain signed consent from the participants, which is an important element in the interview process (Jacob & Furgerson, 2012). Killawi et al. (2014) used an interview guide as a means to guide the research. The composition of the guide was research questions, recruiting procedures, procedures for gaining informed consent, and compensation information. I used an interview protocol, shown in

Appendix C, as a procedural guide for the interview process; Jacob and Furgerson (2012) recommended the use of an interview protocol. The benefits of an interview protocol include: (a) the researcher has a guide to achieve a well-planned interview (Qu & Dumay, 2011), (b) the researcher adheres to ethical guidelines, and (c) the researcher collects relevant data (Jacob & Furgerson, 2012).

Participants

The eligibility requirement for participants was participants who could provide rich details to understand the phenomenon (Thorpe, 2013); for this study, participants were logistics leaders. The specific requirement for research participants is that the participants had experiences with the phenomenon to ensure research reliability (Gabrielsen, Lindström, & Naden, 2013; Zhou & Miguel, 2013). Rosendahl, Johan, and Revang (2014) chose participants with in-depth experiences and information to explore reactions to change in a virtual organization. Likewise, Gubbins et al. (2012) chose participants who possessed knowledge or experience relative to the research objective of evaluating task knowledge sharing initiatives. Ament et al. (2014) selected participants who possessed the best knowledge and experiences of the phenomena to explore post-implementation strategies to sustain health care innovations. Therefore, the eligibility requirements for participants in this study were that they must (a) possess knowledge of the phenomena, (b) have the experience in developing business cases for PI, (c) have responsibility for organizational cost reduction, and (d) possess experience in leading people and organizational change. Additionally, I assessed the eligibility of participants; participants' assessments occur before selecting participants for a study (Martinsen,

Norlyk, & Lomborg, 2015). Newington and Metcalfe (2014) accessed the eligibility of participants and did not select participants who did not meet the eligibility requirements.

The process of gaining access to participants and meeting ethical requirements begins with the Institutional Review Board (Snelgrove, 2014). The Walden University Institutional Review Board (IRB) grants permission for the study and sets the ethical guidelines. Appropriate ethical guidelines in research are informing participants of the goals, benefits, risks, and confidentiality of the study (Renert, Russell-Mayhew, & Arthur, 2013). Researchers use strategies to gain access to participants (Rees, 2014; Townsend & Cox, 2013). Rees (2014) used a site respondent to gain access to participants. Yap and Webber (2015) used e-mail and a fax machine as a means to gain access and informed consent. However, Townsend and Cox (2013) used advertising as an access method to participants. Responding to the advertisement, participants initiated the initial contact by telephone (Townsend & Cox, 2013). The methods to gain access to the participants in this study were telephone calls, e-mails, and face-to-face contact; these are appropriate procedures to gain access to the participants (Mikene, Gaizauskaite, & Valaviciene, 2013).

The methods for recruiting participants and establishing working relationships are personal contact and professional networking (Baxley & Daniels, 2014; Burns, Grindlay, Holt, Manski, & Grossman, 2014). Burns et al. (2014) recruited participants by using Facebook advertisements, postings on Craigslist, sending e-mails, and posting on Web sites and Facebook pages. Hawamdeh and Raigangar (2014) argued that a method to build relationship and trust is to make appointments with the participants and explain the

purpose of the study. The benefit of briefing participants on aspects of the research study is a means to create an open and trustworthy environment for participants to provide information that contributes to a quality research (Mealer & Jones, 2014). The strategies that I used for establishing a working relationship with participants are personal contact, professional networking, and preinterview meetings and briefing. I briefed participants on the value of the study, interview process, open-ended questions, and audio recording to build relationships and trust.

Yin (2014) noted that a case study approach is appropriate for research questions that focus on what happened or why something happened. Iden (2012) aligned participants with the research question by selecting participants who possessed precise information to answer the research question. To align participants with the overarching research question, Cunsolo Willox et al. (2013) chose participants who had experiences with the phenomenon. Chambers et al. (2013) chose participants who had knowledge and understanding of the phenomenon and worked in the area of study. In my study, selecting logistic leaders in aviation who have the knowledge and experience to answer the research question was the method to align participants with the research question. I selected four logistics leaders from the case organization for the study by reviewing participants' role and responsibility in the organization. The participants had experience in achieving successful process improvement.

Research Method and Design

The research problem and questions are factors to consider when determining the research method and design (Burns-Cunningham, 2014). Quantitative, qualitative, or

mixed methods are three types of research methods (Fetters, Curry, & Creswell, 2013). A qualitative method is appropriate for collecting and interpreting data to search for meaning (Pettigrew, 2013; Yilmaz, 2013). Based on the purpose of the study, a qualitative case study was appropriate to explore strategies that logistics leaders use to implement process improvement in the aviation industry.

Research Method

The method for this project was a qualitative study. A researcher uses the qualitative method as a structured approach and an analytical technique to build upon existing theory and literature (Cohanier, 2014). A qualitative method is appropriate for a researcher to gather data from participants including the participants' feelings, attitudes, and learning processes from a variety of participants' perspectives (Cohanier, 2014). Sinkovics and Alfoldi (2012) argued that the qualitative method is appropriate for a focus on exploring complex research problems with unknown variables. The process for qualitative research is identifying a problem, collecting data, performing data analyzing, and interpreting data to establish meaning (Yap & Webber, 2015). Andersson, Hilletofth, Manfredsson, and Hilmola (2014) chose a qualitative method to explore how the use of a joint-use strategy of Lean and Six Sigma can improve flexibility, robustness, and agility. Andersson et al. used semistructured interviews, observations, and documents as the data collection technique. Likewise, Paulo Augusto and Marly Monteiro (2014) selected a qualitative method to explore the adoption of PI in service companies to gain the competitive advantage. Paulo Augusto and Marly Monteiro used semistructured interviews and archival records as the data collection technique. Tong, Chapman, Israni,

Gordon, and Craig (2013) argued that qualitative methods are means to describe vividly the experiences and perceptions of participants' experiences related to the focal point of interest (Tong et al., 2013). The sources of qualitative data consist of interviews, surveys, observations, and documents (Frels & Onwuegbuzie, 2013). Therefore, I used a qualitative method to explore the strategies that logistics leaders use to implement PI in the aviation industry. A qualitative approach was appropriate for this study because this method allowed me to interview individuals who had experience and were knowledgeable about the research phenomenon.

The characteristic of quantitative research is a postpositive worldview, the establishment of relations, and the use of numbers to discover relational, social, and cultural construction of variables (Lim, 2014). Quantitative studies have a focus on predefined variables to examine trends and relations as the basis for the discovery of knowledge (Masue, Swai, & Anasel, 2013; Venkatesh et al., 2013). Quantitative questions, posed as a means to examine model specifications, are means for testing research hypotheses, determining association between variables, and exploring group comparisons, by the use of numeric data and accurate measurement (Patrice, Glenda, & Jonathan, 2014; Smith, 2014). For example, Kohlbacher (2013) used a quantitative method to investigate the relationships between continuous improvement initiatives, business process orientation, and time-to-market speed. Likewise, Kovach and Fredendall (2013) used a quantitative method to examine the relationship between an organization's use of PI and learning and improvement. Jones (2014) and Newman and Covrig (2013) argued that in a quantitative study the researcher uses statistically derived

findings to quantify and address the why inquiry of a research question (Jones, 2014; Newman & Covrig, 2013). The qualitative method is appropriate as a means to address the how and what inquiry of a research question (Mealer & Jones, 2014). Therefore, I did not choose the quantitative method; a quantitative method is not appropriate for studies that involve detailed and rich discussions of the phenomenon (Turner, Balmer, & Coverdale, 2013).

The mixed methods approach was also a possible appropriate design. A mixed method design is a more comprehensive method that involves qualitative and quantitative phases of the study (Penman-Aguilar, 2014). Foster and Hale (2015) used mixed methods to explore the relationship between perceptions of weight and health beliefs and practices in a Hispanic population. Foster and Hale used an open-ended questionnaire and statistical analysis to obtain data for achieving the purpose of the research. Ibanez-Gonzalez, Mendenhall, and Norris (2014) used mixed methods research to explore how people living in urban townships manage these illnesses. Ibanez-Gonzalez et al. used quantitative data and in-depth narrative interviews to answer the research question. Sadan (2014) and Fetters et al. (2013) argued that the mixed method is a combination of qualitative and quantitative approaches to understand a research problem by using numbers. Consequently, I did not choose mixed methods because the purpose of this research is to explore strategies that logistics leaders use for process improvement. The data from semistructured interviews to develop themes, company documents, and archival records were means to answer the research question; the use of statistical analysis was not necessary. Additionally, time constraints for the study and the

complexity of mixed method research are factors for not choosing the mixed method (Lavelle, Vuk, & Barber, 2013; Sadan, 2014). Based on the differences between quantitative and qualitative research methods, the qualitative method was most appropriate for this study.

Research Design

Based on the differences in qualitative designs, case study, phenomenology, ethnography, narrative, and grounded theory, I used a case study design for this study. The case study, a single case or multiple case within the bounds of time and location, is suitable for the research questions that require an understanding of social or organizational processes (Yin, 2012). Case study researchers explore specific and distinctive event by focusing on an individual, a classroom, a system, or process (Yin, 2012). A case study approach is a means to explore problems in a workplace setting (Moll, 2012), which is the intent of this study.

I did not select phenomenology, ethnography, narrative, or grounded theory for this study. The phenomenological design is a means to understand lived experiences of the participants in a study to establish meaning (Chen & Deterding, 2013). To answer the research question and gain an in-depth understanding of lived experiences, the collection of rich data from participants is a necessity for a phenomenological study (Freeman, Fothergill-Bourbonnais, & Rashotte, 2014; Wilson, 2014). Although phenomenology is suitable for a researcher to describe and interpret phenomena to create meaning (Stierand & Dorfler, 2012), the phenomenology design was not the most appropriate method for exploring implementation strategies for PI. This study focused on the strategies that

logistic leaders use to implement PI and not the essence of PI. Additionally, Phenomenologists rely on interviews as the source of data collection (Tavakol et al., 2012); but I used multiple data collection sources. Therefore, I did not select the phenomenological design.

Ethnography is an appropriate design to study an entire culture of a group in the field of Anthropology (Gustafsson, Kristensson, Holst, Willman, & Bohman, 2013). The ethnographic design, with anthropological roots, has a focus on nature, construction, and maintenance of culture (Coughlin, 2013). The process extends beyond participants' words to understanding the shared system of meaning of culture (Coughlin, 2013; Flemming, Graham, Heirs, Fox, & Sowden, 2013). The labor-intensive process involves prolonged contact with the group members (Roberts & Bailey, 2013). The ethnographic process could involve multiple data collection methods for a single phenomenon to explain how behavior and experiences form the basis to construct culture (Coughlin, 2013; Roberts & Bailey, 2013). Based on the definition provided, the ethnographic approach is not suitable for this study. The focus of this study was not to establish a cultural basis for implementing PI. Instead, the focus was to explore the experiences of logistics leaders to understand the strategies that logistics leaders use to implement PI in the aviation industry.

A narrative inquiry involves the study of a story, interpretation, and discourse of an event or a series of events to understand the life of participants (Green, 2013). Purposes for using a narrative inquiry are to investigate what happened in social and personal conditions, to establish significance or meaning of the experience, and to convey

the experiences and the life of participants (Green, 2013). Data sources for the narrative design are journals, letters, stories, field texts, autobiographies, photographs, documents, conversations, stories, and research interviews (Thomas, 2012). I did not choose the narrative design because the focus of the design, a clear view of participants' lives (Thomas, 2012), was not the most appropriate design for this study.

Grounded theory, with sociological beginnings, involves extensive data collection to substantiate theoretical significance (Bateman, 2013; Nilsson & Durkin, 2014). Grounded theory focus is not descriptive; however, grounded theory involves systematically categorizing interrelated statements to generate theory and to discover the meaning of concepts (Applegarth, Dwyer, Moxham, & Happell, 2013; Nilsson & Durkin, 2014). Applegarth et al. (2013) and Lawrence and Tar (2013) argued that researchers collect data and use inductive reasoning as a process to ground the data into theory. Consequently, grounded theory is not suitable for this study because building or generating new theories was not the purpose of this study. The purpose of this study was to explore strategies and not to develop theory. The theoretical sampling involved in grounded theory (Hoare, Mills, & Francis, 2012) extends beyond the purposeful sampling of participants in this study.

The single-case study design was the most appropriate design for this study. According to Yin (2012), a single case is appropriate when the research objectives are exploring commonplace situations. The design is appropriate for an in-depth exploration of issues or problems of a single participant, timeframe, or a group (Sugar, 2014; Vohra, 2014). Gremyr and Raharjo (2013) used a single-case study to explore organizational

improvement strategies for the application of PI in healthcare. Gremyr and Raharjo used interviews and documentation as the data collection method for the in-depth exploration of PI. Lee, Tai, and Sheen (2013) used a single-case study to explore how leaders can use Lean Six Sigma to improve service quality and reduce wait time. Andersson et al. (2014) applied a single-case study to explore how the use of a joint-use strategy of Lean and Six Sigma can improve flexibility, robustness, and agility in telecom manufacturing company. Andersson et al. identified the PI CSF for the company to remain competitive. Turner et al. (2013) argued that the single-case study is a means to explore one issue and one bounded case. For these reasons, I selected a case study design for this study. This method was suitable for exploring the strategies that logistics leaders use to implement PI in the aviation industry.

Saturation is a research objective to ensure that adequate and quality data support the research (Yu, Abdullah, & Saat, 2014). The principles to reach data saturation are no new information, no new coding, no new themes, and the ability to replicate the study (Fusch & Ness, 2015). Saturation occurs at the point in the interview process where the researcher ceases to identify new information or themes (O'Reilly & Parker, 2013; Yu, et al., 2014). Additionally, Fusch and Ness (2015) noted that member checking and triangulation are data saturation methods. Member checking interviews was a method to achieve data saturation in this case study design. The process of member checking interviews is a means to obtain in-depth data (Fusch & Ness, 2015). Member checking is the process of allowing the participants to review the analyzed data and findings (Lincoln & Guba, 1985). Additional emerging themes could occur with the use of member

checking. Li, Westbrook, Callen, Georgiou, & Braithwaite (2013) used member checking of research results through follow-up interviews with participants to clarify findings as a process to explore further emergent themes. Stipp and Kapp (2012) used follow-up interviews and presented participants with finding to meet member checking requirements. I used member checking interviews as the method of reaching data saturation. I conducted the initial interview, interpreted the participant's response, allowed the participant to validate the interpretation, and continued the member checking process until there was no new data to collect. I used follow-up interviews and continued to collect data until reaching a point of data saturation. Data collection and analysis occurred concurrently. I continually added the data collected from the participants to the analysis and continuously compared the results to the previously coded data until saturation occurred.

Additionally, methodological triangulation is an appropriate method for data saturation (Fusch & Ness, 2015). Methodological triangulation is a method for ensuring a consistency of findings across the different data collection methods (Denzin & Lincoln, 2011). I used multiple sources of evidence from semistructured interviews, company documents, and archival records to determine the strategies that logistics leaders use to implement PI in the aviation industry.

Population and Sampling

The population for the study consisted of logistics leaders, working with the Air Force in the State of Georgia, who use PI in the military aviation industry. Sampling, a method of selecting the population and a cornerstone of research integrity, could vary

based on research design and questions (Lotz, Jox, Borasio, & Fuhrer, 2015; Uprichard, 2013). Purposive sampling is the process for selecting participants who have experienced the phenomenon and could provide answers to the research question (Lotz et al., 2015; Truglio-Londrigan, 2013). Moreover, purposive sampling is a means to select participants based on knowledge of phenomena (Lotz et al., 2015; Valizadeh, Dadkhah, Mohammadi, & Hassankhani, 2014). The purposive sampling method is a nonprobability method of sampling; the researcher purposefully selects participants who suit the purpose of the study (Kandola, Banner, O'Keefe-McCarthy, & Jassal, 2014; Wilson, 2014). Kokkranikal et al. (2013) used purposive sampling in a case study to explore fundamental barriers and challenges in the use of Six Sigma as a business improvement methodology in the hospitality industry. Mathu (2014), using a case study design, found that purposive sampling was a good approach to explore areas for applying the TOC to improve supply chain management. Shokri et al. (2014) used purposive sampling to investigate the implementation of the Six Sigma methodology as a systematic business strategy and quality initiative to improve logistical functions. Purposive sampling is appropriate because purposive sampling is a method to target appropriate participants to align participants with the overarching research question (Armstrong et al., 2013; Frich, Rothing, & Berge, 2014). For these reasons, I used purposive sampling in this study.

I selected participants based on purposive sampling. The eligibility criteria for selecting participants in this study was they must possess knowledge of the phenomena, have the experience in developing business cases for PI, have stakeholders' responsibility for organizational cost reduction, and possess experience in leading people and

organizational change. Research sampling size varies based on the research question and the purpose of the research (Marshall, Cardon, Poddar, & Fontenot, 2013). A small sample size consisting of 10 or fewer participants is characteristic of a qualitative, phenomenological research to gain insight into a complex phenomenon (Marshall et al., 2013). Yap and Webber (2015) used 20 participants in a case study to explore corporate culture. However, Gremyr and Raharjo (2013) used a sample size of seven in a case study to provide contextual knowledge as a means of improving applications of quality force deployment in healthcare. Andersson et al. (2014), in a case study, used a sample size of three participants to explore the joint-use strategy of Lean and Six Sigma to improve product production. Robinson (2014) noted that a case study design is a distinct kind of method that is separable from the standard qualitative method, and a sample size of one person is appropriate when considering the researcher's function of the case study. For example, when the researcher uses a case study for a function to demonstrate possibility, such as demonstrating a phenomenon is possible, one participant is sufficient (Robinson, 2014). To answer the research question, I interviewed six of eight participants who are successful in implementing PI strategies in the logistics organization. I used operational readiness documents, Lean maturity reports, and performance reports to access the successful implementation of PI. I continued interviews, analysis of other materials, and member checking until I reached saturation. The sample size was small; however, the organization has eight key leaders who are responsible for developing strategies for implementing PI.

I used member checking and methodological triangulation to reach data saturation. In qualitative research, data saturation is a key element in the selection of participants (Patrick et al., 2011). Saturation is the point in the interview process where the researcher ceases to identify new concepts (O'Reilly & Parker, 2013; Yu et al., 2014). Data saturation occurs when no new themes, concepts, or findings are evident during the data analysis process (O'Cathain et al., 2014; Zeldenryk, Gray, Gordon, Speare, & Hossain, 2014). The use of member checking and methodological triangulation are appropriate means to achieve data saturation (Fusch & Ness, 2015). I continued the interview process until there was no more meaningful data and no new themes. This saturation process is an enabler for the researcher to provide depth and breadth of information until no new themes or data occur thus enhancing the validity of the results in a study (Fusch & Ness, 2015). The method for member checking was allowing the participants to review and validate the interpretation of interview data and findings. The process of methodological triangulation was the use of multiple sources of data: interviews, company documents, and archival records were the data sources.

The purposive selection of participants was appropriate for acquiring participants who possess knowledge of the phenomenon and experiences to answer the research questions (Spiri & MacPhee, 2013; Truglio-Londrigan, 2013). Kokkranikal et al. (2013) selected interview participants with experiences and knowledge of the Six Sigma process. Mathu (2014) selected participants based on a specific purpose, task, or expertise who were leaders in the supply chain decision-making process. Fang and Saini (2012) used purposive sampling acknowledging that the participants should have experiences,

knowledge, and expertise to provide an understanding of the phenomenon and answers to the research questions. The eligibility criteria for selecting participants in this study was they must possess knowledge of the phenomena, have the experience in developing business cases for PI, have stakeholders' responsibility for organizational cost reduction, and possess experience in leading people and organizational change.

I used semistructured interviews as a source of data. The use of semistructured interviews is a means to obtain data to gain a broad understanding of a phenomenon (Marshall et al., 2013). Case studies should take place within the natural settings of cases (Yin, 2014). The participants' coordination on the interview setting facilitates the interview process (Cleland et al., 2014; Toshiko, Mariko, Kikuko, & Takeo, 2014). Privacy, comfort, and an environment free of interruptions are requirements for choosing an interview setting to establish rapport and to encourage interviewees to reveal their experiences (Mealer & Jones, 2014; Toshiko et al., 2014). Familiarity with the interview setting contributes to a comfortable and stress-free environment for answering research questions (Doody & Noonan, 2013; Stenfors-Hayes, Hult, & Dahlgren, 2013). Consequently, the participants coordinated on selecting the interview location to ensure privacy, comfort, and a familiar environment. Additionally, I used face-to-face interviews to facilitate a more personal interaction and rapport.

Ethical Research

Research ethics is essential for the protection of participants' rights, safety, dignity, and wellbeing (U.S. Department of Health and Human Services, 1979). Ethical procedures constitute principles for research ethical protocols and standards: informed

consent, the privacy of participants, avoiding harm, cognizance of vulnerable groups, participants' rights, data restriction, data storage, and conflicts of interest (Stacey & Stacey, 2012). The Internal Review Board (IRB) must grant ethical approval before conducting the research and interviewing participants (Olausson, Lindahl, & Ekebergh, 2013; Robertson & Thomson, 2014). I used the Walden University's IRB as a means to assure adequate ethical protection of participants. Members of the IRB granted permission to conduct the study. The Walden IRB approval number is 08-09-16-0294702.

Oroya, Stromskag, and Gjengedala (2013) and Stacey and Stacey (2012) acknowledged the ethical requirement to gain informed consent. Participants signed an informed consent form, shown in Appendix A, before participating in the study. Based on the information in the informed consent form, participants was aware of the risks in participating in the study and the actions for mitigating the risks; Stacey and Stacey (2012) used a consent form for this purpose. I used the informed consent form to ensure that participants were aware of ethical guidelines, the details of the study, the voluntary nature of the study, the confidentiality requirements, and the participation procedures.

The protection of participants and adherence to ethical standards related to research are critical phases of the research study (James, Taylor, & Francis, 2014; van der Eerden et al., 2014). Informing participants of the right to withdraw from the study is an ethical requirement (U.S. Department of Health and Human Services, 1979), and I complied with the ethical requirements. I informed the participants of their right to decline or withdraw from participating in the study, at any time during the study, by

verbal or written notification. The participation of participants was voluntary, and participants did not receive any form of incentive or compensation; Peyrovi, Raiesdana, and Mehrdad (2014) used this process in a phenomenological study.

Privacy and confidentiality are ethical principles (Killawi et al., 2014). To ensure privacy and confidentiality of research data, I stored signed informed consent forms, interview transcripts, interview recordings, and soft copy data that reside on a flash drive in a locked storage cabinet. The disposition of data entails destruction 5 years after the completion of the study (Mealer & Jones, 2014). I will destroy the password protected flash drive 5 years after completing the study. Procedures for protecting the confidentiality of participants was one-on-one interviews conducted in a private setting; Houghton, Casey, Shaw, and Murphy (2010) recommended these procedures in a qualitative case study research. Other confidentiality procedure is coding and eliminating the use of names (Stacey & Stacey, 2012). To maintain the participants' confidentiality, I only described participants by number, such as participant number1 as P1. The process of referencing participants by using assigned numbers is a means to achieve confidentiality (Wagstaff & Williams, 2014).

Data Collection Instruments

Case selection, person, organization, incident, or project, are factors in determining the data collection process (Russell, 2013; Vohra, 2014). In qualitative research, the inquirer is the main instrument in the data collecting process (Freeman et al., 2014; Wagstaff & Williams, 2014). In a qualitative case study, interviews are one of the most important source of data collection (Koch, Niesz, & McCarthy, 2014; Yin,

2014). However, the use of multiple sources of evidence enhances the construct validity and reliability of this study (Yin, 2014). In a study to investigate diversity management practices in China and India, Fang and Saini (2012) collected data using semistructured interviews and secondary data sources such as documents, government reports, and media coverage as data collection sources. Likewise, Malik and Blumenfeld (2012) explored the impact of Lean Six Sigma and quality management on organizational learning capabilities; semistructured interviews and organizational documents were the multiple data sources. Yin (2014) identified documentation, archival records, interviews, direct observation, participant-observation, and artifacts as sources of evidence in a case study design. Therefore, I used semistructured interviews, organizational documents, and archival records as data collection strategies to explore the strategies that logistics leaders use to implement PI.

The objective of the data collection process was to obtain perceptions and ideas about logistics leaders' strategies for successful implementation of PI. Semistructured interviews are appropriate when researchers seek a detailed understanding, the interview protocol contains open-ended questions, and the researchers need the freedom to follow up on intriguing lines of inquiry (Rubin & Rubin, 2012). During the interview process, Gremyr and Raharjo (2013) used an interview script while conducting face-to-face interviews. The interview script was a means to guide the research. McInnes et al. (2012) used semistructured, face-to-face interviews and an interview guide to identify views on the conditions for effective clinical networks and desirable outcomes of successful clinical networks. Consequently, I used semistructured interviews to allow the

participants to describe their experience of implementing PI by answering open-ended interview questions. During single, face-to-face interviews, participants' responded to open-ended interview questions, shown in Appendix B; this process is a means to obtain rich details of the phenomenon (Peyrovi et al., 2014).

Dependability, credibility, and transferability are components of reliability and validity in a qualitative study (Houghton et al., 2013). The process for enhancing the reliability and validity of the instrument is designing the instrument to ensure dependability and credibility (Stewart & Rae, 2013; Truglio-Londrigan, 2013). The composition of the interview protocol, designed for the collection of data to answer the research question, is a vital aspect of dependability (Lincoln & Guba, 1985; Sim, Hattingh, Sherriff, & Tee, 2014). The interview questions, shown in Appendix B, are clear and open-ended and focus on identifying strategies that logistics leaders use to implement PI. With the use of open-ended questions, participants can provide his or her perceptions and ideas of the phenomenon (Ballangrud, Hall-Lord, Persenius, & Hedelin, 2014; Horne, Lincoln, Preston, & Logan, 2014). Additionally, Yin (2014) noted that the use of case study protocol is a general way to approach dependability. Documenting the research process, providing descriptions of the research process, research design and method, data collection, and documenting the data analysis technique were the dependability procedures in this study.

A process to achieve credibility is member checking and triangulation (Houghton et al., 2013; Yin 2014). Member checking, based on an in-depth data analysis and repeated review of the transcripts and findings, is a process to ensure accurate

descriptions or interpretations of the data (Houghton et al., 2013; Li et al., 2013). Koelsch (2013) allowed participants to validate transcript accuracy and research findings as a means of member checking to ensure the accuracy of the data and to enhance credibility. Similarly, Koller, Khan, and Barrett (2015) used member checking to achieve credibility; participants reviewed transcripts and findings to confirm the report was accurate and reflected their views and experiences. Member checking is the process to enhance reliability and validity of the data collection instrument (Houghton et al., 2013; Yilmaz, 2013). The method of member checking in this study was allowing participants to read the transcript of his or her interview and verifying the result of the data analysis. The participants' verification of the data analysis results, reviewing themes, and accuracy of findings is a means to achieve research dependability (Blank, Harries, & Reynolds, 2013; Houghton et al., 2013). I used member checking, a process to ensure trustworthiness (Sinden et al., 2013), in the study.

Yin (2014) noted that triangulation from multiple sources of evidence is a means to strengthen credibility. Pederson, Hack, McClemont, and Taylor-Brown (2013) used multiple data sources of evidence from interviews, reflexive journal notes, and scientific literature to enhance the credibility of the results in the study. Suarez-Barraza and Miguel-Davila (2014) triangulated data from observation, nonintrusive participant observation, document analysis, and in-depth semistructured interviews, to enhance credibility. Fusch and Ness (2015) noted that triangulation is a method to explore different levels and perspectives of the same phenomenon to ensure credibility. The information in documents and archival records such as organizational assessment reports,

policies, strategic plans, mission capability performance reports, and inspection reports were other sources of data to determine the strategies that leaders use for implementing PI. The findings in the documents and archival records were vital data to corroborate the data found in the interviews. Therefore, I used methodological triangulation to enhance credibility. The methodological triangulation from interviews, organizational documents, and archival records is a means to provide confirmation of evidence found in different data collection sources (Yin, 2012).

Data Collection Technique

Data collection is an integral part of the research process for gathering information to answer research questions (Sim et al., 2014). The inquirer uses multiple sources of data for a qualitative case study (Yin, 2012). Interviewing participants is a principal method to collect information, in case study research, to understand the participants' point of view to establish meaning (Davis, 2014). In a case study, Buavaraporn and Tannock (2013) used multiple data sources, interviews, and company documents, as the data collection techniques to explore how financial institutions adopted business process improvement to improve service quality to enhance customer satisfaction. Similarly, using a case study to explore knowledge management approaches for modeling and analyzing knowledge-intensive business processes, Ranjbarfard, Aghdasi, Albadvi, and Hassanzadeh (2013) used interviews, strategic planning documents, job description, and annual and monthly reports as data collection techniques. Bahn (2013) found that semistructured interviews and company document were appropriate data sources to explore how a robust safety system could improve an

organization's safety culture. Interviews, organizational documents, and archival records were sources of data for this study. The use of interviews, using open-ended questions and data coding the interview responses, are means to identify common themes from the experiences of participants (Hackett et al., 2014; Junehag, Asplund, & Svedlund, 2014). The organizational documents and archival records were other sources of information. The information in the company documents and archival records was evidence for developing converging lines of inquiry. The data from company documents collected from inspection reports, strategic plans, performance metrics, climate assessments, archival records, and the data from interviews were the means for methodological triangulation.

I conducted semistructured interviews in this study following an interview protocol, shown in Appendix C. The steps I used for the data collection techniques were contact participants by telephone and E-mail, schedule and conduct the interview, and accomplish detailed note taking of the interview process; Miller and Dorman (2014) used these procedures in a qualitative study. The purposive sample participants participated in the interview after signing the consent form. The participants and I scheduled the semistructured interviews for a time, date, and location agreeable to the participants. Participant's selection of the interview location enhances rapport (Mealer & Jones, 2014). Participants attended a pre-interview meeting; these steps are means to build rapport and to discuss the purpose of the research and data collecting process; Toshiko et al. (2014) used these procedures in a qualitative study.

The participants provided answers to seven interview questions; what or how questions are means for exploring experiences (Jarrett, 2014; Kemparaj & Chavan, 2013). To be respectful of the participants' time, I ensured the single interviews did not exceed 60 minutes; the time length is an adequate time for interviews (Holms, Milligan, & Kydd, 2014). The data from the interviews and the review of secondary sources such as organizational assessment reports, policies, strategic plans, performance reports, and inspection reports were multiple sources of data for triangulation. I compared information stemming from the different data sources to corroborate and augment the evidence.

Audio-recorded interviews and note taking are data collection techniques (Holms et al., 2014; Tembo, Parker, & Higgins, 2013), and I used these techniques in the study. The computer and an RCA voice recorder were the sources for recording the interviews. The audio recording of interviews is necessary for transcript accuracy (Hackett et al., 2014; Oroya et al., 2013). Note taking is a means to describe nonverbal communication and to collect information on behavioral observations and impressions (Freeman et al., 2014; Miller & Dorman, 2014). I used electronic software, NVivo, for coding and data analysis to establish themes. The use of electronic software is an appropriate means to develop themes (Hackett et al., 2014). Following confidential compliance for data disposition (Junehag et al., 2014; Miller & Dorman, 2014), I stored the consent forms and data in a locked safe, which will remain in the safe for a minimum of 5 years.

An advantage of the data collection technique is the interview process is a means to ensure research quality based on the research design (Bevan, 2014; Elo et al., 2014).

The in-depth, semistructured interview is appropriate for gathering rich details from the participants to explore their experiences and establish meaning (Holms et al., 2014; Temboa et al., 2013). Through freedom of expression during the interview, participants provide data for deep exploration of the topic and reliable data for quality research (Jack & Wibberley, 2014; Stenfors-Hayes et al., 2013); I used this data collection technique.

Bias, a disadvantage to the data collection technique, has an effect on the interview process (Madera, 2013; Malone, Nicholl, & Tracey, 2014). Instrument bias, occurring when the interviewer asks leading questions and fails to plan an unbiased interview guide, is a detriment to research rigor (Powell, Hughes-Scholes, & Sharman, 2012). The interviewer and participant could influence the data collection process by failing to bracket preconceptions of the phenomenon (Copestake, 2014; Darawsheh, 2014). Using a phenomenological approach, Bornsheuer, Henriksen, and Irby (2012) took into account researcher bias and used bracketing, an independent reviewer, peer debriefing, and multiple researcher perspectives to mitigate bias. I used bracketing and member checking to mitigate bias. A pilot study was not necessary for this study based on the participants' knowledge and experiences of the phenomenon.

I employed member checking and peer debriefing in the study. Member checking is a process to enhance trustworthiness in a study (Sinden et al., 2013). Elements of member checking are confirming data interpretation and follow-up interviews (Fusch & Ness, 2015). I used the member checking techniques that Blank et al. (2013) used in a qualitative study. The participant received a copy of his or her interview transcript for review and confirmation of accuracy. After transcript verification, data analysis, and

follow-up interviews, participants validated the interpretation of their experiences. The participants provided feedback on the data analysis and the interpretations. The member checking process was a means to determine whether the findings are reasonable and whether the themes uncovered appear accurate and credible (Jeffers, 2014).

The case study design has a focus on data collection from multiple sources (Powell, 2013; Yin, 2012). Documentation, archival records, interviews, direct observation, participant-observation, and physical artifacts are appropriate data sources for case study research (Yin, 2012). Assarlind and Aaboen (2014), using a single-case study, explored the gradual adoption of Lean Six Sigma in a medium-sized Swedish manufacturing company. Assarlind and Aaboen selected interview and observation as multiple sources of evidence. Semistructured interviews, documents, and archival records were the data sources in this study. The use of multiple data sources is a means to strengthen research findings (Yin, 2012). Yin (2014) recommended triangulation in a case study to corroborate the same phenomenon.

I triangulated the data; triangulating the data from the interviews and others sources is a means to substantiate the findings from more than a single source (Yin, 2014). The data from documents and archival records was a source of information for exploring the strategies that logistics leaders use for PI implementation. Meyer, Hall-Clark, Hamaoka, and Peterson (2015) performed a pilot study to assess the impact of military culture on healthcare. Organizational cultural factors such as behavior, attitudes, skills, policies, affect healthcare delivery (Meyer et al., 2015). I examined documents and archival records to gain information on organizational culture, leadership style,

strategic and performance management, organizational change, and human capital. The evidence from interviews, company documents, and archival records were facts to corroborate the strategies that logistics leaders use to implement PI in the military aviation industry.

Data Organization Technique

Yin (2014) emphasized the importance of creating a case study database and organizing and documenting the data. Moreover, Yin recommended the practices of other researchers as a guide for data organization. The data organization techniques of other researcher were appropriate for this study. Loeppenthin et al. (2014) used a semistructured interview guide, digital recorder, verbatim transcription into a computer, and NVivo software as data organizational techniques. Tavakol et al. (2012) audiotaped the interviews, transcribed the interviews verbatim, and used NVivo software for data storage and analysis. Similarly, Mealer and Jones (2014) recorded telephone interviews, transcribe interviews verbatim, used a computer for storage and data analysis, and stored the data in a locked file cabinet. For these reasons, I used digital voice recordings of participants' responses to interview questions, transcribed the interview verbatim, downloaded the audio interviews into a password-protected computer, and pasted verbatim transcription of interview responses into Microsoft Word research log.

A data organization technique is essential for duplicating the research, performing data analysis, and safeguarding the data. Moss and O'Neill (2013) kept a journal and notes throughout the data collection process. Ginsberg and Sinacore (2013) used journaling to keep an audit trail of the research. Keeping a journal is a data collecting

technique for the researcher to annotate rich detail of the data collection process to enhance research rigor (Moss & O'Neill, 2013). I kept a journal as an audit trail of the research. I maintained separate data files for the interviews, documents, and archival records. This organizational technique is a means to create a formal and presentable database for others to review the evidence (Yin, 2012). The disposition of data entails destruction 5 years after the completion of the study (Mealer & Jones, 2014).

Documenting the data analysis process is essential for credibility and transferability (Ament et al., 2014). Roberge et al. (2013) used NVivo to classify and catalog data as a process for data management to identify emerging themes. Kelly and McAllister (2013) used NVivo software for data analysis and as a process to document the analysis. Therefore, I used Microsoft Word, NVivo 11, and Microsoft Excel software as data organization tools. Microsoft Word is appropriate software for creating a filing system for classifying and cataloging the data. Nvivo and Microsoft Excel are appropriate for data storage and analysis. Yin (2012) noted the importance of organizing, categorizing, storing, and retrieving data.

The safeguarding of research data is a factor of confidentiality (Mealer & Jones, 2014). Mealer and Jones (2014) used a locked file cabinet for safeguarding data. Mutula (2014) argued that factors of data organization are data storage, retrieval, recovery, and backup services. I used data organization technique to safeguard the data. The techniques to safeguard data were using a computer disk for filing the transcribed interviews of participants, locking research data in a file cabinet, and creating a backup disc of the separate Microsoft Word files of each participant's information.

Data Analysis

Data analysis is a systematic review of data elements involving data interpretation to discover underlying meaning (Blank et al., 2013; Rynink, Roberts-Collins, McKenzie-McHarg, & Horsch, 2014). The researcher uses the data analysis process to provide explanations, understanding, and interpretation of the phenomena (Moss & O'Neill, 2013; Rynink et al., 2014), which I applied to this study. Data analysis entails preparing and organizing the data for analysis and identifying themes (Arbour & Wiegand, 2014; Tavakol et al., 2012). Braaksma, Klingenberg, and Veldman (2013) argued that the knowledge and experience of the researcher and the analysis process are factors in the accuracy of the analysis.

Methodological triangulation is appropriate for a case study design (Fusch & Ness, 2015). Methodological triangulation is a data analysis process of combining data sources to study the same social phenomenon (Denzin & Lincoln, 2011). Four types of triangulation are data triangulation, investigator triangulation, theory triangulation, and methodological triangulation (Denzin & Lincoln, 2011). I used methodological triangulation, the use of a variety of data sources (Fusch and Ness, 2015), in this study. In a case study research, Suarez-Barraza and Miguel-Davila (2014) triangulated data from direct observation, nonintrusive participant observation, document analysis, and in-depth semistructured interviews. The result of triangulation was a converging of the same set of facts from the various sources (Suarez-Barraza & Miguel-Davila, 2014). Librelato et al. (2014) used triangulation in a case study to explore the integration of value stream mapping and the thinking process of the theory of constraints. By using

triangulation of data from multiple sources that included data from documents, semistructured interviews, and observation, Librelato et al. reinforced the aspects of validity. Yin (2012) noted that triangulation is a major strength of case study data collection. I collected data from multiple sources; data from semistructured interviews, archival records, and documentation is a means to enhance the depth of study and reduce bias (Yin, 2012).

An analysis of semistructured interviews, the main source of data in this study, was a step in the analysis process. Coding the participants' statements into clusters of invariant constituents, single concepts, or ideas, to develop theme clusters is a process to establish meaning (Klinke, Hafsteinsdottir, Thorsteinsson, & Jonsdottir, 2014; Stone, 2013). However, researchers use various methods and sequential processes for data analysis (Darawsheh, 2014). In a grounded theory study, Stone (2013) used open inductive coding through line-by-line reading of the interview transcripts and NVivo software for data coding and analysis. In a case study, Yap and Webber (2015) coded in-depth interviews to identify themes and used NVivo software as the data analysis process to explore factors that affect corporate culture. However, Allahdadian, Irajpour, Kazemi, and Kheirabadi (2016) and Kayama (2013) used line-by-line manual coding of interviews as the data analysis process. Miles and Huberman (1994) described line-by-line inductive coding techniques during early steps in analysis. Yin (2009) summarized the Miles and Huberman data analysis process into six stages. I modified the steps Yin described, and I used them in data analysis. The data analysis process consisted of the following steps:

1. Collect the data

2. Separate the data into groupings

3. Group the data into themes

4. Assess the material

5. Develop conclusions

I performed an analysis of the data after completing the review of organizational documents, archival records, and interviews. Bracketing is a factor to consider during the data coding and analysis process (Yilmaz, 2013). Yilmaz (2013) argued that bracketing is a process where the researcher set aside orientation, predispositions, and biases. Kelly and McAlister (2013) used bracketing in a phenomenological study to understand the essence of building a supportive learning culture through preceptorship. Tufford and Newman (2012) argued that bracketing is a method for the researcher to mitigate the effects of unacknowledged preconceptions that could skew the research findings. Bracketing is a key element in the coding process to enhance research rigor (Kelly & McAlister, 2013). I used bracketing in this study.

I used manual and electronic coding procedures. Campbell, Quincy, Osserman, and Pedersen (2013) argued the researcher should develop a coding scheme for reproducible analysis. I began the manual coding process with a review of the raw data and bracketing experiences to eliminate biases; Tufford and Newman (2012) recommended these procedures. Researchers use manual coding procedures as a process to identify themes (Low, Tong, & Low, 2016; Yilmaz, 2013). Using a phenomenological approach, Arbour and Wiegand (2014) used coding of significant statements to identify

emerging themes. Coding procedures include highlighting significant statements on the raw transcript and color code statements (Tavakol et al., 2012). In a case study, Moore and Prentice (2013) used the color coding process to identify emerging themes to understand and improve collaborative practice among nurses. I used different color markers and highlighted significant statements in the raw transcript with different colors. Color coding the statements is a means to organize statements into themes (Arbour &Wiegand, 2014). The steps to group data into themes were (1) paste statements onto an Excel spreadsheet to establish horizonalization, (2) codify the statements into single or double word meanings and assign a representative number to facilitate sorting, and (3) copy the grouped numbers into individual spreadsheet tabs to form a larger unit of meaning and themes.

Additionally, I used commercial software, Nvivo 11, for the data analysis process. The use of Nvivo software is a means to develop themes from the interview data (Marshall & Friedman, 2012). Pfaff, Baxter, Jack, and Ploeg (2014) selected NVivo 10 software in the data analysis process for organizing and coding the data. Similarly, Townsend and Cox (2013) used NVivo for coding and data management. NVivo software is a means to organize, store, code, and manage collected data, which improves research dependability (Pfaff et al., 2014). For these reasons, I used NVivo 11 software for data management and analysis.

The NVivo software is a computerized technique for grouping raw data into clusters and themes based on the participants' experiences (Stomski, Mackintosh, & Stanley, 2014). The value of using NVivo software resides in enabling the researcher to

code data automatically and evaluate the results (Tavakol et al., 2012). The software is an enabler for the researcher to perform structural analysis of the data through automatic data coding, data retrieving and comparing data, and displaying data to visualize the results (Marshall & Friedman, 2012). Moss and O'Neill (2013), in a phenomenological design, used NVivo for data analysis. After loading the interview data into NVivo software program, Moss and O'Neill developed themes to understand the aesthetic and cultural pursuits of older patients in hospitals. After loading the interview transcripts into the software program, I obtained the computerized results. According to Sinkovics and Alfoldi (2012), the results, from NVivo software program, comprise meaningful word units for identifying emergent themes (Sinkovics & Alfoldi, 2012). I grouped the word units into themes. The NVivo software has program applications for importing the interview raw data, tracking ideas, and identifying trends and emerging themes (Nilsson & Sandoff, 2015). Dawson, Cargo, Stewart, Chong, and Daniel (2012) in a mixed method study used these procedures to identify emergent themes from interview data. The use of NVivo software was an appropriate data analysis method for this study.

A focus of the data analysis process is relating themes and findings to literature and the conceptual framework. After the identification of themes, I performed an overall data analysis through interpretation of themes and other data sources. Bornsheuer et al. (2012) related the research finding to the literature. Lin et al. (2013) performed a final analysis to relate findings to the conceptual framework and the identification of new knowledge. Lee, McNeill, Douglas, Koro-Ljungberg, and Therriault (2013) argued that a conceptual understanding of the facts and findings is a step in the analysis process.

Therefore, I focused on the key themes and corroborated the key themes with the extant literature and the conceptual framework. This step in the data analysis process is a means to make sense of the concepts, themes, and data sources (Lee et al., 2013).

Reliability and Validity

Reliability and validity are factors of quality research (Cronin, 2014). Accurate, genuine, and valid findings are overarching goals of the researcher (Lincoln & Guba, 1985). Establishing and implementing reliability and validity approaches are critical elements in research as means to legitimize the research findings (Yin, 2012). To achieve reliability and validity in qualitative research, the inquirer use research strategies to achieve dependability, credibility, transferability, and confirmability (Houghton et al., 2013).

Reliability

Dependability is an equivalent concept of reliability in qualitative research (Elo et al., 2014; Powell, Overton, & Simpson, 2014). The ability to replicate research is a factor of dependability (Mangioni & McKerchar, 2013; Peyrovi et al., 2014). In qualitative studies, steps to ensure replication include a rich, thick description of the research process and member checking (Kemparaj & Chavan, 2013; Peyrovi et al., 2014). For example, Peyrovi et al. (2014) used a phenomenological design to understand and gain deeper insights into the lived experiences of Iranian heart transplant recipients. Peyrovi's et al. strategy to enhance dependability was using an audit trail, providing evidence to support interpretations, adhering to the research design, and using transcript review. Similarly, in a case study, Moore and Prentice (2013) used an audit trail, kept a

chain of evidence, and provided details of the triangulation strategy to strengthen dependability. An audit trail is a means to enhance the ability to replicate research and repeatability (Peyrovi et al., 2014; Yin, 2014). To strengthen dependability, I provided an audit trail of the study, documented the details of the research process, and used transcript review and member checking procedures.

I maintained a detailed log of the data collection and analysis process as an audit trail method. The audit trail entails a detailed log of the description of the data collection instrument, processes, techniques, and processes for data coding, analysis, and interpretation (Cope, 2014; Peyrovi et al., 2014). The detailed protocol of the data collection process is a technique to enhance the reconstruction of the study for dependability (Kemparaj & Chavan, 2013; Venkatesh et al., 2013). The use of rich description of the data gathering and analysis process is a means to accommodate research replication of another researcher investigating similar research (Elo et al., 2014; Gardner, 2014). Strategies to mitigate threats to dependability include providing a rich description of the methods of data gathering, analysis, and interpretation to enhance replication (Cope, 2014; Sinkovics & Alfoldi, 2012). I used these strategies in the study.

For this study, details of the purposive sampling process, data coding, and constant check for accuracy constitute aspects of dependability and repeatability; Mosalanejad, Parandavar, Gholami, and Abdollahifard (2014) recommended these procedures. Using computer-assisted qualitative data software (CAQDAS) is a means to enhance rigor, a factor of dependability and reproducibility (Leech & Onwuegbuzie, 2011). Researchers can use CAQDAS as a systematic, auditable, and unbiased analysis

process to obtain consistent results (White, Oelke, & Friesen, 2012). White et al. (2012) enhanced dependability by using CAQDAS for data storage, indexing, coding, and theorizing. The value of electronic data coding is consistency in the coding process and accuracy in coding and reproducibility (Maitland, Stratton, Foster, Braham, & Rosenberg, 2014). I used CAQDAS in this study.

Transcript review, member checking, and details of the data analysis process are elements of dependability (White et al., 2012). White et al. (2012) used transcript review to enhance dependability. The researcher's assistants reviewed the transcripts and compared the transcript with the audio files. Li et al. (2013) strengthened dependability through member checking. Li et al. allowed participants to review and clarify finding. Bornsheue et al. (2012) used member checking during the data analysis process to refine the themes and ensure accuracy of the findings. Additionally, to enhance dependability, Li et al. triangulated data from interviews and observation notes during the data analysis process. For these reasons, I used transcript review, member checking, and triangulation to enhance dependability.

In case study research, maintaining a chain of evidence is a process to strengthen dependability (Yin, 2012). The external observers, the Walden committee members, are reviewers in the case study process to follow the chain of evidence. Yin (2012) noted that the role of the external observers is to ensure the existence of a chain of evidence in the research process of case study report and database, citations, research question and topics, and research question. I followed the chain of evidence process by

providing details of the study from the initial research question to research findings to enhance dependability.

Validity

The components of validity, internal and external validity, are factors of quality research (Odegard & Bjorkly, 2012). Credibility, transferability, and confirmability are important aspects of validity in qualitative research (Yilmaz, 2013). Zachariadis, Scott, and Barrett (2013) noted that the researcher strengthens credibility when the results are accurate accounts of the data collected during the research. For qualitative studies, credibility is internal validity and transferability is external validity that are critical factors of research quality (Kaczynski, Salmona, & Smith, 2014; Powell et al., 2014).

Credibility. Lincoln and Guba (1985) posited that credibility is confidence in the truth of research findings. The researcher strengthens credibility by providing an accurate description or interpretation of the participants' experiences (Stenfors-Hayes et al., 2013; Zarshenas et al., 2014). Bornsheuer et al. (2012), using a phenomenological approach, found that the triangulation of multiple data sources and member checking are means to strengthen credibility. Similarly, Kelly and McAllister (2013) used purposive sampling, bracketing, member checking, and an audit trail to strengthen credibility in a phenomenological study. Moore and Prentice (2013) used multiple sources of evidence consisting of semistructured interviews, direct observations, and the member checking to enhance the credibility of a case study research. For these reasons, I used a guided interview process, transcript review, member checking, multiple sources of evidence, and triangulation to enhance credibility.

A standardized interview process is a strategy to mitigate threats to trustworthiness and credibility (Zarshenas et al., 2014). Stanley and Nayar (2014) argued that research bias affects research rigor and credibility. The process to standardize the interview process for Koelsch (2013) was recording interviews for the purpose of word-for-word transcription and allowing participants to review transcripts for accuracy. Likewise, Mosalanejad et al. (2014) used audio recording and transcript review to enhance credibility. Bornsheuer et al. (2012) found that an interview protocol was a method to standardize the interview process to eliminate bias and strengthen credibility. I used an interview protocol, shown in Appendix C, as a means to strengthen credibility.

Transcript review is a fundamental element of credibility (Koelsch, 2013); the participant reviews the transcript summary for discrepancies and accuracy (Stewart & Rae, 2013). In a case study, Chambers et al. (2013) allowed participants to review the transcripts to ensure accuracy. Stipp and Kapp (2012) sent interview transcripts to participants to review transcripts for accuracy and completeness. In this study, I used transcript review; participants reviewed transcripts of their interviews. The process is a means to verify the accuracy of interview data (Allahdadian et al., 2016).

Member checking is a means to ensure credibility in the research findings (Mokhtari-Nouri, Ebadi, Alhani, & Rejeh, 2014). Researchers use member checking as a technique to ensure the research findings represent the participant's viewpoint (Kaczynski et al., 2014). Li et al. (2013) used the member checking process of conducting follow-up interviews with participants to clarify findings. Similarly, Sinden et al. (2013) allowed participants to provide feedback on the data analysis results.

Participants provided feedback on the data analysis and the identified themes to validate that the finding represented their intended expressions of experiences. After conducting the interviews, Mokhtari-Nouri et al. (2014) performed data interpretation and allowed the participants to validate the interpretation. This member checking process is a method to enhance credibility (Fusch & Ness, 2015). I used the member checking process to enhance credibility. The sharing the participant's data with the participant and the interpretation of the data with the participant ensures trustworthiness in the research (Houghton et al., 2013; Koelsch, 2013). Member checking is a process to ensure data accuracy by allowing participants to read his or her interview and data analysis to validate the accuracy of the transcript and research findings (Koelsch, 2013; Yilmaz, 2013).

Multiple data sources and triangulation of data are other elements of credibility in case study research design (Houghton et al., 2013). The inquirer uses multiple data sources to explore case specifics (Yin, 2012). Callery, Kyle, Banks, Ewing, and Kirk (2013) chose the triangulation of methods from questionnaires, interviews, and data from different informants to integrate findings. In this mixed methods study, Callery et al. corroborated themes from different data sources. Triangulating data from multiple sources is a process to validate the findings (Yin, 2012). I used methodological triangulation of data sources as a strategy to strengthen research credibility.

Triangulation, multiple methods of data collection in an attempt to gain an articulate, comprehensive view of the phenomenon, is a process of credibility (Cope, 2014; Street & Ward, 2012). For example, Roberge et al. (2013) chose triangulation as a

process to mitigate threats to validity in a multiple case study. Roberge et al. argued that the selection of four data sources was a method to confirm evidence. Felemban, St John, and Shaban (2015) used triangulation in a study to explore the environmental challenges that nurses experience with infection control practice and the strategies they use to overcome the challenges. The triangulation of data sources from document review, individual interviews, and focus groups, was an appropriate method to strengthen credibility (Felemban et al., 2015). Swafford (2014) argued that triangulating data is a technique that researchers use to assure reliability and credibility. For the purpose of this case study, I used methodological triangulation, the use of multiple sources of evidence (Fusch & Ness, 2015); multiple sources of data were interviews, documentation, and archival records.

Transferability. Transferability relates to reliability (Marshall & Rossman, 2016); the goal of transferability is to obtain dependable results that apply to the broader population (Elo et al., 2014). The connotation of transferability, an aspect of generalization in research, is that the findings are applicable to another setting or another group of people (Elo et al., 2014; Kemparaj & Chavan, 2013). However, Yin (2012) noted that in a case study research the researcher relies on analytical generalization; the investigator strives to generalize the results to a broader theory. Marshall and Rossman (2016) argued that other researchers determine the transferability of a set of findings. For this study, the replication of findings is the process for others to make the decision concerning transferability.

Another method used to enhance transferability is the rich description of the data analysis process (Houghton et al., 2013; Peyrovi et al., 2014), which is applicable for this study. Moore and Prentice (2013) used rich details in describing the methodological aspects of the study to establish transferability. Zarshenas et al. (2014), using a case study approach, provided rich details of participant selection, the interview process, data coding, data analysis, and procedures to enhance trustworthiness as a means of transferability. Based on the rich details of data analysis, the findings are transferable across other populations or settings (Peyrovi et al., 2014; Zarshenas et al., 2014). The transferability technique, in this study, is the rich details of selecting the research problem, research method and design, purposive sampling, and data collection and analysis. According to Magasi et al. (2012), the process is a means to replicate the finding.

Confirmability. The accuracy of research findings is an element of confirmability (Darawsheh, 2014; Doody, Slevin, & Taggart, 2013). Lincoln and Guba (1985) acknowledged that confirmabilit**y** is neutrality of the researcher**;** the participants shape the findings of a study and not researcher bias, motivation, or interest. Objectivity in data accuracy is a necessity for confirmability (Elo et al., 2014; Kemparaj & Chavan, 2013). Establishing a confirmability strategy is a means for other researchers to corroborate the findings in the study (Moore & Prentice, 2013).

An audit trail is a method to enhance confirmability (Peyrovi et al., 2014). The inquirer can achieve confirmability by creating an adequate audit trail of the data collecting process and research findings (Lincoln & Guba, 1985; Peyrovi et al., 2014). In

a phenomenological approach to understand the meaning of the lived experiences of practicing Jewish religion, Ginsberg and Sinacore (2013) kept a detailed record of the data collection and analysis process as an audit trail to strengthen confirmability. (Yilmaz, 2013) argued that an audit trail process of providing a rich description of the research method, data analysis process, interpretation, and conclusion strengthen confirmability. I provided an audit trail of the research process to strengthen confirmability. Factors of the audit trail are rich descriptions of the research method, data analysis process, interpretation, and conclusion (Cope, 2014; Yilmaz, 2013).

The use of CAQDAS, NVivo, is a means for achieving accurate coding and consistent themes (Al-Nawafleh et al., 2013; Sinkovics & Alfoldi, 2012). Loeppenthin et al. (2014) used NVivo 9 software for accuracy in data collection, data management, and theme development. Pfaff et al. (2014) used NVivo 10 software as a method to replicate the data coding and analysis process. Using NVivo software, the researcher can achieve neutrality and accuracy, which are elements of confirmability, in the analysis process (Leech & Onwuegbuzie, 2011; Marshall & Friedman, 2012). I used NVivo software 11 to enhance confirmability.

Data Saturation. Data saturation is a desired end state to enhance research quality (Yu et al., 2014). The researcher use data saturation as a process to determine the significance of the raw data (Crighton et al., 2013; Stoetzer et al., 2014). The result of data saturation is that no new category, concepts, or themes emerge in the development of findings (Doran et al., 2013; Vedel et al., 2014). Suarez-Barraza and Miguel-Davila (2013) used methodological triangulation to achieve data saturation. Suarez-Barraza and

Miguel-Davila saturated data from four multiple sources of data, direct observation, nonintrusive participant observation, document analysis, and in-depth semistructured interviews. By constant comparison of data, Suarez-Barraza and Miguel-Davila correlated the findings until reaching saturation, the point where no new information, no new coding, and no new themes emerged during data analysis (Fusch & Ness, 2015). Ament et al. (2014) chose methodological triangulation and member checking as data saturation methods. Ament et al. triangulated evidence from multiple data sources, semistructured interviews and field notes, to reach data saturation. Additionally, Ament et al. used member checking interviews as a means to obtain in-depth data and reach data saturation; the participants reviewed the findings for accuracy. Therefore, I used triangulation and member checking to reach data saturation. The data sources for methodological triangulation were semistructured interviews, company documents, and archival records. I used member checking or presenting the preliminary findings and interpretations to participants to check for accuracy and ensure that the findings are the participants' ideas and that I have accurately conveyed the meaning of their interviews.

Transition and Summary

Section 2 was a discussion of the project. The purpose of this qualitative case study was to explore logistics leaders' strategies for successful implementation of PI. The target population consisted of eight logistics leaders, working with the Air Force in the State of Georgia. The role of the researcher was to function as the primary instrument for the data collection process and to maintain strict adherence to ethical guidelines; Yilmaz (2013) recommended this process. The eligibility requirement for purposively

selected participants was logistics leaders who could provide rich details to understand the phenomenon.

Following ethical requirements, I interviewed participants to understand the participants' point of view of the phenomenon to establish meaning. Semistructured interviews, organizational documents, and archival records were the multiple data sources. Methodological triangulation of multiple data sources and member checking constituted credibility, confirmability, and transferability in the project.

Section 3 includes the findings of the research. Included in the section are the applications to professional practice, implications for social change, recommendations for action, and recommendations for further study. Additionally, the section is a discussion of personal reflections and a summary and research conclusions.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this qualitative single case study was to explore strategies that logistics leaders use to implement PI in the aviation industry. The data came from company documents, archival records, and interviews with logistics leaders. The findings in the study were the strategies that leaders used to achieve successful implementation of PI to improve performance and reduce cost. Seven themes emerged from the interviews, which were consistent with the information in the literature review. To achieve successful PI, leaders in this study focused on (a) leadership, (b) continuous improvement, (c) culture, (d) change, (e) performance, (f) strategic management, and (h) resources. The integration of these CSFs with the methods of PI enhances the successful implementation of PI.

Presentation of the Findings

The overarching research question used in this study was the following: What strategies do logistics leaders use to implement process improvement in the military aviation industry? I conducted semistructured, in-depth face-to-face interviews with six purposefully selected group and squadron civilian leaders each with over 10 years of experience. I interviewed five males and one female and used information from the organizational assessment reports, policies, strategic plan, performance reports, and inspection reports to corroborate findings from in-depth interviews. I assigned the participants alphanumeric codes from P1 to P6 to conceal the identity of participants and kept the key to the names in a locked cabinet.

I used the theory of constraints as a conceptual framework to guide the framing of interview questions. I transcribed tape-recorded interviews and uploaded the transcripts of seven interview questions into NVivo 11 software. I used journal notes, tape-recorded interviews, and NVivo 11 software for uploading and analyzing data to establish significant statements and themes. The coding process (see Data Analysis section) resulted in the identification of seven major themes, displayed in Table 2. The number assigned to each theme does not suggest any level of importance but rather the order in which the themes emerged during the analysis. A review of the peer-reviewed journal articles was necessary to tie the findings to existing literature.

Table 2

Major themes identified from data collection

# Minor themes	Participant responses	% of participant responses
Focus on leadership	167	17
Focus on continuous improvement	176	18
Focus on culture	168	17
Focus on change	110	11
Focus on performance	164	16
Focus on strategic management	101	10
Focus on resources	116	11

Theme 1: Focus on Leadership

The first major theme that emerged from data in interview questions 1, 3, 4, 5, 6, and 7 and documents was a focus on *leadership*. The six (100%) participants viewed leadership as a critical factor in developing strategies for process improvement. The participants stated that the strategies for successful PI begin with the leadership. Organization leadership is a key factor in the success or failure of PI (Sikdar &Payyazhi,

2014). The participants mentioned various factors of leadership to achieve PI success. Elements of leadership, presented as subthemes, that are critical for successful PI are the role of leadership and strategic alignment, leadership style, participatory leadership, leadership support and buy in, and effective communication (see Table 3).

Table 3

Factors of leadership

# Minor themes	Participant responses	% of participant responses
Role of leadership and strategic alignment	65	39
Leadership style	38	23
Participatory leadership	21	12
Leadership support and buy in	23	14
Effective communication	20	12

Role of leadership and strategic alignment. The subject organization has a higher PI maturity level than other similar organizations, according to PI assessment reports. The assessment reports and the participants indicated that leadership is a major contributing factor to the high level of PI maturity and implementation success. Interview data and inspection reports indicated that the role of leaders in placing emphasis on PI was a key reason for successful organizational performance. Moreover, six participants viewed that the role of leadership as the focal point for creating the strategic direction of the organization for PI. Leaders play an important role in the organization in setting goals and influencing followers' performance (Wang et al., 2014). According to participants and strategic plan documents, leaders set the directions of the organization with the vision, goals, and performance assessments. As indicated in organizational documents, the organization holds yearly offsite planning meetings to

define the organization's vision, identify goals, and determine objectives. Leaders use the meetings to define the organization's vision, identify goals, and determine objectives. P2, for example, viewed the role of leadership as developing the organization's strategic journey. P2 stated, "A major function of the leader is to develop the vision of the organization. I take a strategic look to make sure that I'm not missing anything that's coming down the road." The role of leaders is a major factor in determining organizational sustained performance through strategic choices (Ali & Ivanov, 2015), which aligns with the participants' views.

Strategic alignment. Strategic alignment is a function of leadership (Skidar & Payyazhi, 2014). Organizational leaders aligned the strategic plan with resources and process improvement projects to ensure mission success. Comprehensive strategic documents were evidence that each division leader accomplished detailed planning and tracking of goals, objectives, and resources for PI. Other detailed findings in the execution of strategic alignment are in Theme 6, Strategic Management. P4, for example, viewed the role of leadership and strategic alignment as the beginning of PI. P4 said, "One of the things that we try to attack in working for the federal government, particularly in the military, is we have to develop strategic alignment. That strategic alignment is based on the mission and vision of our leadership." Strategic alignment is a key strategy for the future success of organizations (Self, Self, Matuszek, & Schraeder, 2015), as the participants indicated.

Additionally, strategic alignment is critical for organizational change. Organizational change is inevitable in military organizations (Wright, 2013), especially

when considering reduced budgets, emerging threats, and new mission requirements involving base closures and increased flight operations. All participants expressed that the role of leaders is to align and guide the PI process as a change method to eliminate constraints. Organizational documents and monthly meetings substantiated leadership involvement in leading organizational change and aligning PI efforts to improve performance and achieve strategic objectives. According to P2 and P4, "organizational leaders communicate the PI changes to the workforce and assess the effect of the change." Leaders play an important role during the PI change process, which enhances the successful implementation of PI (Mehta, Maheshwari, & Sharma, 2014).

Self, Self, Matuszek, and Schraeder (2015) argued that strategic thinking is a key strategy for the long-term success of organizations. There is a correlation between the role of leaders, with strategic focus and management involvement, and the sustainability of continuous process improvement (Ali, Islam, & Lim, 2013). Moreover, factors of leadership emerged in the remaining six themes. The role of leaders in PI affects other major themes, continuous process improvement, organizational culture, performance, strategic management, and resource management.

Leadership style. The organization had a focus on the leadership style to improve organizational performance. The organization administers a climate assessment survey to determine leadership styles and effectiveness, job satisfaction, organization's communication flow, and workers' participation in making decisions. The six participants provided information on the type of organizational leadership that they used for successful implementation of PI. Even though not all the participants could name the

particular leadership style, the participants described the characteristics of a leader for successful implementation of PI.

Participants and the climate assessment report indicated that leaders must be open to others' ideas, not be autocratic, and create a participatory environment to achieve successful PI. According to P2, P3, and P4, a leader who is open, honest, and accepts criticism creates an environment where workers submit ideas for PI. The acceptance of new ideas is a motivator to improve performance. The organization has an open door policy and a good idea document for documenting and tracking innovative suggestions. P3 expressed the importance of leaders who are open to ideas. P3 said, "The leader who is open to innovation and suggestions, allowing personnel to actually offer up ideas, and if those ideas prove to be good, adopt them; I think it would cause an organization to rise rather than sink." Leaders who promote a climate of trust and open communication enhance the success of achieving continuous PI (Aij et al., 2015).

Moreover, P2, P3, P4, and P5 identified an autocratic or dictatorial style of leadership as a leadership style that hinders the implementation process of PI. Participants viewed an autocratic style of leadership as a constraint in implementing PI. Leaders who create a directive environment of telling subordinates what to do and directing the work tasks hinder performance. According to the organizational climate assessment document, leadership style was not autocratic. Individuals were encouraged to participate in the decision-making process. Additionally, organizational polices and suggestion boxes, located throughout the worksites, indicated that leaders welcomed feedback and upward communication. Participant 5 elaborated on autocratic leaders. P5

stated, “An autocratic leader in this work environment hinders process improvement. We create a climate for individual to get involved and make the changes that are needed to improve the process.” An autocratic leadership style discourages employees from participating in the decision-making process and suppresses initiatives to identify problems and implement solutions (Khuong & Hoang, 2015).

Participatory leadership and coaching. The organization had a focus on participatory leadership style and coaching to improve organizational performance. Sarti (2014) argued that participatory leadership and workers’ engagement improve performance. Characteristics of participatory leadership included consulting with employees and teamwork. Based on the organizational climate assessment report, a survey to access quality leadership, participatory leadership was an organizational characteristic. Moreover, participants highlighted the importance of a participatory leadership that allows participants to participate in the decision-making process. Leaders used a participatory type of leadership of consulting with workers and allowing workers to generate ideas, opinions, and integrate their suggestions into the decision-making process. Leaders who champion employees’ engagement and empowerment create a participatory environment. Leaders must engage the employees in the decision-making process in identifying and finding solutions to problems. All participants indicated that workers perform the tasks and are the first responders in identifying constraints. Additionally, using participatory leadership, leaders convey a sense of ownership and openness to new ideas. The unit used the Airmen Powered by Innovation (API) document to foster participatory leadership. The program is a means to encourage and

reward employees for good ideas and innovation to improve production. P5 indicated the importance of participatory leadership and the failure of PI because leaders do not empower workers with a sense of ownership. For example, P5 said, "A leader that just want it his or her way and doesn't take into consideration the views of the team then process improvement fails, the team feels like they have no ownership in the process." Participatory leadership enhances the success of implementing PI through the organization's ability to build teamwork and shared decision-making (Talib et al., 2013).

Additionally, a participatory leadership style is a means to build an environment of teamwork (Brajer-Marczak, 2014). Participants stressed the importance of teamwork in implementing PI. Teamwork facilitates shared goals, effective communication, and close coordination of work processes. Organizational members must work closely together and coordinate on PI changes, establish effective communication in sharing information, collaborate on improvement efforts, and embrace accountability for goal attainment. Participants indicated that implementing successful PI requires the engagement and empowerment of employees and stakeholders throughout the PI process. The organization, engaging employees in the improvement process through their involvement in product improvement teams, work group meetings, and work teams, exemplified key component of teamwork. P4 highlighted the importance of teamwork in improving processes and achieving organizational goals.

> In my experience, people's performance improves when they are allowed to participate in the process improvement process. They are allowed to identify

problems and be team members in the process event to change our processes.

People are motivated when the mission becomes their mission. (Participant 4)

Teamwork fosters employee engagement and empowerment (Chrisentary & Barrett, 2015), which the participants viewed as a necessary component of PI.

In contrast to autocratic leadership, the organization used coaching, as evident in interviews and documents as a leadership style to implement PI. Coaching is a leadership style aimed at developing positive, supportive relationships between leaders and team members and positive working relations amongst team members (Duff, 2013). The organization uses Black Belts and Green Belts to mentor leaders. Leaders mentor managers to achieve organizational goals and the PI action plans. P4 indicated that the direct interaction with leaders and PI teams is a coaching technique to motivate and support members in achieving tasks and effective use of resources. P4 stated, "One of the leadership styles, I would say, if I can say, coaching is the primary style that's out there we tend to want to promote." Coaching enhances the direct interaction with a team and help members make coordinated and task appropriate use of their collective resources for goal achievement (Duff, 2016).

Leadership support and buy in. The commitment of leaders and buy in are factors for achieving continuous PI (Baia, 2015). Participants stressed the importance of leadership support and buy in to creating an environment for successful PI. Respondents supplied documents such as funding documents, meeting minutes, and policy letters to substantiate leadership support and buy in. Leaders allocated resources and encouraged

innovative ideas to demonstrate buy in, strong commitment, and support for PI. The remarks of P4 are examples of the participants' perspective of leadership buy in.

> Well I am going to say, first of all, buy in, buy in from all leadership is critical for process improvement. If the leadership team hasn't bought in and committed, then the worker bees are not going to follow suit, or they are going to notice that it's not really a value to the company, or to the unit. (Participant 4)

Maheshwari and Vohra (2015) found that leadership commitment and buy in increase employees' commitment, which affect organizational performance. Strong support and buy in from top management and the allocation of financial resources are factors to eliminate resistance to change (Prashar, 2014).

Effective communication. According to participants, leaders who set a climate of effective communication and are open to the ideas of workers enhance workers' empowerment and the implementation of PI. The six participants viewed that effective communication was essential for employees to express alternative views, provide individual perspectives, and convey the value of others' knowledge and ideas. The minutes of daily meetings, communication policies, and a reward program demonstrated the use of effective communication to enhance PI. P3 elaborated on the importance of effective communication and empowerment.

> I think sometimes that's why we go bottoms up rather than top down communication for process improvement because many times those employees who touch and feel the process every day they feel the pain of what it takes to produce the vision or goals. (Participant 3)

Effective communication is necessary to communicate the PI changes, enhance the attitudes and behaviors of workers toward PI, and establish teambuilding.

Theme 2: Focus on Continuous Process Improvement

The second major theme that emerged from data in interview questions 1, 2, 3, 4, and 7 and documents was a focus on *continuous process improvement*. Six (100%) participants viewed CPI as a key factor in implementing PI. A focus on CPI methods, organizational climate, and implementation assessment were subthemes in Theme 2, see Table 4.

Table 4

Factors of continuous process improvement

# Minor themes	Participant responses	% of participant responses
CPI methods	93	53
Climate of improvement	17	10
Implementation assessment	36	20

CPI methods. Participants indicated that a critical factor in PI is the leaders' ability to establish methods for CPI. Even though the organization used different CPI methods, including Lean, the theory of constraints, ISO 9000, and quality checks, Lean was the predominate method for CPI. Six (100%) participants viewed Lean as a method to identify the root cause of constraints and eliminate waste. The evidence of organizational-wide Lean implementation determined from interviews, Lean action plan documents, and inspection reports, was the affirmation of leaders' commitment to the Lean method for CPI. Additionally, all units in the organization used the Air Force Smart Operation in the 21st Century document as the method for CPI. P2 highlighted the importance of a PI method for continuous improvement. P2 stated, "Basically, ah,

continuous process improvement, we have all different types of methods and strategies and you just have to kindah see which ones fit the situation that you have." All participants stressed that leaders should choose the appropriate method for PI. Radosevic, Pasula, Berber, Nebojsa, and Nerandzic (2013) argued that leaders should give precedence to the method and the process of PI rather than functions and activities of the company.

Climate of improvement. The use of PI methods is not an assurance of successful CPI. Six out of six participants stressed the importance of leadership and organizational climate as factors of continuous improvement. Participants stressed that an organizational climate of excellence, doing the job right the first time, and looking for best practices contribute to CPI. Organizational documents of Lean maturity, mandated goals for conducting Lean events, and monthly reviews of Lean metrics were evidence of leaders' everyday effort to improve processes. P5 voiced the views of all participants concerning a climate of CPI. According to P5, "First of all, you have to be committed to continuous improvement. Leaders and workers must value a culture of continuous improvement." All participates indicated that leaders must establish an organizational climate for continuous improvement. Process improvement leaders must integrate factors of culture, leadership, and communication into the DMAIC process to achieve continuous PI (Lertwattanapongcha & Swierczek, 2014).

Focus on implementation assessment. Six (100%) participants stressed that assessing the implementation of PI is necessary to enhance CPI. The organization used PI action plans as an implementation process to identify and track areas of improvement.

Additionally, participants indicated that the use of metrics to assess the effectiveness of the action plans and develop additional changes were necessary to ensure implementation success and to achieve the return on investment. Comprehensive action plan reports, PI monthly briefings, and PI review panels indicated a leadership focus on PI assessment. P5 highlighted the importance of focusing on an implementation process.

> I have seen process improvement projects fail due to a lack of focus on the implementation process. We expend lots of resources, manpower, and dollars on process improvement events. Without an implementation process, we do not get our return on investment. (Participant 5)

According to participants, leaders must conduct PI events, establish action plans, and assess PI changes. A framework for business process implementation, which is an execution template, is necessary for leaders to execute the PI changes (Sikdar & Payyazhi, 2014).

Theme 3: Focus on Culture

The third major theme that emerged from data in interview questions 2, 4, 6, and 7 and documents was a focus on *organizational culture*. Kashani, Sheibat Al-Hamdi, and Keikha (2015) found that organizational culture is a necessary infrastructure factor in the implementation of Six Sigma projects. Six (100%) participants viewed organizational culture as a critical factor in implementing PI. Elements of organizational culture, workforce value, mission value, ownership value, and a proactive attitude affect the success or failure in achieving the desired outcome of PI, see Table 5.

Table 5

Factors of culture

# Minor themes	Participant responses	% of participant responses
Workforce value	34	20
Mission value	50	30
Ownership value	49	28
Proactive attitude	35	21

Workforce value. Organizational culture affects firms' performance (Kotter & Heskett, 1992; Murphy, Cooke, & Lopez, 2013). According to participants, employees are the organization's most valuable resource. Six (100%) respondents shared that workforce value is a motivation for workers to embrace efforts of PI. Employees who felt valued and shared values were passionate and took pride in achieving the mission. Climate assessment reports indicated that workers viewed themselves as important and valuable contributors to mission success. The organization's Wingman program, a formal written document to foster caring and teamwork, substantiated that leaders conveyed pride and value to employees for their contribution to the mission. P6 remarked that a climate of caring and teamwork is necessary to foster group unity and cohesiveness toward achieving mission goals and PI. James and Bakuwa (2013) argued that organizational cultures that value individuals contribute to sustained performance. Organizational culture affects performance and is imperative to the implementation of quality initiatives (Pakdil & Leonard, 2015).

Mission value. Participants voiced that a culture of mission value is essential for implementing PI. Organizational pamphlets indicated that the organization stresses the

importance of establishing an Air Force culture of integrity first, service before self, and excellence. Moreover, organizational assessment reports identified the unit as having a culture of dedication to achieving goals and objectives to achieve mission success. P5 expressed the result of mission value is a normalization of an attitude of CPI. According to P5, "People are motivated when the mission becomes their mission. They work toward common goals and develop a sense of unity. Everyone understands the goals and objectives, and they accept the challenge." James and Bakuwa (2013) argued that an organizational culture with a focus on mission value improves performance.

Ownership value. A culture of process ownership existed in the organization. Six participants (100%) stressed the importance of allowing workers to participate in the decision-making process to improve organizational performance. The organization has a leadership out-and-about program to create an ownership climate for workers to become part of the process improvement strategies. Participants visit the worksite to seek workers' opinion concerning organizational constraints and empower workers to implement solutions to problems that are goal impediments. Additionally, the recognition of process owners in the innovative idea documents and meeting minutes indicated leaders' commitment to allowing workers to own and manage processes and programs. P4 voiced that a climate of ownership entails empowering workers to make PI changes, embracing workers' ideas, and listening to workers.

> I have noticed that when people are allowed to take ownership of the process, their performance improves. They are more apt to come up with innovative ideas,

> unique ways to fix equipment, solve problems, and share their knowledge with the workforce. (Participant 4)

An organizational culture of process ownership fosters workforce empowerment and enhances the workers' commitment to organizational improvements (Maheshwari & Vohra, 2015).

Proactive attitude. A proactive, positive attitude results in cooperation, team building, and acceptance of PI changes (Bergeron, Schroeder, & Martinez, 2014). All participants stressed that a culture of proactive attitude was paramount in implementing PI. Participants indicated that workers who view change as a motivation to improve productivity are less resistance to change. Leaders that establish an environment for members to take the initiative, solve problems, and work together improve performance (Murphy et al., 2013). According to the organizational climate assessment report, employees welcome changes and take actions to improve productivity. Characteristics of a proactive attitude, determined by the climate assessment questions, are workers readily accept tasks, support organizational change, and take the initiative to improve productivity. P2 highlighted the importance of a proactive attitude. P2 stated, "They also must have that positive attitude, an attitude of always wanting to make things better, even if it's running a receipt and just shaving off five minutes of that processing time." Individuals with proactive behaviors are motivated and task oriented, which improves performance (Bergeron et al., 2014).

Theme 4: Focus on Change

The fourth major theme that emerged from data in interview questions 1, 2, 3, 4, 5, 6, and 7 and documents was a focus on *organizational change*. Customer satisfaction, cost reduction, and competitive advantages are reasons to implement organizational changes for PI (Lameijer, Veen, Does, & de Mast, 2016). Change management is an integral part of the improvement phase of PI. Subthemes in change management were a change plan, change implementation, and change assessment, see Table 6. Leaders viewed these factors as critical elements in the change process to enhance PI.

Table 6

Factors of change management

# Minor themes	Participant responses	% of participant responses
Change plan	30	27
Change implementation	37	34
Change assessment	23	21
Managing change resistance	20	18

Change plan. Kash et al. (2014) argued that organizations require a change management strategy. Six (100%) participants viewed change management as necessary for successful PI. Longenecker, Longenecker, and Gering (2014) noted that leaders fail to achieve successful implementation of PI because of an inadequately planned and executed change process. Participants voiced that organizations fail to implement PI successfully because leaders do not use a systematic and integrated plan for deploying PI changes. The organization publishes a change plan for each PI event. The change method, change action, office of responsibility, and the estimated time of change

completion are key elements in the change plan. Additionally, the organization uses an Air Force document, Air Force Smart Operation for the 21st Century, and the PI event action plan as change plans for improvement. Participants expressed the necessity of a change plan. For example, P3 stressed that leaders must create a plan and an environment for successful organizational change. According to P3, "We are living in a changing society. We are living in a world where the footprint, ah process improvement and rapid change, is rapid change. You must have a change plan to be successful." Leaders must identify the change, implement the action plan, and track results. Kash et al. (2014) argued that organizations require a change management strategy.

Change implementation. Barriers exist in implementing a plan for PI. Six (100%) leaders suggested that there is a need for developing an implementation plan to manage the change process. According to participants, leaders must champion the changes, communicate the reason for changes, and monitor the implementation process to mitigate the resistance to change. Participants remarked that an implementation strategy, for PI changes, enhances the acceptance of the change. The organization creates a change action plan for each Lean event to enhance implementation success. Documents of change review meetings, action plans, and workforce briefings indicated that leaders focused on change implementation. The documents were means to communicate the change to the workforce, track the status of changes, and gain support for implementing the change. P4 provided an example of the leaders' perspective of change implementation. P4 said, "In this effort of improvement, you need to have a method to implement process improvement, manage the change process, and measure performance.

The process has to be communicated throughout the stakeholders." Organizations require an implementation strategy to achieve successful change (Sikdar & Payyazhi, 2014).

Change assessment. During the implementation of PI, organizational leaders had a focus on change assessment. Six (100%) participants remarked that the result of the change is the vital factor in the change process. Organizational tools and documents to assess the effect of PI changes were production metrics, follow up meetings, inspections, and feedback from customers. P4 stressed the value of assessing the effect of PI changes. P4 remarked, "We hold monthly meetings to track items and monitor the status. We also use metrics to gage the expected performance of the change that we made." Librelato et al. (2014) argued that leaders must have a process to assess PI changes. Metrics are organizational tools to assess PI changes to improve competitiveness (Perera & Perera, 2013).

Managing change resistance. Participants identified employees' resistance to change as an inhibitor to change. Leaders viewed a negative attitude toward change as a barrier to change implementation. Leaders must take action to mitigate the resistance to change and gain support in implementing PI. Documents of the change plans, meetings to address workers' feedback to change, and open communication indicated a leadership focus to manage the resistance to change. P6 highlighted the effect of the resistance to change. According to P6, "Workers can be resistance to change. Resistance to change can hinder the implementation of process improvement. You have to keep employees informed, make them part of the change process, and get their buy to implement process improvement changes." Managing change involves managing resistance to change

(Hanif et al., 2014). Consequently, leaders can reduce resistance to change and improve the successful implementation of PI (Galli & Handley, 2014).

T**heme 5: Focus on Performance**

The fifth major theme that emerged from data collection was a focus on *performance management*. The development of theme 5 was from interview questions 1, 2, 4, and 7, company documents, and archival records. Six (100%) participants used performance management in their organization for PI. Performance management is a vital component of performance improvements (Lutwama, Roos, & Dolamo, 2013). Participants indicated that performance management was a driver of PI strategies. The dimensions of performance management were performance standards, performance assessment, resource performance, process performance, and performance systems and tools, see Table 7.

Table 7

Factors performance management

# Minor themes	Participant responses	% of participant responses
Performance standards	34	21
Performance assessment	29	18
Resource performance	17	10
Process performance	23	14
Performance systems	61	37

Performance standards. A process to manage and measure performance is vital for organizational efficiency and PI (Sanders Jones & Linderman, 2014). Leaders use performance management to focus on achieving mission objectives. All participants

agreed that performance management begins with leaders identifying key performance indicators to develop performance standards. The organization used a strategic approach to establish performance standards. Leaders aligned the mission, goals, and objectives to PI and established metrics as the basis for performance standards, as indicated in documents and archival records. Additionally, the organization used a balanced approach in establishing key indicators of performance standards. The participants indicated that focusing on the key performance standards and using PI to eliminate performance constraints results in improved aircraft delivery time, aircraft availability, customer satisfaction, and reduced costs. Organizational metrics, document reports, and PI events were indicators that leaders established performance standards for core mission functions. Leaders used metric of aircraft production, supply chain, programs, resources, and processes to improve performance. P5 stressed the use of performance management to set strategic direction to achieve mission performance. P5 added, "We use a balanced scorecard to access mission performance. Our goals and objectives are tied to metric of key performance indicators. Leaders get together and conduct monthly performance assessment meetings." Perera and Perera (2013) argued that organizations that use metrics improve competitiveness. Performance management entails using information to manage the organization more effectively and efficiently, to promote continuous improvement, and to establish a learning environment (Harvey, Jas, & Walshe, 2015).

Performance assessment. Performance standards are means to set targeted objectives; however, leaders must establish methods to assess performance in achieving those objectives. Participants conveyed that performance assessment is a factor in the

continuous improvement in achieving customer satisfaction. The organization used metrics, quality inspections, and customer feedback to access performance. The daily use of metrics, to determine mission capability, supply chain performance, and monthly meetings to access program performance, was the primary means to access performance. The measurement of performance is central to leaders' decision-making and judgment to meet targeted objectives for continuous improvement (Oyewobi, Windapo, & Rotimi, 2015). Leaders used performance assessment to target areas for PI, to improve supply chain management, and to meet customer requirements, as indicated in organizational performance reports. P2 expressed the views of all participants that the use of performance management enhances continuous improvement. P2 said, "Moreover, you have to have a process to manage performance. You have to have means such as metrics to gauge performance. I use metrics as an analysis technique, viewing my metrics on a daily, weekly, and monthly basis." Ljungholm (2015) argued that performance management is a means of gathering data from the entire value chain to assess performance. Metrics are integral tools for leaders to determine, measure, and assess key performance indicators (Grigoroudis et al., 2012).

Resource performance. Resource performance is a factor in performance management (Chou et al., 2012). All participants voiced that the performance of people, parts, and technology are contributing factors of continuous improvement and superior performance. Data base reports of the supply chain, aircraft status, maintenance systems, and training were key documents that leaders used to assess resources and to improve performance. Participants agreed that leaders must constantly evaluate job performance,

skill levels, information systems up time, mission data, and financial reports to ensure resources are available for PI. For example, P1 expressed the views of all participants.

> Some of the key ingredients in achieving our objectives are we look at what it takes to make the aircraft airworthy and what it takes to maintain the mission capability. We focus on employees' skill levels and training, availability of parts, and supply information systems to meet production demand and customer requirements. (Participant 1)

Grosaru (2014) argued that leaders use resource management in functions of finance, information technology, logistics, and human resource. Resource management is a tool for leaders to achieve their goals of maximizing efficiency and effectiveness (Grosaru, 2014).

Process performance. According to participants, selecting an appropriate method to improve processes is an element of performance management. Organizations integrate different methods of PI, such as Lean with Six Sigma (Thomas, Ringwald, Parfitt, Davies, & John, 2014) and Six Sigma with ISO 9001 (Marques, Requeijo, Saraiva, & Frazao-Guerreiro, 2013), for successful deployment of PI. Participants used a combination of methods for PI, Lean, quality, ISO 9000, inspections, standardized policies, and procedures, to manage and improve processes. Additionally, leaders used a combined process approach to increase throughput performance, eliminate waste, and increase production. The organization used different combinations of processes to improve different core mission functions, as evident in Lean action plans, inspection reports, and policy letters. Even though, Lean was evident in all units; however,

documents indicated that some units incorporated quality inspection with Lean and other units incorporated standardized engineering change management procedures with Lean. The response of P2 was indicative of the organization's use of a combined process approach to improve performance.

> We try to determine the root cause, and then we start peeling the onion back, and start using analysis techniques to hone in on the problem, and then from there, we may do or decide to do a rapid improvement event. (Participant 2)

The determining factor for integrating Lean with other improvement methods was core mission functions. Leaders who use a holistic approach to PI improve the implementation success of PI (Talib et al., 2013).

Performance systems. Performance systems are key elements in performance management. Performance information systems are systems for leaders to link performance objectives, goals, and financial objectives with the organization's strategies for improvement (Grosaru, 2014). The organization uses performance systems to assess production performance and to identify areas for conducting PI events. The participants used supply chain resource planning systems to assess resource demand, to allocate resources, to meet customers' demand, to assess mission performance, and to maintain lean inventories. Additionally, participants mentioned that they used maintenance information systems to track the aircraft mission-capability status, aircraft availability to warfighters, maintenance job performance, and aircraft repairs. The organization has contract performance assessment reporting systems to manage contract expenditures and contractors' performance. Moreover, the data-driven systems were sources of

information for leaders to determine work priorities, procurement of parts, equipment requisition, inventory management, and contract management. The remark of P3 is indicative of all participants' views on the importance of performance systems. P3 said, "I need to keep the aircraft flying. Information technology systems become very important. And, without a system to measure parts and dollars, you wouldn't know what direction you're going in until you hit ICU." All participants used the information, from the information systems, to make decisions on allocating resources, selecting PI events, improving aircraft productions, and increasing aircraft mission capability. Information systems and technology are important elements for the competitiveness of firms (Laosirihongthong et al., 2014).

T**heme 6: Focus on Strategic Management**

The sixth major theme was a focus on *strategic management*. The theme emerged from responses to questions 1, 2, 3, 4, and 7, documents, and archival records. Six (100%) participants responded that strategic management was a key factor in implementing PI. Participants identified factors of strategic management to improve performance as strategic planning, alignment, and deployment, see Table 8.

Table 8

Factors of strategic management

# Minor themes	Participant responses	% of participant responses
Strategic planning	60	59
Strategic alignment	25	25
Strategic deployment	17	16

Strategic planning. Organizations must expand their business planning approach, link PI initiatives to the strategic vision, and develop short-term and long-term business goals (Ayoup, Omar, & Abdul Rahman, 2016). According to the participants, the organization has a formal strategic planning process. The main aspects of the organization's strategic planning documents are the vision, mission, goals, and objectives. P2 voiced the importance of strategic planning in PI. According to P2, "Strategic planning is a key part of our success. Actually, I deal with strategic planning and tactical planning. My strategic planning, as far as process improvement is concerned, is done on a regular basis to meet requirements." Organizational leaders focused on the strategic planning documents to set the future direction of the organization, establish priorities, and to improve performance. Hu, Kapucu, and O'Byrne (2014) argued that the use of strategic planning is essential for organizations to identify stakeholders' needs and concerns, review organizational missions, clarify organizational mandates, analyze internal weaknesses and strengths, and identify external challenges and opportunities.

Strategic alignment. Strategic alignment is an essential element in business process reengineering for leaders to achieve the corporate strategy and improve business performance (Skidar & Payyazhi, 2014). Participants viewed strategic alignment as an aspect of strategic planning. The purpose of strategic alignment, among the various departments and functions, was to focus the organization as a complete system to meet warfighters' aircraft requirements. The organization's Lean maturity document was a strategic alignment of core functions, required Kaizen events, rapid improvement events, and action plans for PI events. Leaders used the Lean document to manage continuous

process improvement. For example, P5 indicated that units, within the organization, link the goals and objectives to PI to meet aircraft production requirements. P5 said, "You must take a strategic approach to accomplish the mission. Strategic alignment is critical for implementing process improvement." Participants stressed the importance of linking the strategic plan document to the different core mission functions, such as maintenance production, supply chain, and procurement. Chen, Delmas, and Lieberman (2015) argued that businesses create strategies, align goals, and resources to improve performance.

Strategic deployment. Manoharan, Melitski, and Bromberg (2015) argued that strategic planning, deployment, and process reassessment are steps in the strategic planning process. Participants agreed that strategic deployment, an element of strategic management, was a process to ensure that units, within the organization, executed the strategic alignment of PI. According to the participants and substantiated in the organizational structure document, the organization has an office for developing the strategic plan, accomplishing strategic linkages with PI, and deploying PI changes. To communicate PI changes and the strategic plan, the units use briefing documents and briefers, hold meetings to ensure deployment, and conduct reviews to assess the implementation of PI changes. P6 expounded the importance of strategic plan deployments. P6 stated, "Strategic plan deployment is the key to improvement. We make sure that everyone is aware of the strategic plan. We deploy the plan organizational wide, brief everyone on the plan, and establish goals and objectives." All participants agreed that performance improves when workers, at all levels in the organization, and stakeholders have knowledge of the mission, goals, objective, and take actions to meet

performance objectives. Communication is an element in strategic deployment, which leaders use to disseminate PI changes and reduce resistance to change (Schell & Kuntz, 2013). Leader use strategic management, a long-term process, to align the mission, vision, goals, and objectives of an organization to improve performance (Sa, 2013).

Theme 7: Focus on Resources

The seventh major theme that emerged from interview questions 1, 2, 5, and 7, documents, and archival records was a focus on *resources*. Leaders use organizational resources as a differentiation strategy to increase organizational capital (Laosirihongthong et al., 2014). Six (100%) participants viewed resource management as a key element in implementing process improvement. The minor themes of resource management are human capital, equipment and parts, and funding, see Table 9.

Table 9

Factors of resource management

# Minor themes	Participant responses	% of participant responses
Human Capital	70	60
Equipment and parts	30	26
Funding	16	14

Human Capital. An organization's greatest asset is human capital (James & Bakuwa, 2013). Participants indicated that manpower, training, and knowledge management are prerequisites for PI. Intellectual capital significantly influences organizational performance (Fallahi & Baharestan, 2014). All participants noted that selecting the workforce, training the workforce, and selecting the PI team members were factors in improving organizational performance. The abilities of leaders to fill vacant

positions, acquire appropriate skill levels, and assemble product integration teams contribute to the success of PI. Additionally, training, as an organizational resource, is another factor of CPI. Participants stressed the importance of employee training, in the use of PI tools, for identifying the root cause of problems, implementing solutions to problems, measuring performance, and controlling processes. The application of PI tools is a necessity for workers to identify and improve equipment availability, repairs, and aircraft maintenance (Zeng et al., 2013). The organization uses value stream mapping, takt time, 5 whys, and the A3 process as tools for CPI, as evident from interviews and documents. A lack of PI training inhibits employees' ability to identify wastes, bottlenecks, and changes, which is necessary to improve performance. P5 expressed the views of all participants on the value of human capital. According to P5, "Leaders must create strategies for success. First and foremost, people are the most valuable resource. To ensure benchmark performance, you need the right people, training, process, technology, equipment, and resources to get the desired improvement." Leaders must use human resource management and knowledge management to improve organizational performance, profitability, and innovation (Fallahi & Baharestan, 2014).

Knowledge management is an element of human capital (James & Bakuwa, 2013). Participants indicated that the organization has systems of knowledge management to track PI events, skill level training, and specialty training. Leaders use the systems to create, store, organize, retrieve, and distribute knowledge to improve employees' performance. All participants agreed that the information systems were essential for knowledge sharing, which is a means to communicate PI changes. The

organization uses policy letters, memorandum of agreements, and regulations as methods for knowledge management. Leaders use these methods to reward innovative ideas, ensure knowledge sharing, and facilitate external problem solving with suppliers and customers. P1 captured the knowledge management views of all participants.

> We monitor our workforce skill level to make sure we can perform the job on time with minimum errors. Moreover, we train our workforce in Lean, process improvement. We want to create an environment of continuous improvement and training is a key factor in achieving our objective. (Participant 1)

Participants noted that knowledge management is an essential aspect of PI. Knowledge, expertise, and information systems are organizational resources for performance improvement (Manville et al., 2012).

Equipment and parts. All participants mentioned that the organization invests in equipment, parts, and technology to enhance the successful implementation of PI. Moreover, leaders used the information in maintenance documents, supply chain documents, and financial document to manage resources across the value chain from resource requisition to aircraft repair. Participant 4, expressing the views of Participants 1, 3, and 5, voiced that resource capability is a long-term strategy for leaders to improve processes and performance.

> Our commanders normally take a strategic look at resource capability, ah, and we look at what it takes to execute the mission. We make sure that all the resources are available to ensure that we can repair aircrafts and execute the mission. (Participant 4)

All participants agreed that the availability of equipment and parts affect production and PI. Resource allocations, especially human capital, equipment, hardware, and software affect the implementation of PI (Kashani et al., 2015).

Funding. Participants viewed funding as a constraint in PI. Dark et al. (2017) argued that policy and funding work in concert with organizational processes to improve systems performance and outcomes. The organization has funding shortages resulting from appropriated funding levels. Funding documents indicated funding shortfalls because funding for the organization was at the 85% level of budget requirements. Participants agreed that limited funding and a shrinking budget affect the origination's ability to purchase equipment, parts, and hire people to fill vacant positions to enhance PI. Consequently, PI is an important strategy in the organization to reduce the impact of funding shortages. For example, P5 voiced the effect of funding and the use of PI to minimize the impact of funding shortages.

> We are looking at how strong is our throughput, so we could see how we are meeting our budget target. We want to drive down the cost of doing business. We constantly look at our budget and change processes to drive down the cost of doing business. (Participant 5)

Participants stressed that organizational funding and leadership are critical factors in PI. Funding affects an organization's ability to improve performance and deliver services (Dark et al., 2017).

How findings relate to the body of knowledge

A close link exists between the larger body of literature and research findings on the strategies that logistics leaders use to implement PI in the military aviation industry. Other researchers, Gurumurthy et al. (2013) and Laureani et al. (2013), identified CSFs for successful implementation of PI, which corroborates the themes identified in this study. The successful implementation of PI depends on leaders' awareness of CSFs and the integration of critical factors into PI (Sharma & Chetiya, 2012). Additionally, the findings are the views of participants that leaders must use a holistic approach for PI. Talib et al. (2013) concluded that leaders who use a holistic approach to PI enhance the implementation of quality improvement programs and maximum the returns on investment. A review of literature and themes is a means to provide a deeper understanding of how findings relate to the body of knowledge.

The literature on the role of leadership and strategic alignment. There is a close link between the literature and Theme 1, focus on *leadership*. Leadership is a critical factor for implementing PI. The findings of the study indicated that the role of leadership and strategic alignment, leadership style, and leadership support and buy in were essential elements for successful implementation. Participants agreed that organizational leadership is the critical factor in determining organizational success. The role of leaders is the critical factor in determining organizational success, performance, and efficiency through strategic choices (Ali & Ivanov, 2015). Mauri and Romero (2013) argued that the role of leadership is an enabler in creating organizational values and culture, which is essential to the success of the organization. Leaders create the strategic

direction of the organization to include the organizational vision, goals, values, culture, and performance assessment (Sa, 2013).

Participants had a focus on strategic alignment to achieve the organizational vision, goals, and objectives. Gupta et al. (2013) noted cross-functional teams, alignment of individual goals with company goals, and innovation were factors in motivating workers in implementing PI. In a multiple case study research, Laureani et al. (2013) found that CSFs of PI implementation are leaders' ability to link Lean Six Sigma to business strategy, leadership commitment, cultural change, and leadership styles. Organizational leaders should be strategic planners who develop the course for attaining organizational goals (Carter & Greer, 2013).

The literature on leadership style. According to participants, leadership style affects the successful implementation of PI. An autocratic leadership style hinders PI, while a participatory leadership style and coaching are more conducive to successful PI. According to Hayyat Malik (2012), leadership styles affect employees' motivation. Goodridge, Westhorp, Rotter, Dobson, and Bath (2015) recognized that leadership style is a critical factor in the successful implementation of PI. Carter et al. (2013) argued that leaders use various leadership styles to influence and motivate workers to achieve organizational goals. However, Pradhan and Pradhan (2015) argued that the transformational leadership of motivating, creating a vision, and influencing the attitudes of followers is the essential element for PI (Pradhan & Pradhan, 2015). Leadership style affects employees' attitudes and behaviors (Mulki, Caemmerer, & Heggde, 2015) and the

extent to which employees engage in achieving performance objectives (Popli & Rizvi, 2015).

Mehmood et al. (2014) found a significant association between organizational performance, continuous improvement, and employee involvement, which is a form of transformational leadership. A focus of transformational leaders is transforming followers' values and inspiring followers to pursue a collective vision of the future, which is a factor in implementing PI (Effelsberg et al., 2014). Participants indicated that successful PI occurs when leaders allow employees to participate in the decision-making process, convey a sense of ownership and openness, encourage innovation, and build an environment of teamwork. Transformational leadership is a factor in enhancing employees' self-efficacy that results in the motivation of employees' to implement the PI changes (Chou, 2014). Chou (2014) found a direct positive relationship between transformational leadership and behavioral support for change. Workers' motivation and empowerment are vital parts of reaching the success and prosperity of business and organizational performance (Khuong & Hoang, 2015).

Participants used coaching as a leadership tactic to implement PI. Duff (2016) identified team coaching, executive coaching, and individual coaching as a leadership style to achieve personal and organizational goals. Duff (2016) argued that coaching affects team effectiveness. Empowering leaders use participative decision-making and coaching to enhance knowledge sharing in teams to improve performance (Ulhassan, Westerlund, Thor, Sandahl, & von Thiele Schwarz, 2014).

Literature on leadership support and buy in. Participants in this study articulated the importance of leadership support and buy in to achieve successful implementation of PI. A lack of top management support and employees' commitment are constraints on the successful implementation of PI (Prashar, 2014). Fening et al. (2013) found that leadership commitment, training in PI, customer-driven information, process control, improvement, and employee empowerment affect organizational performance. Process improvement fails because of a lack of top management support, buy in, and employees' commitment (Prashar, 2014). Leadership buy in, teamwork, and effective communication are the elements of leadership support and commitment that affect PI. Leadership buy in is a necessity for implementing PI (Sikdar & Payyazhi, 2013).

Sikdar and Payyazhi (2013) argued that the commitment of leadership plays an important role in providing a clear vision of the future. Sikdar and Payyazhi found that leaders who mobilize commitment, provide employees support to develop new competencies, and implement reward systems to sustain the new improvement efforts achieve the objectives of PI. Maheshwari and Vohra (2015) found that leadership commitment and buy in increase employees' commitment to change. An organizational climate of leadership support, employee commitment, open communication, and proactive change is critical for the implementation success of PI (Garcia et al., 2013). Sim and Chiang (2012), using a multiple case study, explored organizational factors that can enhance or impede successful lean implementation. Sim and Chiang found that a lack of leadership support, a lack of effective communication, and not valuing employees

are actions that result in employees' resistance to change. Inoue and Yamada (2013) found, using case study research, that critical factors for success in implementing TQM are commitment of the management, cooperative culture, and resource management. Sikdar and Payyazhi (2014), using a multiple case study, identified leadership commitment as a critical factor in transforming organizations. A lack of top management support and employees' commitment are constraints in the successful implementation of PI (Prashar, 2014).

Literature on participatory leadership. Participants highlighted the importance of a participatory leadership that allows participants to participate in the decision-making process. A participatory management style enhances PI (Brajer-Marczak, 2014). Leaders incorporate employees in the decision-making process to improve employees' creativity, innovation, and teamwork (Knapp, 2015). The organization used teamwork as a tactic to improve processes and performance. Knapp (2015) equated teamwork as an organizational commitment to goals and core values. Talib et al. (2013) argued that teamwork, pride in workmanship, participative management, and leadership support are strategies for leaders to remove constraints to PI (Talib et al., 2013). Ulhassan et al. (2014) found that teamwork positively relates to the successful implementation of PI. Characteristics of a participatory leadership style for building teamwork are a shared climate, clear team vision, high task orientation, high levels of participation safety, strong support for innovation, and high interaction frequency (Cheng, Bartram, Karimi, & Leggat, 2013). Leaders use teamwork to create an environment of togetherness, dedication to the mission, and to improve communication and coordination (Ulhassan et

al., 2014). According to Gutierrez et al. (2012), Six Sigma teamwork and process management had a positive effect on the development of absorptive capacity. Teamwork enhances the success of implementing PI through the organization's ability to discover and share knowledge (Gutierrez et al., 2012).

Literature on effective communication. According to participants, communication is a key aspect of the successful implementation of PI. Communication is a necessary tool for informing workers of PI changes along the value chain. The primary role of leaders is to communicate the strategic value, up and down the organizational hierarchy (Schell & Kuntz, 2013). Leaders' role during the PI change process is to eliminate ineffective communication during the change process (Schell & Kuntz, 2013). Ineffective communication results in an unawareness of the rationale for the change and the associated benefits, a lack of involvement during the design and execution of the new process, and a lack of support (Sikdar & Payyazhi, 2013). Zeng, Anh, and Matsui (2013) investigated the relationship between shop-floor communication, process management, and quality performance. Zeng found a positive effect of a shop-floor communication on the implementation of process management practices and the resultant quality performance. Moreover, different means of shop-floor communications had different effects on the implementation of process management practices to influence quality performance. According to McFadden et al. (2014), communication was a factor in the findings of a study to implement Six Sigma. McFadden et al. found that employees' knowledge acquisition, knowledge dissemination, responsiveness to customers, and learning outcomes, have a direct positive relationship with patient safety

learning. McFadden et al. (2014) concluded that robust communication enhances the successful implementation of PI. Gambetti and Giovanardi (2013) used a two-step qualitative methodological approach to view supply chain from a communication perspective. Gambetti and Giovanardi found that communication is a critical element in supply chain management. Leaders use communication to identity management, to build the supply chain image, and to enhance strategic and operational supply chain processes. Additionally, communication is a critical factor for creating the organizational culture, knowledge creation and dissemination, relationship development and maintenance, and the integration of activities along the supply chain. The result of effective communication is an improvement in fostering knowledge, management, and relationships to enhance competitive supply chain performance. Ineffective communication is a barrier to PI (Chang et al., 2014).

Literature on continuous process improvement and methods. Continuous process improvement is a key factor in implementing PI (Heavey et al., 2014), which corresponds to Theme 2, focus on *continuous improvement*. According to participants, viewing PI as a constant effort to improve performance affects the successful implementation of PI. The Participants' requirements for CPI were methods for PI improvement, an organizational climate of improvement, a process for implementation assessment, and organizational training.

The literature review was a means to corroborate the findings. Continuous improvement is a constantly focused approach to improving efficiency of a process (Ras & Visser, 2015). Leaders use incremental and sustained innovation to eliminate waste

and enhance quality (Ras & Visser, 2015). Participants noted that a critical factor in PI is the leaders' ability to establish methods for CPI. The methods of PI are integral factors in achieving CPI (Clark, Silvester, & Knowles, 2013; Ras & Visser, 2015). Lean manufacturing, theory of constraints, and Six Sigma are improvement models to achieve specific industry needs (Ras & Visser, 2015). Ras and Visser used a mixed method study to develop a continuous improvement model to improve mining operations in South Africa. Ras and Visser found that to achieve continuous improvement in the mining operation leaders must use an integrated model for continuous improvement. Elements of the continuous improvement model were a combination of steps in Six Sigma, theory of constraints, and lean manufacturing. Leaders must select or integrate PI models to achieve desired outcomes (Ras & Visser, 2015). Heavey et al. (2014) argued that a PI framework is necessary for continuous improvement. Leaders must consider the key components of continuous improvement and connect components to the value of customers to create an effective model for CPI (Heavey et al., 2014). The process of continuously defining and meeting customers' changing values is the goal of PI (Heavey et al., 2014). Heavey et al. (2014) used a case study design to identify factors of an effective model for CPI. Heavey et al. found that customer value focused on processes, leadership, strategic objective, improvement specialist, and methodology are factors of CPI. The successful implementation of PI is contingent on leaders selecting a model for PI (Heavey et al., 2014).

Literature on continuous process improvement and climate of improvement. The climate of an organization affects CPI (Brajer-Marczak, 2014; Clark et al., 2013).

Participants stressed that, to achieve lasting improvement, leaders must set a climate of CPI. Brajer-Marczak (2014) stressed that successful organizations implement continuous change in processes in response to constant changes occurring in the requirements of customers. A climate of continuous improvement occurs when an organization constantly searches for possibilities to improve daily operations (Brajer-Marczak, 2014). Additionally, the organization uses implementation processes and monitors the results of the problem-solving methodology (Ali et al., 2013).

Leaders who set a climate of improvement involve employees in the improvement initiatives (Ali et al., 2013; Brajer-Marczak, 2014). Consequently, continuous improvement of processes entails an organizational climate with emphasis on valuing employees for seeking the opportunities to introduce changes (Brajer-Marczak, 2014). Leadership's awareness of continuous improvement factors enhances a climate of continuous improvement (Ali et al., 2013; Baia, 2015). Ali et al. (2013) used a quantitative study to determine the factors that will affect the sustainability of continuous improvement capabilities in the manufacturing industries in Malaysia. Ali et al. found that the critical factors that affect the sustainability of continuous improvement capabilities are strategic focus, management of continuous improvement, learning, and knowledge sharing. The focus of leaders on strategic objectives creates a climate for CPI (Heavey et al., 2014). Moreover, leaders create a climate of process ownership with a focus on strategic alignment of organizational goals that cascade down to individuals in the workforce (Ali et al., 2013). Leaders' strategic focus is a motivator for individuals

and groups' acceptance of improvement changes to achieve organizational goals and to prioritize improvement activities (Heavey et al., 2014).

Participants stressed that employee commitment affect PI. An environment of employees' commitment to PI is a factor in CPI (Baia, 2015). Lam, O'Donnell, and Robertson (2015) used a quantitative study to investigate which influence tactics are the most effective in soliciting employee commitment to continuous improvement tasks. Lam et al. found that collaboration, consultation, ingratiation, inspirational appeals, and rational persuasion are significant and strong predictors of employee commitment to continuous improvement initiatives. Managers who use these tactics create a climate of commitment to continuous improvement (Lam et al., 2015).

A climate of organizational commitment to training and education is essential for leaders to create a climate of CPI (Kovach & Fredendall, 2013). Clark et al. (2013) argued that continuous improvement could only occur in an environment of employees' continuous engagement and knowledge of the principles that make up a Lean system. Assarlind and Aaboen (2014) used a case study design to explore inhibitors to implementing Lean Six Sigma. Assarlind and Aaboen found that a lack of knowledge of Lean Six Sigma is an inhibitor to successful implementation and continuous improvement. Knowledge management is a key element throughout the DMAIC and problem-solving processes of continuous improvement (McFadden et al., 2014).

Literature on continuous process improvement and implementation assessment. Participants viewed an implementation process for PI as an important factor in CPI. A process for implementing PI changes is a critical strategy for CPI (Ali et al.,

2013). Ali et al. (2013) argued that leaders must consider management support, training of continuous improvement concepts, and organizational change with a focus on customers' satisfaction in the implementation process. Implementation is a key element in the Lean, DMAIC process (Librelato et al., 2014). Karim and Arif-Uz-Zaman (2013) argued that not all Lean initiatives in manufacturing achieved the desired results. A lack of an effective implementation methodology is a reason for failure of Lean practices (Karim & Arif-Uz-Zaman, 2013). Karim and Arif-Uz-Zaman proposed an implementation methodology and used a case study design to validate the proposed methodology of implementing Lean strategies and performance evaluation metrics. Karim and Arif-Uz-Zaman argued that a performance measurement system is important to leaders in managing the implementation of PI and gathering information to make performance decisions. Additionally, in supply chain operations, the use of metrics is essential because leaders must measure the demand and distribution requirements. Karim and Arif-Uz-Zaman used a continuous performance metric method for assessment of CPI. The factors of the mathematical equational model were efficiency, productivity, and effectiveness. Karim and Arif-Uz-Zaman found that the model was a proven method for continuous evaluation of Lean performance in manufacturing. Organizations require an implementation strategy to achieve successful change (Sikdar & Payyazhi, 2014).

Participants highlighted the use of metrics to assess continuous PI. Organizations use key performance indicators to create a balanced scorecard for continuous PI (Grigoroudis et al., 2012). Fadly Habidin and Mohd Yusof (2013) used a quantitative approach to explore the CSFs for Lean Six Sigma in the Malaysian automotive industry.

The two critical items for implementing Lean Six Sigma were a focus on leadership and customers. However, Fadly Habidin and Mohd Yusof concluded that metrics were an important tool in CPI. Leaders used metrics to focus on strategic goals for improvement, comprehensive goal-setting processes, communication on goals, specification on quality goals, customer expectation on quality, and measurement on quality goals. Elbireer, Chasseur, and Jackson (2013) explored the use of Six Sigma to improve clinical laboratory support in Uganda. The PI team used metrics in the DMAIC process to evaluate and reduce errors. Additionally, the team used metrics to access the effect of Six Sigma and to maintain continuous improvement. Metrics are the core of process improvement methods. When using Six Sigma methodology, leaders use metrics for measurements and evaluations to quantify process outcomes, identify defects, and make adjustments to improve the processes (Sahay, 2015).

Literature on organizational culture and workforce value. There is a close link between the literature and Theme 3, focus on *organizational culture*. Participants viewed organizational culture as a critical strategy in implementing PI. Murphy et al. (2013) concluded that organizational culture affects firms' performance. According to participants, factors of organizational culture that affect the implementation of PI were workforce value, mission value, ownership value, and proactive attitudes to improve performance. James and Bakuwa (2013) argued that unique socio-cultural settings have a direct impact on leadership, employees' welfare, extended family systems, and corporate governance. Organizational cultures that value individuals, an aspect of social capital, contribute significantly towards corporate performance and sustainability (James &

Bakuwa, 2013). James and Bakuwa performed a quantitative study to test the relationships between variables of intellectual capital on profit, development, innovation, culture, and knowledge on intellectual capital. James and Bakuwa found that positive relations exist between the variables and intellectual capital. Intellectual capital is the main source of firms' profitability. Additionally, the socio-cultural setting improves corporate performance (James & Bakuwa, 2013). Organizational emphasis on human capital development improves corporate performance (James & Bakuwa, 2013).

Literature on organizational culture and mission value. An organizational culture with a focus on mission value improves performance (Babnik, Breznik, Dermol, & Nada, 2014; James & Bakuwa, 2013). Babnik et al. (2014) found that, in medium- and large-sized companies, the composition of mission statements, values, and culture, are strategic tools to motivate and guide employees' behavior. A value for mission culture results in a climate of responsibility, concern, and care for employees and stakeholders in achieving the mission (Babnik et al., 2014). Murphy et al. (2013) found that a constructive culture is a driver of firm performance. Leaders that create a climate of shared values enhance cooperation and coordination within the firm, which influences organizational performance. Murphy et al. used a quantitative study to examine the relationship between constructive cultures and firms' performance. Characteristics of a constructive culture are members take initiatives, solve problems, and work together. Additionally, the organization uses goals as a motivation factor for employees (Murphy et al., 2013). Murphy et al. found that constructive cultures increase the levels of

cooperation within organizational units, levels of coordination between those units, and unit-level performance.

Literature on organizational culture and ownership value. Participants stressed that a culture of process ownership is conducive for PI. Peng and Pierce (2015) concluded that organizations should focus on creating a culture of workforce ownership. Peng and Pierce (2015) found that a culture of psychological ownership has a positive relationship to job satisfaction. Leaders that create a culture of ownership allow workers to exercise control over work processes, which enhances the personal investment of workers in the organization (Maheshwari & Vohra, 2015). Haffar et al. (2014) used a quantitative study and found that an organization's emphasis on group culture and adhocracy culture is positively associated with the level of individual readiness for change. Characteristics of a group culture are teamwork, participatory environment, and empowerment, which are conducive to organizational change (Haffar et al., 2014). Organizational culture is an essential element in PI to achieve organizational change (Garcia et al., 2013).

Literature on organizational culture and proactive attitude. Participants voiced that a culture of proactive behavior is essential for the successful implementation of PI. A proactive, positive attitude exemplifies workforce confidence, cooperation, and team building, which affects workers' acceptance of the PI changes. Bergeron et al. (2014) performed a quantitative study and found that a proactive personality related positively to task behavior and organizational citizenship behavior. Individuals with proactive behaviors are motivated, conscious, and goal directed (Bergeron et al., 2014).

Moreover, the employees, having a long-term focus, take the initiative to respond to the environment, anticipate future opportunities, and develop plans to create new circumstances (Bergeron et al., 2014).

A construct of proactive organizational citizenship behavior was individuals that (a) provide constructive suggestions to improve the department, (b) coordinate with other faculty members before taking actions that might affect them, (c) act as peacemakers when other department members have disagreements, and (d) be willing to risk disapproval to express your beliefs (Bergeron et al., 2014). Individuals with proactive personalities showed increased frequency in task behavior to improve performance (Bergeron et al., 2014). Lysova Richardson, Khapova, and Jansen (2015) found that employees with proactive career behaviors and a focus on other-oriented work values are supportive of organizational change. Employees with passive career behavior and self-centered work values demonstrated lower levels of support to change initiative (Lysova et al., 2015).

Literature on organizational change and change plan. Participants viewed a focus on *change*, Theme 4, as a critical factor in the successful implementation of PI. According to participant, the key elements of change were a change plan, plan employment, and plan assessment. The DMAIC process is the organization's primary method for change. Pinedo-Cuenca et al. (2012) argued that the DMAIC process of Six Sigma is equivalent to Lewin's change model of unfreeze, move, and freeze. Isa and Usmen (2015) used the DMAIC framework method to reduce time delays and quality deficiencies, decrease construction costs, and improve cost estimates. Bhat et al. (2014)

used the DMAIC process to reduce the cycle time of patient registration. The DMAIC steps in process improvement are a change process to improve performance (Al-Zubi & Khamees, 2014).

Change methods are essential for successful organizational change (McGreevy, 2016; Pollack & Pollack, 2015). McGreevy (2016) argued that the change models of Lippitt et al. (1958) and Lewin (1951) are appropriate change models for healthcare organizations. Mehta et al. (2014) and Pollack and Pollack (2015) identified Kotter's (1995) eight step process as a model for change management. Pollack and Pollack used an action research, case study to explore the use of Kotter's eight-stage change plan. Pollack and Pollack found that Kotter's plan was an effective method to manage organizational change. The eight steps consist of the following actions:

(1) establishing a sense of urgency

(2) creating the guiding coalition

(3) developing a vision and strategy

(4) communicating the change vision

(5) empowering broad-based change

(6) generating short-term wins

(7) consolidating gains and producing more change

(8) anchoring new approaches in the culture

According to Daiker (2013), Lewin's three stages change model of unfreezing, changing, and refreezing is a model for change.

A plan for organizational change and change assessment is essential for organizations to improve performance and achieve a competitive advantage (Stirbu, 2015). Organizational leaders require a systematic change process for successful implementation of PI (Kovacs, 2015). Sikdar and Payyazhi (2014) argued that business process reengineering programs fail because leaders lack a change plan that aligns corporate changes with organizational strategies. Sikdar and Payyazhi used a case study to explore business process implementation. Sikdar and Payyazhi used the 8-S dimensions of the Higgins model to develop a process framework of managing organizational change. Sikdar and Payyazhi identified the three key phases of the change process as linking the value chain to strategy, designing the workflow, and executing the practices. Elements in the change plan, for successful implementation, were identifying the vision and commitment, selecting processes for redesign, communicating the change, documenting and analyzing the change, training users, and evaluating performance (Sikdar & Payyazhi, 2014).

Literature on organizational change and change implementation. Participants voiced that an employment plan enhances the successful implementation of PI. Barriers exist in implementing the PI plan. The implementation stage of the PI framework is an element in the change plan for improvement (Librelato et al., 2014). Librelato et al. (2014) identified the final step in the TOC thinking process model as developing an implementation plan to remove constraints. To achieve successful implementation of PI, leaders must develop an implementation plan (Wandersman, Alia, Cook, & Ramaswam, 2015). Participants indicated that effective communication is a factor in implementing

the change process. Leaders' role during the PI change process is to implement effective communication processes to mitigate resistance and gain support for the proposed change (Rosendahl et al., 2014; Schell & Kuntz, 2013). Rosendahl et al. (2014), using a case study design, explored corporate strategy for communication and information flow in executing a change in a network organization. Rosendahl et al. found that a top-down and bottom-up corporate strategy, for communication and information flow, was a critical factor in the organization's success in executing changes in the virtual organization. Moreover, effective communication is necessary for an environment of knowledge sharing, group orientated tasks, and collaboration between different types of working groups (Rosendahl et al., 2014). Additionally, communication was a process to anticipate, plan for constraints, inform, and train employees of organizational changes (Rosendahl et al., 2014).

Literature on change assessment. Participants stressed the value of determining the effect of PI changes through change assessment methods. The improve phase, in the DMAIC process of PI, is a means to assess the implementing of PI. The use of statistical tools and change management tools are key assessment methods for achieving results and maintaining continuous improvement (Andersson et al., 2014). Andersson et al. (2014) used the improve phase of the DMAIC process to assess implementation strategy in a telecom manufacturing company. Leaders used measurements in the improve phase to achieve continuous improvement in production (Andersson et al., 2014). Kash et al. (2014) found that change assessment was an element of successful PI implementation. Kash et al. argued that a holistic view of an

assessment plan includes a focus on coherent planning, employment strategy, and performance assessment. Kash et al. found that change assessment is a critical factor in the implementation process of change management. During healthcare changes, Kash et al. found that metrics are vital tools to assess changes in key operational activities. Leaders use metrics in key performance areas, such as supply chain management, wait times, throughput, capacity, claim denial, patients' transfers, and processes to determine the effect of implementing PI changes (Kash et al., 2014). Change assessment is a means for leaders to achieve continuous improvement through a process of monitoring activities implemented to support PI (Ali et al., 2013).

Literature on managing change resistance. Participant viewed resistance to change as a critical factor in the successful implementation of PI. Participants identified resistance to change, leadership commitment, and communication as barriers to implementing PI. Resistance to change is a barrier to the implementation of PI (Kokkranikal et al., 2013). Change management requires an employment plan to reduce resistance to change (Sikdar & Payyazhi, 2014). Lorden et al. (2014), using within case study, found that resistance to change is a factor in the failure of PI in healthcare. Managing the change process, leaders can reduce resistance to change and improve the successful deployment of PI (Galli & Handley, 2014). Sim and Chiang (2012) argued that organizational change failures occur based on employees' attitudes of resistance to change and a lack of trust. In a quantitative study, Hanif et al. (2014) concluded that workers who have positive attitudes toward business process reengineering show less resistance to change than workers who have negative attitudes. Organizational attitudes

of doubts about the effectiveness of PI outcomes, a lack of knowledge of PI, and prejudice thinking that PI is only applicable to large companies are barriers to successful implementation (Pinedo-Cuenca et al., 2012). Leadership initiatives to reduce resistance to change are strong commitment and support, participatory climate of workforce involvement, ownership and empowerment of the processes, and participation from team members (Pinedo-Cuenca et al., 2012).

Leaders face implementation challenges that reduce the impact of PI (Wandersman et al., 2015). Holten and Brenner (2015) used a quantitative study to identify processes that may contribute to followers' positive reactions to change. Holten and Brenner found a positive relation between transformational and transactional leadership styles and engagement of managers. Transformational leaders that exemplify idealized charisma, inspirational motivation, intellectual stimulation, and individual consideration lessen the resistance to change (Holten & Brenner, 2015). Leadership is an important factor in mitigating barriers to PI (Kokkranikal et al., 2013). The failure of PI methods occurs due to leaders' failures to understand the barriers to successful implementation (Dabestani et al, 2014).

Literature on performance management and performance standards. Participants used performance management to implement PI successfully. Tayade and Chavan (2013) argued that performance constraints are limiting factors that have an effect on the ability of leaders to achieve organizational goals (Tayade & Chavan, 2013). Organizations develop strategic direction and use PM as a strategy in the application of Lean methods for achieving the PI goals (Karim & Arif-Uz-Zaman, 2013). Forslund

(2012), using a multiple case study design, found that a lack of understanding of PM, inadequate capabilities for adapting performance metrics, and lagging information technology solutions are constraints that hinder logistics performance. Leaders use core business performance metrics, as a strategy to implement PI action plans, to improve customer satisfaction, production, delivery time, and reduce costs (Forslund, 2012). Sadat et al. (2013) argued that performance measures are indicators of companies' efficiency, performance, and costs (Sadat et al., 2013). However, leaders who strategically align performance measures with organizational objectives achieve market competitiveness (Pedro, Shamsuzzoha, Toscano, & Cunha, 2012).

Participants indicated that the organization aligns PI to strategic goals and use a balanced scorecard for PM. Grigoroudis et al. (2012) argued that a strategic approach to PM is a critical factor in implementing PI. Business leaders use the analysis and improve steps in PI to improve performance by meaningful measures of metrics (Cheng, 2013). Grigoroudis et al. (2012) used a regression-based approach to aggregate performance measures in healthcare. Leaders in healthcare used a PM strategy to create a balanced scorecard to assess internal business processes and external outcomes to improve strategic performance (Grigoroudis et al., 2012). Healthcare leaders aligned performance measures with strategic objectives to manage organizational performance to reduce cost, improve customer service, improve service quality, and improve medical service reliability (Grigoroudis et al., 2012).

According to participants, PM and standard measurements vary according to core functions. Hvidman and Andersen (2014) argued that performance indicators vary

according to core business functions and maturity levels of PM. Core functions and processes of organizations are elements to determine organizational PM (Hvidman & Andersen, 2014). However, elements of PM, in manufacturing businesses, are manufacturing performance, sales, managing and evaluating business strategies, monitoring operational efficiency, improvements, and productivity (Losonci & Demeter, 2013). Nawanir et al. (2013), using a quantitative design, found that a holistic approach to PM improves operational performance and business performance. Leaders use PM to achieve sustained customer satisfaction, service quality, innovation, speed, and price competitiveness (Das et al., 2011).

Literature on performance management and performance assessment. Ljungholm (2015) argued that performance management is a means of gathering data from the entire value chain to assess performance. Oyewobi, Windapo, and Rotimi (2015) argued that leaders use performance management systems to assess performance and make decisions on mission deployment, strategic direction, policies, strategies, and to receive feedback from stakeholders. Leaders integrate and employ performance information for decision-making (Ljungholm, 2015). Organizations create performance dashboards, key performance indicators to measure progress against predefined targets or benchmarks, to gain a competitive advantage (Ghazisaeidi et al., 2015).

Literature on strategic management. Participants indicated that strategic management is a critical factor in implementing PI. The organization aligns PI with organizational goals and objectives to accomplish the mission. Researchers (Nasution et al., 2016; Chen et al., 2015) agree that strategic management is a factor in gaining the

competitive advantage. Strategic management is a process that leaders use to connect the missions, goals, vision, and objectives of an organization to improve performance (Sa, 2013; Sadikoglu & Olcay, 2014). Sa (2013) argued that strategic management is a determining factor in leaders' long-term successes or failures in using PI to achieve the organizational vision and goals. The integration of PI initiatives with strategic management is a leadership strategy to achieve higher performance (Watts & Ormsby, 2015). Sadikoglu and Olcay (2014) used a quantitative study and found that strategic quality planning positively related to employee performance and social responsibility. The alignment of the competitive environment with business strategy and performance is an element of strategic management (Perera & Perera, 2013). Leaders focus on the competitive environment and determine the strategic direction of the company (Nasution et al., 2016). Ineffective strategic management is an organizational constraint; leaders use strategic management to assess organizational performance (Chen et al., 2015).

Participants indicated that the organization uses a holistic view of strategic management. Internal and external resources are components of strategic management. Manville et al. (2012) argued that a strategic approach to PI is the integration of resources through strategic management of human capital, knowledge management, technology, and systems integration (Manville et al., 2012). Businesses use a holistic view of strategic management to link PI to business strategy and customers, improve project selection and prioritization, manage training, education, and ensure leadership and organizational support (Manville et al., 2012). Laosirihongthong et al. (2014) performed a quantitative study to find the relationships between the organizational strategy,

resources, and innovation performance. Laosirihongthong et al. found a resource-based strategy of differentiation has a positive relationship with the development of internal and external resources. The development and integration of human capital resources of internal knowledge, creativity, and external relationships with suppliers and customers is a strategy for leaders to achieve innovative performance in manufacturing (Laosirihongthong et al., 2014).

Literature on resource management. Participants indicated that resource management is a key strategy in implementing PI. The minor themes of resource management were human capital, equipment and parts, and funding. Researchers, using qualitative (David Han-Min & Quang Linh, 2014) and quantitative (Fallahi & Baharestan, 2014) methods, corroborate the finding in this study. Human capital is an organization greatest asset (Channar et al., 2015; Sutton, 2015). Fallahi and Baharestan found human resource management influences the relationship between organizational performance and intellectual capital significantly. Workers' satisfaction and motivation are elements in achieving organizational goals (Fallahi & Baharestan, 2014), retention of employees, and reduced absenteeism (Kehoe & Wright, 2013). Human capital is the major source of capital for creating productivity and contributing to increased profits for corporations (James & Bakuwa, 2013).

Santos-Rodrigues, Faria, Cranfield, and Morais (2013) found associations between human capital and innovation. The human capital dimensions relevant to organizational innovativeness were knowledge formation, innovative attitudes, creativity, and incentive to innovativeness. Moreover, Bulut and Atakisi (2015) found that the

HRM variables of training, compensation, selection, and rewards have significant effects on organizational performance. Workers' training and knowledge, strategic application of rewards and recognition, recruitment of capable talents, and performance evaluation are prerequisites for continuous process improvement in supply chain operations (Bulut & Atakisi, 2015). McFadden et al. (2014) argued that knowledge is the key element throughout the DMAIC and problem-solving processes of PI. Adapting to changing circumstances and positions, leaders use knowledge management as a strategic leverage for gaining competitive advantages (Merat & Bo, 2013).

Participants viewed equipment and technology as critical elements in resource management for PI. Grosaru (2014) argued that the focus of defense resource management is the application of principles and methods used in performance management. Resources are factors in the PI process to improve production (Sikdar & Payyazhi, 2014; Zeng et al., 2013). The tools of PI are means to identify and improve equipment availability, repair, and maintenance (Zeng et al., 2013). Constraints in resource management hinder production (Grosaru, 2014). The long-term use of equipment, high production rates, and extended procurement times are factors of resource management (Grosaru, 2014). Leaders who focus on upgrading of inferior equipment, improving equipment performance, redesigning equipment, estimating the lifespan of equipment, and investing in equipment testing stations improve production (Zeng et al., 2013).

Participants voiced that information systems are vital resources for PI. Manoharan et al. (2015) argued that information systems are critical tools for strategic

performance measures. Leaders use information systems to link operational and strategic planning to achieve organizational goals (Manoharan et al., 2015). Huang and Handfield (2015), using a quantitative approach, found that companies with enterprise resource planning systems have significantly higher supply management ratings than non-enterprise resource planning users. Leaders use information systems in the DMAIC steps in PI (Prashar, 2014). The information technology performance systems are sources of information for organizational planning, budgeting, and production (Manoharan et al., 2015).

How findings relate to the conceptual framework

I used the theory of constraints (TOC) as the conceptual framework for this study. The concept of the TOC is companies can gain a competitive advantage by generating more money that result from increasing throughput, decreasing inventory, or reducing operating expenses (Sale & Sale, 2013). Chou et al. (2012) used the TOC in a case study to identify strategies to implement PI in the aerospace industry. Chou et al. found that the concepts of leadership, change management, knowledge management, strategic management, and performance management were factors in the TOC process. A focus on leadership, change and culture, performance management, and resources were five major themes in this study with relevance to the conceptual framework.

TOC and leadership. Theme 1, focus on leadership, was in alignment with the conceptual framework; leadership is an important factor in the TOC (Goldratt & Cox, 2004). According to Goldratt and Cox (2004), the central idea in the TOC is the leader's ability to identify and remove constraints to achieve organizational goals. The TOC is a

leadership method that leaders use to achieve organizational goals through performance improvement (Gupta et al., 2013). Participants viewed the role of leaders as the determining factor for the success or failure of PI. The role of leadership is essential in the TOC process to increase production throughput for achieving successful business improvement (Gupta et al., 2013). Leaders set the strategic direction of the organization and motivate the workforce to achieve goals and objectives (El Aziz & Fady, 2013). Participants identified leadership style, especially participatory and transformational leadership, as a means to enhance successful PI implementation. Gupta et al. (2013) argued that transformational leadership is a factor in the successful implementation of the TOC. Huang, Li, Chung, Hsu, and Tsai (2013) used the TOC, in a case study, and explored the successful implementation of the TOC in a manufacturing company. Huang et al. (2013) identified leadership support and commitment as the single most important success factor in the TOC change process, which was a minor theme in this study. Leaders use the TOC for decision-making and organizational adaptation to gain a competitive advantage (Bettis et al., 2014).

TOC and Change. A focus on change and a focus on culture emerged as Themes 3 and 4 in the study. The TOC supports the notion that organizational change and culture effect PI. According to Goldratt (1990), **o**rganizational change in the TOC is a critical step in improving processes and performance. Moreover, the TOC is a change process to exploit organizational change based on internal and external constraints (Mishra & Palo, 2014). Participants used the TOC as a change method. Company leaders can use the CRT, the FRT diagrams, and the value stream maps of the TOC

processes in Steps 2 thru 4 to identify constraints and to implement strategies to remove constraints (Alsmadi et al., 2014). Additionally, leaders use the TOC thinking process method as a change process (Chou et al., 2012). The TOC is a change method for PI (Sharma, Dixit, & Qadri, 2015); participants posited that a method for change is essential for implementing PI changes. Organizational leaders use the TOC change process to improve performances, lower costs, and gain a competitive advantage (Sharma et al., 2015). Organizational culture affects the implementation of change to reach the future state in the TOC (Talib et al., 2013).

Organizational culture was a theme in the study. Organizational culture is an essential element in the TOC change process (Garcia et al., 2013). According to participants, cultural factors affect the implementation of PI. Participants stressed that a culture of continuous improvement is effective in mitigating resistance to change. Employees' attitudes toward change affect organizational change (Haffar et al., 2014; Hanif et al., 2014). Organizational culture, such as norms, values, and beliefs are factors that affect employees' successful implementation of the TOC (Marchand et al., 2013). Sim and Chiang (2012) argued that organizational change failures occur based on employees' attitudes of resistance to change and lack of trust. Marchand et al. (2013) concluded that specific factors within management that could affect the decision to implement the TOC are an organizational commitment in implementing continuous improvement programs, the attitude toward change, motivation and leadership, and the existence of systematic processes. Leaders must be aware of the constraints in using the TOC to improve performance (Marchand et al., 2013).

TOC and Performance. A focus on performance was a theme in the study with relevance to the conceptual framework. Performance improvement is the ultimate goal of leaders for using the TOC (Gupta et al., 2013). The TOC begins with systems' owners setting organizational goals and selecting performance measures to evaluate performance and cost (Sadat et al., 2013). Mathu argued that throughput connotes improving effectiveness, efficiency, and profitability. Zivaljevic (2015) explored the use of the TOC approach in land transportation. Zivaljevic used performance measurements to assess systems' performance in achieving expected outcomes and goals. Zivaljevic used metrics to measure throughput, inventory, and operating expenses. Performance is a measure of throughput in the TOC (Mathu, 2014).

Performance management is a process, in the TOC, for leaders to focus on achieving mission objectives, collecting data to manage the organization more effectively, and to enhance efficiency (Harvey et al., 2015). Performance management is a critical element in the process of identifying performance problems and operational efficiencies (Mensah & George, 2015). Moreover, Sadat et al. (2013) argued that performance systems are necessary to determine the impact of the injected strategies to improve profits (Sadat et al., 2013). Performance measures are tools for leaders to improve production and to manage operational processes efficiently (Mensah & George, 2015).

TOC and Resources. Theme 5, a focus on resources, was relevant to the conceptual framework. Khuong and Hoang (2015) argued that employees are an

important company asset because workers create value for firms. Grant (1996) argued that knowledge and expertise are organizational resources and primary sources for gaining the competitive advantage. Knowledge sharing is critical to the TOC change process from the CRT to the FRT in creating value (Huang et al., 2013). In a case study research, Huang et al. (2013) found that a lack of a thorough understanding of the TOC and value stream mapping is a hindrance to implementing the TOC. To ensure implementation success, Huang et al. (2013) inserted a knowledge transfer step in the TOC. The follow-on training during the implementation process is a means to reinforce knowledge and ensure that participants do not revert to previous work practices (Huang et al., 2013). Organizations use knowledge sharing as a resource to sustain the TOC's improvement efforts (Huang et al., 2013).

Participants indicated that new technology and information systems enhance PI. Procuring new resources, which is the elevation of constraints in Step 4 of the TOC model, is essential for successful implementation of the TOC (Chou et al., 2012). Business leaders invest in new equipment to improve the capacity, in the constrained process, to eliminate the bottleneck (Moynihan, 2014). Leaders who focus on the upgrading of inferior equipment, improving equipment performance, redesigning equipment, estimating the lifespan of the equipment, and investing in equipment testing stations improve production (Zeng et al., 2013).

Applications to Professional Practice

The DoD leaders have potential savings of $18-23 billion in logistics and supply chain management with successful implementation of PI (Defense Business Board, 2013). Therefore, incorporating CSFs into PI, a holistic approach to PI, is critical to prevent PI failures (Laureani & Antony, 2012). I identified CSFs that leaders could use to increase the successful implementation of PI. The identified themes were organizational leadership, culture, change, performance; strategic management, resource management, and continuous improvement are critical factors in implementing PI.

First, identified themes could result in overall improved organizational performance and increased profits. The successful implementation of PI results in reduced costs, improved productivity, and increased profitability (Nawanir et al., 2013). Second, leaders might use the leadership strategies to adopt a leadership style to create an environment of successful Lean transformation. Leaders who promote a culture of embracing change, empowerment, trust, and openness achieve continuous PI (Aij et al., 2015). Third, a focus on strategic management and performance management is a strategy that companies use to improve the completive advantage of the organization (Auka & Langat, 2016). Leaders assume responsibility for defining the organizational vision, increasing performance and profit, developing a commitment to PI, and attaining goals (El Aziz & Fady, 2013). Finally, this study could become a precursor for future research in strategy formulation to achieve successful implementation of PI.

Implications for Social Change

The integration of PI strategies in the PI process has implications for positive social change and may include increasing the success of PI and reducing costs. Improved PI success in the military fosters the ability of leaders to increase aircraft availability to enhance national defense, humanitarian efforts, and border security. Logistics leaders receive pressure from the DoD to increase aircraft production (Defense Business Board, 2014). Military leaders who ignore the need to improve logistic processes that include aircraft maintenance, supply, equipment maintenance, and transportation could minimize the U.S. projection of air power.

The knowledge gained from this study could contribute to social change by providing leaders with strategies for establishing new work relationships and agreements with the local union, workforce, and internal and external stakeholders to increase the success rates of PI. Participants indicated that the union and the workforce are sources of resistance to change. Labor unions represent the interests of their members, negotiate grievances, wages, and numbers of employees (Mate, 2014). The outcome of this study may facilitate the use of PI strategies to form new relationships and culture between the organization and the union.

Recommendations for Action

Karim and Arif-Uz-Zaman (2013) concluded that inappropriate methods for implementing lean strategies result in disruptions in the process instead of expected improvements. Consequently, organizations require different strategies and approaches to PI to achieve expected outcomes (Karim & Arif-Uz-Zaman, 2013). The synthesis of

themes derived from the case study supported the identification of recommended actions that logistics leaders should consider for increasing the successful implementation of PI. The lack of a holistic approach to PI has a significant influence on implementation failures (Manville et al., 2012).

The first recommendation is leaders who are implementing PI should develop, understand, and employ strategies to mitigate the barriers to continuous improvement. Barriers such as leadership support, culture, employee training, organizational change, and knowledge management are inhibitors to the successful implementation of PI. The second recommendation is leaders should recognize the value of leadership and the workforce. Leaders play an important role in setting goals and influencing followers' performance (Wang et al., 2014). Moreover, workers, as an intellectual capital value, are the critical source of productivity and contributors to corporate performance and profitability (Khomba, 2013). The third recommendation is leaders should adopt a change process to enhance the implementation of PI. Leaders that adopt a change process of involving followers, communicating the change, sharing knowledge of the change, and promoting the change enhance the acceptance of change (Holten & Brenner, 2015). The fourth recommendation is leaders should use a balanced scorecard for performance management to achieve organizational goals. The balanced scorecard approach is a method for leaders to assess organizational performance (Oyewobi et al., 2015). The final recommendation is leaders should take an innovative approach to resource management. Hilman and Kaliappen (2015) found that innovation is a critical strategy for improving organizational performance.

The findings of this study are important to government leaders not only to increase aircraft production, but also to reduce operational budgets. I will provide the participants with a summary of the findings. The participants could communicate the findings during PI training and seminars. I will publish this doctoral study on ProQuest and in peer-reviewed journals to communicate findings of the study. Additionally, in the role of a consultant, I will conduct training, seminars, and forums to disseminate the results of the study to organizational stakeholders.

Recommendations for Further Research

The purpose of this report is to inform individuals with PI responsibilities to develop strategies to enhance the successful implementation of PI. The use of PI within organizations has improved and matured, but scholars do not focus on the critical factors in implementing PI (Fadly Habidin & Mohd Yusof, 2013). The application of PI is increasing in businesses and manufacturing companies to employ quality programs to improve manufacturing performance and profitability (Karim & Arif-Uz-Zaman, 2013); however, project failures are still commonly reported (Kornfeld & Kara, 2013). Various factors of PI affect organizational performance; however, not all elements of TQM contribute to enhanced performance (Ngambi & Nkemkiafu, 2015). Future studies should focus on critical success factors such as identifying variables of PI failure.

I used the qualitative single case study to explore strategies that logistics leaders use to implement PI in military aviation. I conducted the study using civilian participants from a military installation in the State of Georgia. Other military installations have similar mission functions and use PI as a strategy to improve performance. I recommend

further research to determine what strategies leaders at other military installation with different mission functions could use to implement PI. Moreover, researchers should use a larger sample size and multiple organizations. One military maintenance unit was the focus of this study to determine CSFs. Further research is necessary to determine the CSFs for service and supply chain organizations. Additionally, I also recommend further research to find if a relationship exists between each critical success factor and successful implementation of PI and performance. Further research is necessary to foster a further understanding of the strategies affecting the implementation of PI.

Reflections

Before conducting this research study, I performed an extensive literature review of studies on government, fraud, waste, and abuse. My initial focus for a problem was inefficiencies in the Division of Family and Children Services. However, I discovered that the organizations did not possess the knowledge of PI to answer the research question. Afterward, I focused on a military organization with success in implementing PI. I was aware that leaders in the organization used PI as a strategy to improve performance and production. I had no preconceived thoughts about the possible finding other than the units used the Kaizen method for PI. I selected the organization because the units had a high maturity level for organization-wide implementation of PI. I had several revelations regarding the processes in the doctorial study. First, writing a doctoral study is a momentous task. Second, selecting a business problem to affect social change entailed reviewing other literature with similar research. Third, bracketing is a critical aspect of the research process. Finally, the rigor needed to accomplish a critical

analysis of the literature review and the corroboration of the finding with the literature review and conceptual framework was daunting but necessary for scholarly research.

After completing the study, I have gained an increased understanding of how to achieve successful PI implementation. Process improvement is more than following the DMAIC steps. The critical factors that affect PI are relevant to organizations and stakeholders along the value chain to improve performance and reduce costs.

Conclusion

The purpose of this qualitative case study was to explore the strategies that logistics leaders use to implement PI in the military aviation industry. This research study is additional knowledge in the body of literature on PI implementation. Organizations fail to achieve successful implementation of PI when leaders fail to consider other factors that affect PI (Raghunath & Jayathirtha, 2014). Leaders should not restrict PI to training and improvement events, but incorporate factors such as leadership, culture, change, performance management, and process management into the implementation process of PI (Raghunath & Jayathirtha, 2014).

A total of six civilian participants, from a military organization, participated in semistructured interviews to answer the central research question: What strategies do logistics leaders use to implement PI in the military aviation industry? The seven main themes that emerged from this study were (a) focus on leadership, (b) focus on continuous improvement, (c) focus on culture, (d) focus on change, (e) focus on performance management, (f) focus on strategic management, and (g) focus on resource management. The themes are in agreement with previous studies and the literature

review. Leaders and managers may use these themes to develop PI strategies to implement PI effectively for increasing aircraft production and reducing costs. Effective strategies to implement PI are essential components for organizations to increase business profits, reduce operational costs, process variability, cycle time, manufacturing and maintenance inspection time, and inventory (Belekoukias et al., 2014).

Recommendations for action are leaders should (a) develop, understand, and employ strategies that are critical for continuous improvement, (b) recognize the value of leadership and the workforce, (c) adopt a change process to enhance the implementation of PI, (d) use a balanced scorecard approach to performance management to achieve organizational goals, and (e) take an innovative approach to resource management. Incorporating the PI strategies in military aviation organizations may result in increasing the success rate of PI implementation, increasing aircraft availability, and increasing mission capability.

References

Aaberg, W., & Thompson, C. (2011). Combining a human performance model and a Six Sigma model to assess performance in a military environment. *Performance Improvement, 50*, 36-48. doi:10.1002/pfi.20193

Abdel Al, S. F., & McLellan, J. D. (2013). Strategy and management accounting practices alignment and its effect on organizational performance. *Journal of Accounting, Business and Management, 20*, 1-27. Retrieved from http://www.stie-mce.ac.id

Aij, K. H., Visse, M., & Widdershoven, G. A. M. (2015). Lean leadership: An ethnographic study. *Leadership in Health Services, 28*, 119-134. doi:10.1108/LHS-03-2014-0015

Alagaraja, M. (2013). Mobilizing organizational alignment through strategic human resource development. *Human Resource Development International, 16*, 74-93. doi:10.1080/13678868.2012.740794

Ali, A., & Ivanov, S. (2015). Change management issues in a large multinational corporation: A study of people and systems. *International Journal of Organizational Innovation, 8*, 24-30. Retrieved from http://www.iaoiusa.org

Ali, A. J., Islam, M. A., & Lim, P. H. (2013). A study of sustainability of continuous improvement in the manufacturing industries in Malaysia. *Management of Environmental Quality, 24*, 408-426. doi:10.1108/14777831311322695

Allahdadian, M., Irajpour, A., Kazemi, A., & Kheirabadi, G. (2016). Strategy for mental health improvement of Iranian stillborn mothers from their perspective: A

qualitative study. *Iranian Red Crescent Medical Journal, 18*(1), 1-7. doi:10.5812/ircmj.21081

Al-Nawafleh, A., Zeilani, R. S., & Evans, C. (2013). After the doctorate: A qualitative study investigating nursing research career development in Jordan. *Nursing and Health Sciences, 15,* 423-429. doi:10.1111/nhs.12035

Alsmadi, M., Almani, A., & Khan, Z. (2014). Implementing an integrated ABC and TOC approach to enhance decision making in a lean context. *The International Journal of Quality and Reliability Management, 31*, 906-920. doi:10.1108/IJQRM-04-2013-0063

Al-Tabbaa, O., Gadd, K., & Ankrah, S. (2013). Excellence models in the non-profit context: Strategies for continuous improvement. *The International Journal of Quality and Reliability Management, 30,* 590-612. doi:10.1108/02656711311315521

Al-Zubi, M. F., & Khamees, B. A. (2014). Activity-based costing vs. theory of constraints: An empirical study into their effect on the cost performance of NPD initiatives. *International Journal of Economics and Finance, 6*, 157-165. doi:10.5539/ijef.v6n12p157

Ament, S. C., Gillissen, F., Moser, A., Maessen, J. C., Dirksen, C. D., von Meyenfeldt, M. F., & van der Weijden, T. (2014). Identification of promising strategies to sustain improvements in hospital practice: A qualitative case study. *BMC Health Services Research, 14,* 375-398. doi:10.1186/s12913-014-0641-y

Anderson, N. C., & Kovach, J. V. (2014). Reducing welding defects in turnaround projects: A Lean Six Sigma case study. *Quality Engineering, 26*, 168-181. doi:10.1080/08982112.2013.801492

Andersson, R., Hilletofth, P., Manfredsson, P., & Hilmola, O. (2014). Lean Six Sigma strategy in telecom manufacturing. *Industrial Management and Data Systems, 114*, 904-921. doi:10.1108/IMDS-02-2014-0069

Applegarth, J., Dwyer, T., Moxham, L., & Happell, B. (2013). Identifying and acquiring the contextual skills and knowledge for nursing practice in assisted reproductive technology: A grounded theory study. *Journal of Clinical Nursing, 22*, 1738-1747. doi:10.1111/j.1365-2702.2012.04275.x

Arbour, R. B., & Wiegand, D. L. (2014). Self-described nursing roles experienced during care of dying patients and their families: A phenomenological study. *Intensive and Critical Care Nursing, 30*, 211-218. doi:10.1016/j.iccn.2013.12.002

Armstrong, N., Jackson, C. J., McNicol, S., Dixon-Woods, M., Kenyon, S., & Tarrant, C. (2013). Unblinding following trial participation: Qualitative study of participants' perspectives. *Clinical Trials, 10*, 97-103. doi:10.1177/1740774512464726

Asif, M., Awan, M. U., Khan, M. K., & Ahmad, N. (2013). A model for total quality management in higher education. *Quality and Quantity, 47*, 1883-1904. doi:10.1007/s11135-011-9632-9

Assarlind, M. & Aaboen, L. (2014). Forces affecting one Lean Six Sigma adoption process. *International Journal of Lean Six Sigma, 5*, 324-340. doi:10.1108/IJLSS-07-2013-0039

Assarlind, M., Gremyr, I., & Backman, K. (2013). Multi-faceted views on a Lean Six Sigma application. *The International Journal of Quality and Reliability Management, 30*, 387-402. doi:10.1108/02656711311308385

Auka, D. O., & Langat, J. C. (2016). Effects of strategic planning on performance of medium sized enterprises in Nakuru town. *International Review of Management and Business Research, 5*, 188-203. Retrieved from http://irmbrjournal.com

Awadh, A. M., & Alyahya, M. S. (2013). Impact of organizational culture on employee performance. *International Review of Management and Business Research*, *2*, 168-175. Retrieved from http://irmbrjournal.com

Ayhan, M. B., Oztemel, E., Aydin, M. E., & Yue, Y. (2013). A quantitative approach for measuring process innovation: A case study in a manufacturing company. *International Journal of Production Research, 51*, 3463-3475. doi:10.1080/00207543.2013.774495

Ayoup, H., Omar, N., & Abdul Rahman, I. K. (2016). Balanced scorecard and strategic alignment: A Malaysian case. *International Journal of Economics and Financial Issues, 6,* 85-95. Retrieved from http://www.econjournals.com

Azmawani, A. R., Siew, I. N., Sambasivan, M., & Wong, F. (2013). Training and organizational effectiveness: Moderating role of knowledge management process. *European Journal of Training and Development, 37*, 472-488. doi:10.1108/03090591311327295

Babnik, K., Breznik, K., Dermol, V., & Nada, T. S. (2014). The mission statement: Organisational culture perspective. *Industrial Management and Data Systems, 114*, 612-627. doi:10.1108/IMDS-10-2013-0455

Bacha, E. (2014). The relationship between transformational leadership, task performance and job characteristics. *The Journal of Management Development, 33*, 410-420. doi:10.1108/JMD-02-2013-0025

Bahn, S. (2013). Moving from contractor to owner operator: Impact on safety culture: A case study. *Employee Relations, 35*, 157-172. doi:10.1108/01425451311287853

Baia, A. P. (2015). Achieving customer specifications through process improvement using Six Sigma: Case study of NutriSoil - Portugal. *The Quality Management Journal, 22*, 48-60. Retrieved from http://www.asq.org

Ballangrud, R., Hall-Lord, M. L., Persenius, M., & Hedelin, B. (2014). Intensive care nurses' perceptions of simulation-based team training for building patient safety in intensive care: A descriptive qualitative study. *Intensive and Critical Care Nursing*, *30*, 179-187. doi:10.1016/j.iccn.2014.03.002

Bani-Hani, J. S., & Al-Omari, Z. (2012). The role of quality improvement factors in improving quality based operational performance: Applied study in private hospitals in Jordan. *International Journal of Business and Social Science, 3*, 213-223. Retrieved from http://www.ijbssnet.com

Bateman, J. D. (2013). Virtual patient design: Exploring what works and why. A grounded theory study. *Medical Education*, *47*, 595-606. doi:10.1111/medu.12151

Baxley, S. M., & Daniels, G. (2014). Adolescent participation in research: A model of ethnic/minority recruitment and retention. *Journal of Theory Construction and Testing, 18,* 33-39. Retrieved from http://www.tuckerpub.com

Belekoukias, I., Garza-Reyes, J. A., & Kumar, V. (2014). The impact of lean methods and tools on the operational performance of manufacturing organisations. *International Journal of Production Research, 52*, 5346. doi:10.1080/00207543.2014.903348

Bettis, R. A., Gambardella, A., Helfat, C., & Mitchell, W. (2014). Theory in strategic management. *Strategic Management Journal, 35*, 10, 1411-1413. doi:10.1002/smj.2308

Bevan, M. T. (2014). A method of phenomenological interviewing. *Qualitative Health Research, 24,* 136-144. doi:10.1177/1049732313519710

Bhat, S., Gijo, E. V., & Jnanesh, N. A. (2014). Application of Lean Six Sigma methodology in the registration process of a hospital. *International Journal of Productivity and Performance Management, 63*, 613-643. doi:10.1108/IJPPM-11-2013-0191

Blank, A., Harries, P., & Reynolds, F. (2013). The meaning and experience of work in the context of severe and enduring mental health problems: An interpretative phenomenological analysis. *Work, 45*, 299-304. doi:10.3233/WOR-121519

Bode, D. V., Roberts, T. A., & Johnson, C. (2013). Increased adolescent overweight and obesity documentation through a simple electronic medical record intervention. *Military Medicine, 178,* 115-118. doi:10.7205/MILMED-D-12-00201

Bon, A. T., & Mustafa, E. M. (2013). Impact of total quality management on innovation in service organizations: Literature review and new conceptual framework. *Procedia Engineering*, *53*, 516-529. Retrieved from http://www.elsevier.com

Bornsheuer, J. N., Henriksen, R. C., & Irby, B. J. (2012). Psychological care provided by the church: Perceptions of Christian church members. *Counseling and Values, 57*, 199-213. doi:10.1002/j.2161-007X.2012.00017.x

Braaksma, A., Klingenberg, W., & Veldman, J. (2013). Failure mode and effect analysis in asset maintenance: A multiple case study in the process industry. *International Journal of Production Research*, *51*, 1055-1071. doi:10.1080/00207543.2012.674648

Brajer-Marczak, R. (2014). Employee engagement in continuous improvement of processes. *Management*, *18*, 88-103. doi:10.2478/manment-2014-0044

Brun, A. (2011). Critical success factors of Six Sigma implementations in Italian companies. *International Journal of Production Economics*, *131*, 158-164. doi:10.1016/j.ijpe.2010.05.008

Buavaraporn, N., & Tannock, J. (2013). Business process improvement in services: Case studies of financial institutions in Thailand. *International Journal of Quality and Reliability Management*, *30*, 319-340. doi:10.1108/02656711311299854

Bulut, Y. E., & Atakisi, A. (2015). The impact of human resource management practices over supply chain qualitative performance. *International Refereed Academic Social Sciences Journal, 6*, 105-124. doi:10.17364/IIB.20151810982

Burns, B., Grindlay, K., Holt, K., Manski, R., & Grossman, D. (2014). Military sexual trauma among US servicewomen during deployment: A qualitative study. *American Journal of Public Health, 104*, 345-349. doi:10.2105/AJPH.2013.301576

Burns-Cunningham, K. (2014). Social research design: Framework for integrating philosophical and practical elements. *Nurse Researcher, 22*, 32-37. doi:10.7748/nr.22.1.32.e1276

Callery, P., Kyle, R. G., Banks, M., Ewing, C., & Kirk, S. (2013). Enhancing parents' confidence to care in acute childhood illness: Triangulation of findings from a mixed methods study of community children's nursing. *Journal of Advanced Nursing*, *69*, 2538-2548. doi:10.1111/jan.12141

Campbell, J. L., Quincy, C., Osserman, J., & Pedersen, O. K. (2013). Coding in-depth semistructured interviews: Problems of unitization and intercoder reliability and agreement. *Sociological Methods and Research, 42*, 294-320. doi:10.1177/0049124113500475

Campos, L. M. (2013). Lean manufacturing and Six Sigma based on Brazilian model "PNQ": An integrated management tool. *International Journal of Lean Six Sigma*, *4*, 355-369. doi:10.1108/IJLSS-08-2012-0007

Carter, M. Z., Armenakis, A. A., Feild, H. S., & Mossholder, K. W. (2013). Transformational leadership, relationship quality, and employee performance during continuous incremental organizational change. *Journal of Organizational Behavior*, *34*, 942-958. doi:10.1002/job.1824

Carter, S. M., & Greer, C. R. (2013). Strategic leadership: Values, styles, and organizational performance. *Journal of Leadership and Organizational Studies, 20,* 379-393. doi:10.1177/1548051812471724

Chakraborty, A., & Tan, K. C. (2012). Case study analysis of Six Sigma implementation in service organisations. *Business Process Management Journal, 18,* 992-1019. doi:10.1108/14637151211283384

Chambers, N., Sheaff, R., Mahon, A., Byng, R., Mannion, R., Charles, N., ... Llewellyn, S. (2013). The practice of commissioning healthcare from a private provider: Learning from an in-depth case study. *BMC Health Services Research, 13*(54), 1-10. doi:10.1186/1472-6963-13-S1-S4

Chang, E. T., Wells, K. B., Young, A. S., Stockdale, S., Johnson, M. D., Fickel, J. J., … Rubenstein, L. V. (2014). The anatomy of primary care and mental health clinician communication: A quality improvement case study. *Journal of General Internal Medicine, 29,* 598-606. doi:10.1007/s11606-013-2731-7

Channar, Z. A., Talreja, S., & Bai, M. (2015). Impact of human capital variables on the effectiveness of the organizations. *Pakistan Journal of Commerce and Social Sciences, 9,* 228-240. Retrieved from http://www.jespk.net

Chen, C. M., Delmas, M. A., & Lieberman, M. B. (2015). Production frontier methodologies and efficiency as a performance measure in strategic management research. *Strategic Management Journal, 36,* 19-36. doi:10.1002/smj.2199

Chen, H., & Deterding, A. (2013). College-aged young consumers' interpretations of product placement in social games. *Young Consumers, 14*, 41-51. doi:10.1108/17473611311305476

Cheng, J-L. (2013). Linking Six Sigma to business strategy: An empirical study in Taiwan. *Measuring Business Excellence, 17*, 22-32. doi:10.1108/13683041311311347

Cheng, C., Bartram, T., Karimi, L., & Leggat, S. G. (2013). The role of team climate in the management of emotional labor: Implications for nurse retention. *Journal of Advanced Nursing, 69*, 2812-2825. doi:10.1111/jan.12202

Cheng, T. C., & Choy, P. W. (2013). A study of the relationships between quality management practices and organizational performance in the shipping industry. *Maritime Economics and Logistics, 15*(1), 1-31. doi:10.1057/mel.2012.19

Cheung, S. O., Wong, P. S., & Lam, A. L. (2012). An investigation of the relationship between organizational culture and the performance of construction organizations. *Journal of Business Economics and Management, 13*, 688-704. doi:10.3846/16111699.2011.620157

Chou, P. (2014). Does transformational leadership matter during organizational change? *European Journal of Sustainable Development, 3*, 49-62. doi:10.14207/ejsd.2014.v3n3p49

Chou, Y., Lu, C., & Tang, Y. (2012). Identifying inventory problems in the aerospace industry using the theory of constraints. *International Journal of Production Research, 50,* 4686-4698. doi:10.1080/00207543.2011.631598

Chrisentary, J. T., & Barrett, D. E. (2015). An exploration of leadership in virtual communities of practice. *Management, 77,* 25-34. doi:10.7595/management.fon.2015.0027

Clark, D. M., Silvester, K., & Knowles, S. (2013). Lean management systems: Creating a culture of continuous quality improvement. *Journal of Clinical Pathology, 66,* 638-643. doi:10.1136/jclinpath-2013-201553

Cleland, C. L., Hunter, R. F., Tully, M. A., Scott, D., Kee, F., Donnelly, M., ... Cupples, M. E. (2014). Identifying solutions to increase participation in physical activity interventions within a socio-economically disadvantaged community: A qualitative study. *International Journal of Behavioral Nutrition and Physical Activity, 11,* 105-122. doi:10.1186/1479-5868-11-68

Cohanier, B. (2014). What qualitative research can tell us about performance management systems. *Qualitative Research in Accounting and Management, 11,* 380-415. doi:10.1108/QRAM-06-2013-0023

Cope, D. G. (2014). Methods and meanings: Credibility and trustworthiness of qualitative research. *Oncology Nursing Forum, 41,* 89-91. doi:10.1188/14.ONF.89-91

Copestake, J. (2014). Credible impact evaluation in complex contexts: Confirmatory and exploratory approaches. *Evaluation, 20,* 412-427. doi:10.1177/1356389014550559

Coughlin, C. (2013). An ethnographic study of main events during hospitalisation: Perceptions of nurses and patients. *Journal of Clinical Nursing*, *22*, 2327-2337. doi:10.1111/j.1365-2702.2012.04083.x

Counte, M. A., Wang, B., Jar, Y. P., & Chang, L. (2013). Globalization of performance improvement approaches and methods in health organizations: Implications for health management education and practice in the United States and Taiwan. *The Journal of Health Administration Education*, *30*, 251-265. Retrieved from http://www.aupha.org

Crighton, E., Brown, C., Baxter, J., Lemyre, L., Masuda, J., & Ursitti, F. (2013). Perceptions and experiences of environmental health risks among new mothers: A qualitative study in Ontario, Canada. *Health, Risk and Society*, *15*, 295-312. doi:10.1080/13698575.2013.796345

Cronemyr, P., Eriksson, M., & Jakolini, S. (2014). Six Sigma diplomacy: The impact of Six Sigma on national patterns of corporate culture. *Total Quality Management and Business Excellence*, *25*, 827-841. doi:10.1080/14783363.2014.906108

Cronin, C. (2014). Using case study research as a rigorous form of inquiry. *Nurse Researcher*, *21*, 19-27. doi:10.7748/nr.21.5.19.e1240

Cunsolo Willox, A., Harper, S. L., Ford, J. D., Edge, V. L., Landman, K., Houle, K., . . . Wolfrey, C. (2013). Climate change and mental health: An exploratory case study from Rigolet, Nunatsiavut, Canada. *Climatic Change, 121*, 255-270. doi:10.1007/s10584-013-0875-4

Curry, L. A., Linnander, E. L., Brewster, A. L., Ting, H., Krumholz, H. M., & Bradley, E. H. (2015). Organizational culture change in U.S. hospitals: A mixed methods longitudinal intervention study. *Implementation Science, 10,* 1-11. doi:10.1186/s13012-015-0218-0

Dabestani, R., Taghavi, A., & Saljoughian, M. (2014). The relationship between total quality management critical success factors and knowledge sharing in a service industry. *Management and Labour Studies, 39,* 81-101. doi:10.1177/0258042X14535160

Daiker, B. L (2013). Adaptive challenges in medical practices. *Journal of Medical Practice Management, 28,* 332-40. Retrieved from http://www.mpmnetwork.com

Darawsheh, W. (2014). Reflexivity in research: Promoting rigour, reliability and validity in qualitative research. *International Journal of Therapy and Rehabilitation, 21,* 560-568. doi:10.12968/ijtr.2014.21.12.560

Das, A., Kumar, V., & Kumar, U. (2011). The role of leadership competencies for implementing TQM: An empirical study in Thai manufacturing industry. *International Journal of Quality and Reliability Management, 28,* 195-219. doi:10.1108/02656711111101755

Das, B., Venkatadri, U., & Pandey, P. (2014). Applying Lean manufacturing system to improving productivity of air conditioning coil manufacturing. *International Journal of Advanced Manufacturing Technology, 71,* 307. doi:10.1007/s00170-013-5407-x

David Han-Min, W., & Quang Linh, H. (2014). The relationships among quality management system, knowledge management and organizational performance: An application of the Heckman two-step method. *Journal of Applied Economics and Business Research, 4*, 235-245. Retrieved from http://www.aebrjournal.org

Davis, M. V, Mahanna, E., Joly, B., Zelek, M., Riley, W., Verma, P., & Fisher, J. S. (2014). Creating quality improvement culture in public health agencies. *American Journal of Public Health, 104*, E98-E104. doi:10.2105/AJPH.2013.301413

Dawson, A. P., Cargo, M., Stewart, H., Chong, A., & Daniel, M. (2012). "I know it's bad for me and yet I do it": Exploring the factors that perpetuate smoking in aboriginal health workers, a qualitative study. *BMC Health Services Research, 12*, 102-113. doi:10.1186/1472-6963-12-102

Defense Business Board. (2014). *Implementing best practices for major business processes in the Department of Defense*. Washington, DC: U.S. Government Printing Office.

Defense Business Board. (2015). *Transforming DoD's core business processes for revolutionary change*. Washington, DC: U.S. Government Printing Office.

Defense Business Board. (2016). *Applying best business practices from corporate performance management to DoD*. Washington, DC: U.S. Government Printing Office.

Denzin, N. K., & Lincoln, Y. S. (Eds.). (2011). *The Sage handbook of qualitative research* (4th ed.). Thousand Oaks, CA: Sage.

Doody, O., & Noonan, M. (2013). Preparing and conducting interviews to collect data. *Nurse Researcher, 20,* 28-32. doi:10.7748/nr2013.05.20.5.28.e327

Doody, O., Slevin, E., & Taggart, L. (2013). Focus group interviews part 3: Analysis. *British Journal of Nursing, 22,* 266-269. doi:10.12968/bjon.2013.22.5.266

Doran, K. M., Vashi, A. A., Platis, S., Curry, L. A., Rowe, M., Gang, M., & Vaca, F. E. (2013). Navigating the boundaries of emergency department care: Addressing the medical and social needs of patients who are homeless. *American Journal of Public Health, 103,* S355-S360. doi:10.2105/AJPH.2013.301540

Drohomeretski, E., da Costa, S. E., de Lima, E. P., & Garbuio, P. A. (2014). Lean, Six Sigma and Lean Six Sigma: An analysis based on operations strategy. *International Journal of Production Research, 52,* 804-824. doi:10.1080/00207543.2013.842015

Duff, A. J. (2013). Performance management coaching: Servant leadership and gender implications. *Leadership and Organization Development Journal, 34,* 204-221. doi:10.1108/01437731311326657

Effelsberg, D., Solga, M., & Gurt, J. (2014). Transformational leadership and follower's unethical behavior for the benefit of the company: A two-study investigation. *Journal of Business Ethics, 120,* 81-93. doi:10.1007/s10551-013-1644-z

El Aziz, R. A., & Fady, R. (2013). Business improvement using organisational goals, Riva technique and e-business development stages: A case study approach. *Journal of Enterprise Information Managemen*t, 26, 5, 577-595. doi:10.1108/JEIM-07-2013-0044

Elbireer, A., Chasseur, J. L., & Jackson, B. (2013). Improving laboratory data entry quality using Six Sigma. *International Journal of Health Care Quality Assurance, 26,* 496-509. doi:10.1108/IJHCQA-08-2011-0050

Elo, S., Kaariainen, M., Kanste, O., Polkki, T., Utriainen, K., & Kyngas, H. (2014). Qualitative content analysis: A focus on trustworthiness. *SAGE Open, 4*(1), 1-10. doi:10.1177/2158244014522633

Fadly Habidin, N., & Mohd Yusof, S. R. (2013). Critical success factors of Lean Six Sigma for the Malaysian automotive industry. *International Journal of Lean Six Sigma, 4,* 60-82. doi:10.1108/20401461311310526

Fallahi, M. B., & Baharestan, O. (2014). Investigating the effect of human resources management and intellectual capital on the organizational performance (Kermanshah physical education organization as a case study). *International Journal of Academic Research in Economics and Management Sciences, 3,* 126-140. doi:10.6007/IJAREMS/v3-i3/946

Fang, L. C., & Saini, D. S. (2012). Managing diversity in Chinese and Indian organizations: A qualitative study. *Journal of Chinese Human Resources Management, 3,* 16-32. doi:10.1108/20408001211220548

Farquhar, M., Preston, N., Evans, C. J., Grande, G., Short, V., Benalia, H., ... Todd, C. (2013). Mixed methods research in the development and evaluation of complex interventions in palliative and end-of-life care: Report on the MORECare consensus exercise. *Journal of Palliative Medicine, 16,* 1550-1560. doi:10.1089/jpm.2012.0572

Felemban, O., St John, W., & Shaban, R. Z. (2015). Infection prevention and control in home nursing: Case study of four organisations in Australia. *British Journal of Community Nursing, 20,* 451-457. doi:10.12968/bjcn.2015.20.9.451

Fening, F. A., Amaria, P., & Frempong, E. O. (2013). Linkages between total quality management and organizational survival in manufacturing companies in Ghana. *International Journal of Business and Social Science*, *4*(10), 1-15. Retrieved from http://www.ijbssnet.com

Fetters, M. D., Curry, L. A., & Creswell, J. W. (2013). Achieving integration in mixed methods designs-principles and practices. *Health Services Research, 48,* 2134-2156. doi:10.1111/1475-6773.12117

Flemming, K., Graham, H., Heirs, M., Fox, D., & Sowden, A. (2013). Smoking in pregnancy: A systematic review of qualitative research of women who commence pregnancy as smokers. *Journal of Advanced Nursing*, *69,* 1023-1036. doi:10.1111/jan.12066

Florea, R., & Florea, R. (2014). Particular aspects regarding strategic management implementation in Romanian SMEs. *Economy Transdisciplinarity Cognition*, *17*, 30-34. Retrieved from http://etc.ugb.ro

Forslund, H. (2012). Performance management in supply chains: Logistics service providers' perspective. *International Journal of Physical Distribution and Logistics Management, 42,* 296-311. doi:10.1108/09600031211225972

Foster, B. A., & Hale, D. (2015). Perceptions of weight and health practices in Hispanic children: A mixed-methods study. *International Journal of Pediatrics, 2015*, 1-6. doi:10.1155/2015/761515

Freeman, L., Fothergill-Bourbonnais, F., & Rashotte, J. (2014). The experience of being a trauma nurse: A phenomenological study. *Intensive and Critical Care Nursing, 30*, 6-12. doi:10.1016/j.iccn.2013.06.004

Frels, R. K., & Onwuegbuzie, A. J. (2013). Administering quantitative instruments with qualitative interviews: A mixed research approach. *Journal of Counseling and Development, 91*, 184-194. doi:10.1002/j.1556-6676.2013.00085.x

Frich, J. C., Rothing, M., & Berge, A. R. (2014). Participants', caregivers', and professionals' experiences with a group-based rehabilitation program for Huntington's disease: A qualitative study. *BMC Health Services Research, 14*, 395-403. doi:10.1186/1472-6963-14-395

Fusch, P., & Ness, L. (2015). Are we there yet? Data saturation in qualitative research. *The Qualitative Report, 20*, 1408-1416. Retrieved from http://tqr.nova.edu

Gabrielsen, E., Lindstrom, U. A., & Naden, D. (2013). Assessing trustworthiness in hermeneutical studies: A discussion. *International Journal for Human Caring, 17*, 64-70. Retrieved from http://www.humancaring.org

Galli, B. J., & Handley, H. (2014). The right approach to Six Sigma leadership. *Industrial Management, 56*, 25-30. Retrieved from http://www.iienet.org

Gambetti, R. C., & Giovanardi, M. (2013). Re-visiting the supply chain: A communication perspective. *Corporate Communications, 18*, 390-416. doi:10.1108/CCIJ-03-2012-0021

Garcia, J., Rivera, D., & Iniesta, A. (2013). Critical success factors for Kaizen implementation in manufacturing industries in Mexico. *International Journal of Advanced Manufacturing Technology*, *68*, 537-545. doi:10.1007/s00170-013-4750-2

Gardner, S. S. (2014). From learning to teach to teaching effectiveness: Nurse educators describe their experiences. *Nursing Education Perspectives, 35*, 106-111. doi:10.5480/12-821.1

Garza-Reyes, J., Flint, A., Kumar, V., Antony, J., & Soriano-Meier, H. (2014). A DMAIRC approach to lead time reduction in an aerospace engine assembly process. *Journal of Manufacturing Technology Management, 25*, 27-48. doi:10.1108/JMTM-05-2012-0058

Gaubatz, J. A., & Ensminger, D. C. (2015). Secondary school science department chairs leading successful change. *International Journal of Education Policy and Leadership, 10*, 1-21. Retrieved from http://journals.sfu.ca

Gerst, R. M. (2013). Deming's systems thinking and quality of healthcare services: A case study. *Leadership in Health Services, 26*, 204-219. doi:10.1108/LHS-02-2013-0010

Ghazisaeidi, M., Safdari, R., Torabi, M., Mirzaee, M., Farzi, J., & Goodini, A. (2015). Development of performance dashboards in healthcare sector: Key practical issues. *Acta Informatica Medica, 23,* 317-321. doi:10.5455/aim.2015.23.317-321

Ginsberg, F., & Sinacore, A. L. (2013). Counseling Jewish women: A phenomenological study. *Journal of Counseling and Development, 91,* 131-139. doi:10.1002/j.1556-6676.2013.00081.x

Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational Research Methods, 16,* 15-31. doi:10.1177/1094428112452151

Glover, W. J., Farris, J. A., & Van Aken, E. M. (2014). Kaizen events: Assessing the existing literature and convergence of practices. *Engineering Management Journal, 26,* 39-61. Retrieved from http://www.asem.com

Goldratt, E. M. (1990). *The haystack syndrome: Sifting information from the data ocean*. Crotonon-Hudson, NY: North River Press.

Goldratt, E. M., & Cox, J. (1984). *The goal: Excellence in manufacturing*. Crotonon-Hudson, NY: North River Press.

Goldratt, E. M., & Cox, J. (2004). *The goal: A process of ongoing improvement*. Great Barrington, MA: North River Press.

Goodridge, D., Westhorp, G., Rotter, T. Dobson, R., & Bath, B. (2015). Lean and leadership practices: Development of an initial realist program theory. *BMC Health Services Research, 15,* 362-377. doi:10.1186/s12913-015-1030-x

Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal, 17*, 109-122. doi:10.2307/2486994

Green, B. (2013). Narrative inquiry and nursing research. *Qualitative Research Journal, 13*, 62-71. doi.10.1108/14439881311314586

Gremyr, I., & Raharjo, H. (2013). Quality function deployment in healthcare: A literature review and case study. *International Journal of Health Care Quality Assurance, 26*, 135-46. doi:10.1108/09526861311297343

Grigoroudis, E., Orfanoudaki, E., & Zopounidis, C. (2012). Strategic performance measurement in a healthcare organisation: A multiple criteria approach based on balanced scorecard. *Omega, 40*, 104-119. doi:10.1016/j.omega.2011.04.001

Grosaru, F. (2014). Instruments of defense resources optimization: Defense resources management and performance management. *Journal of Defense Resources Management, 5*, 125-138. Retrieved from http://journal.dresmara.ro

Groves, K. S. (2014). Examining leader-follower congruence of social responsibility values in transformational leadership. *Journal of Leadership and Organizational Studies, 21*, 227. doi:10.1177/1548051813498420

Gubbins, C., Corrigan, S., Garavan, T. N., O' Connor, C., Leahy, D., Long, D., & Murphy, E. (2012). Evaluating a tacit knowledge sharing initiative: A case study. *European Journal of Training and Development, 36*, 827-847. doi:10.1108/03090591211263558

Gupta, M. C., Sahi, G. K., & Chahal, H. (2013). Improving market orientation: The theory of constraints-based framework. *Journal of Strategic Marketing, 214*, 305-322. doi:10.1080/0965254X.2013.790467

Gurumurthy, A., Mazumdar, P., & Muthusubramanian, S. (2013). Graph theoretic approach for analysing the readiness of an organisation for adapting Lean thinking. *International Journal of Organizational Analysis, 21*, 396-427. doi:10.1108/IJOA-04-2013-0652

Gustafsson, M., Kristensson, J., Holst, G., Willman, A., & Bohman, D. (2013). Case managers for older persons with multi-morbidity and their everyday work: A focused ethnography. *BMC Health Services Research, 13*(1), 1-25. doi:10.1186/1472-6963-13-496

Gutierrez, L. J., Bustinza, O. F., & Molina, V. B. (2012). Six Sigma, absorptive capacity and organisational learning orientation. *International Journal of Production Research, 50*, 661–675. doi:10.1080/00207543.2010.543175

Hackett, J., Glidewell, L., West, R., Carder, P., Doran, T., & Foy, R. (2014). Just another incentive scheme: A qualitative interview study of a local pay-for-performance scheme for primary care. *BMC Family Practice, 15*(1), 2-20. doi:10.1186/s12875-014-0168-7

Haffar, M., Al-Karaghouli, W., & Ghoneim, A. (2014). An empirical investigation of the influence of organizational culture on individual readiness for change in Syrian manufacturing organizations. *Journal of Organizational Change Management, 27*, 5-22. doi:10.1108/JOCM-04-2012-0046

Hagen, M., & Park, S. (2013). Ambiguity acceptance as a function of project management: A new critical success factor. *Project Management Journal, 44,* 52-66. doi:10.1002/pmj.21329

Hanif, M., Khan, Y. S., & Zaheer, A. (2014). Impact of organizational resistance to change on BPR implementation: A case of state bank of Pakistan. *European Journal of Business and Management, 6,* 186-196. Retrieved from http://www.iiste.org

Hardicre, J. (2014). An overview of research ethics and learning from the past. *British Journal of Nursing, 23,* 483-486. doi:10.12968/bjon.2014.23.9.483

Harvey, G., Jas, P., & Walshe, K. (2015). Analysing organisational context: Case studies on the contribution of absorptive capacity theory to understanding inter-organisational variation in performance improvement. *BMJ Quality and Safety, 24,* 48-51. doi:10.1136/bmjqs-2014-002928

Hawamdeh, S., & Raigangar, V. (2014). Qualitative interviewing: Methodological challenges in Arab settings. *Nurse Researcher, 21,* 27-31. doi:10.7748/nr2014.01.21.3.27.e357

Hayyat Malik, S. (2012). A study of relationship between leader behaviors and subordinate job expectancies: A path-goal approach. *Pakistan Journal of Commerce and Social Sciences, 6,* 357-371. Retrieved from http://www.jespk.net

Heavey, C., Ledwith, A., & Murphy, E. (2014). Introducing a new continuous improvement framework for increased organisational return on investment. *TQM Journal, 26,* 594. doi:10.1108/TQM-06-2013-0065

Hilman, H., & Kaliappen, N. (2015). Innovation strategies and performance: Are they truly linked? *World Journal of Entrepreneurship, Management and Sustainable Development, 11*, 48-63. doi:10.1108/WJEMSD-04-2014-0010

Hoare, K. J., Mills, J., & Francis, K. (2012). Dancing with data: An example of acquiring theoretical sensitivity in a grounded theory study. *International Journal of Nursing Practice, 18,* 240-245. doi:10.1111/j.1440-172X.2012.02038.x

Holms, N., Milligan, S., & Kydd, A. (2014). A study of the lived experiences of registered nurses who have provided end-of-life care within an intensive care unit. *International Journal of Palliative Nursing, 20,* 549-556. doi:10.12968/ijpn.2014.20.11.549

Holten, A., & Brenner, S. O. (2015). Leadership style and the process of organizational change. *Leadership and Organization Development Journal, 36*, 2-16. doi;10.1108/LODJ-11-2012-0155.

Horne, J., Lincoln, N. B., Preston, J., & Logan, P. (2014). What does confidence mean to people who have had a stroke?: A qualitative interview study. *Clinical Rehabilitation, 28,* 1125-1135. doi:10.1177/0269215514534086

Houghton, C. E., Casey, D., Shaw, D., & Murphy, K. (2010). Ethical challenges in qualitative research: Examples from practice. *Nurse Researcher, 18,* 15-25. doi:10.7748/nr2010.10.18.1.15.c8044

Houghton, C., Casey, D., Shaw, D., & Murphy, K. (2013). Rigour in qualitative case study research. *Nurse Researcher, 20,* 12-17. doi:10.7748/nr2013.03.20.4.12.e326

Hsiang-Han, H., & Tsung-Ting, C. (2016). Building competitive advantages and restructure resources: A case of Taiwan's exhibition industry. *International Journal of Organizational Innovation*, *8*, 112-124. Retrieved from http://www.iaoiusa.org

Hu, Q., Kapucu, N., & O'Byrne, L. (2014). Strategic planning for community-based small nonprofit organizations: Implementation, benefits, and challenges. *Journal of Applied Management and Entrepreneurship, 19*, 83-101. doi:10.9774/GLEAF.3709.2014.ja.00007

Huang, C-L., Li, R-K., Chung, Y-C., Hsu, Y-W., & Tsai, C-H. (2013). A Study of Using Critical Chain Project Management Method for Multi-Project Management Improvement *International Journal of Academic Research in Economics and Management Sciences*, 2, 55-67. Retrieved from http://hrmars.com

Huang, S., Chen, H., Chiu, A., & Chen, C. (2014). The application of the theory of constraints and activity-based costing to business excellence: The case of automotive electronics manufacture firms. *Total Quality Management and Business Excellence*, *25*, 532-545. doi:10.1080/14783363.2013.820023

Huang, Y-Y., & Handfield, R. B. (2015). Measuring the benefits of ERP on supply management maturity model: A big data method. *International Journal of Operations and Production Management*, *35*, 2-25. doi:10.1108/IJOPM-07-2013-0341

Hvidman, U., & Andersen, S. C. (2014). Impact of performance management in public and private organizations. *Journal of Public Administration Research and Theory, 24*, 35-58. doi:10.1093/jopart/mut019

Hyun Kim, S., Mukhopadhyay, T., & Kraut, R. E. (2016). When does repository KMS use lift performance? The role of alternative knowledge sources and task environments. *MIS Quarterly, 40*, 133-A7. Retrieved from http://misq.org

Ibanez-Gonzalez, D., Mendenhall, E., & Norris, S. A. (2014). A mixed methods exploration of patterns of healthcare utilization of urban women with non-communicable disease in South Africa. *BMC Health Services Research, 14*, 658-673. doi:10.1186/s12913-014-0528-y

Iden, J. (2012). Investigating process management in firms with quality systems: A multi-case study. *Business Process Management Journal, 18*, 104-121. doi:10.1108/14637151211215037

Inoue, H., & Yamada, S. (2013). Critical factors for process improvement in pharmaceutical research. *TQM Journal, 25*, 141-152. doi:10.1108/17542731311299582

Isa, M. F. M., & Usmen, M. (2015). Improving university facilities services using Lean Six Sigma: A case study. *Journal of Facilities Management, 13*, 70-84. doi:10.1108/JFM-09-2013-0048

Isaacs, A. N. (2014). An overview of qualitative research methodology for public health researchers. *International Journal of Medicine and Public Health, 4*, 318-323. doi:10.4103/2230-8598.144055

Ismail, A., Ghani, J., Ab Rahman, M., Md Deros, B., & Che Haron, C. (2014). Application of Lean Six Sigma tools for cycle time reduction in manufacturing: Case study in biopharmaceutical industry. *Arabian Journal for Science and Engineering, 39,* 1449-1463. doi:10.1007/s13369-013-0678-y

Ismyrlis, V., & Moschidis, O. (2013). Six Sigma's critical success factors and toolbox. *International Journal of Lean Six Sigma, 4*, 108-17. doi:10.1108/20401461311319310

Jack, K., & Wibberley, C. (2014). The meaning of emotion work to student nurses: A Heideggerian analysis. *International Journal of Nursing Studies, 51,* 900-907. doi:10.1016/j.ijnurstu.2013.10.009

Jacob, S. A., & Furgerson, S. P. (2012). Writing interview protocols and conducting interviews: Tips for students new to the field of qualitative research. *Qualitative Report, 17*, 1-10. Retrieved from http://www.nova.edu

James, A., Taylor, B., & Francis, K. (2014). Researching with young people as participants: Issues in recruitment. *Contemporary Nurse*, *47*, 36-41. doi:10.5172/conu.2014.47.1-2.36

James, K. K., & Bakuwa, R. (2013). Value of intellectual capital on corporate performance: An African experience. *Australian Journal of Business and Management Research, 2*, 8-19. Retrieved from http://www.ajbmr.com

Jaoua, F., & Radouche, T. (2014). The moderating role of leader skills on the relationship between strategic management and global performance: An empirical study. *International Business Research, 7*, 59-72. doi:10.5539/ibr.v7n8p59

Jarrett, P. (2014). Attitudes of student midwives caring for women with perinatal mental health problems. *British Journal of Midwifery, 22*, 718-724. doi:10.12968/bjom.2014.22.10.718

Jayaraman. R. (2013). Impact of TQM and business excellence on organisational excellence. *Drishtikon: A Management Journal, 4*, 26-45. Retrieved from http://www.publishingindia.com

Jeffers, S. (2014). Nurse faculty perceptions of end-of-life education in the clinical setting: A phenomenological perspective. *Nurse Education in Practice, 14*, 455-460. doi:10.1016/j.nepr.2014.03.009

Jones, S. (2014). Embracing research in nursing practice. *British Journal of Nursing, 23*, 994-997. doi:10.12968/bjon.2014.23.18.994

Junehag, L., Asplund, K., & Svedlund, M. (2014). A qualitative study: Perceptions of the psychosocial consequences and access to support after an acute myocardial infarction. *Intensive and Critical Care Nursing, 30*, 22-30. doi:10.1016/j.iccn.2013.07.002

Jung-Lang, C. (2013). Linking Six Sigma to business strategy: An empirical study in Taiwan. *Measuring Business Excellence, 17*, 22-32. doi:10.1108/13683041311311347

Kaczynski, D., Salmona, M., & Smith, T. (2014). Qualitative research in finance. *Australian Journal of Management, 39*, 127-135. doi:10.1177/0312896212469611

Kandola, D., Banner, D., O'Keefe-McCarthy, S., & Jassal, D. (2014). Sampling methods in cardiovascular nursing research: An overview. *Canadian Journal of*

Cardiovascular Nursing, 24, 15-18. Retrieved from http://www.cardiovascularnurse.com

Karim, A., & Arif-Uz-Zaman, K. (2013). A methodology for effective implementation of Lean strategies and its performance evaluation in manufacturing organizations. *Business Process Management Journal, 19,* 169-196. doi:10.1108/14637151311294912

Kash, B. A., Spaulding, A., Johnson, C., E., Gamm, & Hulefeld. (2014). Success factors for strategic change initiatives: A qualitative study of healthcare administrators' perspectives. *Journal of Healthcare Management, 59,* 65-81. Retrieved from http://www.ache.org

Kashani, A. H., Sheibat Al-Hamdi, S. A., & Keikha, F. (2015). Study on effective factors in using Six Sigma projects in Saipa Co. *European Online Journal of Natural and Social Sciences, 4,* 99-109. Retrieved from http://european-science.com

Kayama, M., Gregg, M. F., Asahara, K., Yamamoto-Mitani, N., Okuma, K. Ohta, K., & Kinoshita, Y. (2013). Mentoring doctoral students for qualitative research: Interviews with experienced nursing faculty in japan. *Journal of Nursing Education, 52,* 283-289. doi:10.3928/01484834-20130320-02

Kehoe, R. R., & Wright, P. M. (2013). The impact of high performance human resource practices on employees' attitudes and behaviors. *Journal of Management, 39,* 366-391. doi:10.1177/0149206310365901.

Kelly, J., & McAllister, M. (2013). Lessons students and new graduates could teach: A phenomenological study that reveals insights on the essence of building a

supportive learning culture through preceptorship. *Contemporary Nurse, 44*, 170-177. doi:10.5172/conu.2013.44.2.170

Kemparaj, U., & Chavan, S. (2013). Qualitative research: A brief description. *Indian Journal of Medical Sciences, 67*, 89-98. doi:10.4103/0019-5359.121127

Khomba, J. K. (2013). Value of intellectual capital on corporate performance: An African experience. *Australian Journal of Business and Management Research, 2*, 08-19. Retrieved from http://www.ajbmr.com

Khuong, M. N., & Hoang, D. T. (2015). The effects of leadership styles on employee motivation in auditing companies in Ho Chi Minh City, Vietnam. *International Journal of Trade, Economics and Finance, 6*, 210-217. doi:10.7763/IJTEF.2015.V6.471

Killawi, A., Khidir, A., Elnashar, M., Abdelrahim, H., Hammoud, M., Elliott, H., ... Fetters, M. D. (2014). Procedures of recruiting, obtaining informed consent, and compensating research participants in Qatar: Findings from a qualitative investigation. *BMC Medical Ethics, 15*(1), 1-23. doi:10.1186/1472-6939-15-9

Kirkwood, A., & Price, L. (2013). Examining some assumptions and limitations of research on the effects of emerging technologies for teaching and learning in higher education. *British Journal of Educational Technology*, *44*, 536-543. doi:10.1111/bjet.12049

Klinke, M. E., Hafsteinsdóttir, T. B., Thorsteinsson, B., & Jonsdottir, H. (2014). Living at home with eating difficulties following stroke: A phenomenological study of

younger people's experiences. *Journal of Clinical Nursing*, *23*, 250-260. doi:10.1111/jocn.12401

Knapp, S. (2015). Lean Six Sigma implementation and organizational culture. *International Journal of Health Care Quality Assurance*, *28*, 855-863. doi:10.1108/IJHCQA-06-2015-0079

Koay, B. H., & Sorooshian, S. (2013). Study on impact of Lean Six Sigma. *Journal of Management and Science*, *3*, 91-96. Retrieved from http://www.dainamicg.com

Koch, L. C., Niesz, T., & McCarthy, H. (2014). Understanding and reporting qualitative research: An analytical review and recommendations for submitting authors. *Rehabilitation Counseling Bulletin, 57*, 131-143. doi:10.1177/0034355213502549

Koelsch, L. E. (2013). Reconceptualizing the member check interview. *International Journal of Qualitative Methods*, *12*, 168-179. Retrieved from http://www.ualberta.ca

Kohlbacher, M. (2013). The impact of dynamic capabilities through continuous improvement on innovation: The role of business process orientation. *Knowledge and Process Management, 20*, 71-76. doi:10.1002/kpm.1405

Kokkranikal, J., Antony, J., Kosgi, H., & Losekoot, E. (2013). Barriers and challenges in the application of Six Sigma in the hospitality industry: Some observations and findings. *International Journal of Productivity and Performance Management*, *62*, 317-322. doi:10.1108/17410401311309203

Koller, D., Khan, N., & Barrett, S. (2015). Pediatric perspectives on diabetes self-care: A process of achieving acceptance. *Qualitative Health Research, 25,* 264-275. doi:10.1177/1049732314551057

Kornfeld, B., Kara, S. (2013). Selection of Lean and Six Sigma projects in industry. *International Journal of Lean Six Sigma,* 4, 4-16. doi:10.1108/20401461311310472

Kotter, J. P., & J. L. Heskett. (1992). *Corporate Culture and Performance*. New York, NY: Free Press.

Kovach, J. V., & Fredendall, L. D. (2013). The influence of continuous improvement practices on learning: An empirical study. *Quality Management Journal, 20,* 6-20. Retrieved from http://www.asq.org

Kovacs, Z. (2015). Process improvement in the banking sector. *Journal of Securities Operations and Custody, 8,* 56-64. Retrieved from http://www.henrystewart.com

Krueger, D. C., Parast, M. M., & Adams, S. (2014). Six Sigma implementation: A qualitative case study using grounded theory. *Production Planning and Control , 25,* 873–889. doi:10.1080/09537287.2013.771414

Lam, M., O'Donnell, M., & Robertson, D. (2015). Achieving employee commitment for continuous improvement initiatives. *International Journal of Operations and Production Management, 35,* 201-215. doi:10.1108/IJOPM-03-2013-0134

Lambert, M. D., Velez, J. J., & Elliott, K. M. (2014). What are the teachers' experiences when implementing the curriculum for agricultural science education? *Journal of Agricultural Education, 55,* 100-115. doi:10.5032/jae.2014.04100

Lameijer, B. A., Veen, D. T. J., Does, R. J., & de Mast, J. (2016). Perceptions of Lean Six Sigma: A multiple case study in the financial services industry. *The Quality Management Journal, 23,* 29-56. Retrieved from http://www.asq.org

Lange, M. M., Rogers, W., & Dodds, S. (2013). Vulnerability in research ethics: A way forward. *Bioethics, 27,* 333-340. doi:10.1111/bioe.12032

Laosirihongthong, T., Prajogo, D. I., & Adebanjo, D. (2014). The relationships between firm's strategy, resources and innovation performance: Resources-based view perspective. *Production Planning and Control, 25,* 1231-1246. doi:10.1080/09537287.2013.819593

Laschinger, H. K., Wong, C. A., Cummings, G. G., & Grau, A. L. (2014). Resonant leadership and workplace empowerment: The value of positive organizational cultures in reducing workplace incivility. *Nursing Economics, 32,* 5-15. Retrieved from http://www.ajj.com/jpi

Laureani, A., Brady, M., & Antony, J. (2013). Applications of Lean Six Sigma in an Irish hospital. *Leadership in Health Services, 26,* 322-337. doi:10.1108/LHS-01-2012-0002

Lavelle, E., Vuk, J., & Barber, C. (2013). Twelve tips for getting started using mixed methods in medical education research. *Medical Teacher, 35,* 272-276. doi:10.3109/0142159X.2013.759645

Lawrence, J., & Tar, U. (2013). The use of grounded theory technique as a practical tool for qualitative data collection and analysis. *Electronic Journal of Business Research Methods, 11,* 29-40. Retrieved from http://www.ejbrm.com

Lee, C. S., McNeill, N. J., Douglas, E. P., Koro-Ljungberg, M. E., & Therriault, D. J. (2013). Indispensable resource?: A phenomenological study of textbook use in engineering problem solving. *Journal of Engineering Education, 102,* 269-288. doi:10.1002/jee.20011

Lee, K-L., Tai, C-T., & Sheen, G-J. (2013). Using LSS to improve the efficiency and quality of a refund process in a logistics center. *International Journal of Lean Six Sigma, 4,* 409-424. doi:10.1108/IJLSS-04-2013-0023

Leech, N. L., & Onwuegbuzie, A. J. (2011). Beyond constant comparison qualitative data analysis: Using NVivo. *School Psychology Quarterly, 26,* 70-84. doi:10.1037/a0022711

Lertwattanapongchai, S., & Swierczek, W. F. (2014). Assessing the change process of Lean Six Sigma: A case analysis. *International Journal of Lean Six Sigma, 5,* 423-443. doi:10.1108/IJLSS-07-2013-0040

Li, J., Westbrook, J., Callen, J., Georgiou, A., & Braithwaite, J. (2013). The impact of nurse practitioners on care delivery in the emergency department: A multiple perspectives qualitative study. *BMC Health Services Research, 13*(356), 1-8. doi:10.1186/1472-6963-13-356

Liberatore, M. J. (2013). Six Sigma in healthcare delivery. *International Journal of Health Care Quality Assurance, 26,* 601-26. doi:10.1108/IJHCQA-09-2011-0054

Librelato, T. P., Lacerda, D. P., Rodrigues, L. H., & Veit, D. R. (2014). A process improvement approach based on the value stream mapping and the theory of

constraints thinking process. *Business Process Management Journal, 20*, 922-949. doi:10.1108/BPMJ-07-2013-0098

Lim, K. K. (2014). Impact of hospital mergers on staff job satisfaction: A quantitative study. *Human Resources for Health, 12*, 84-104. doi:10.1186/1478-4491-12-70

Lin, C., Chi, Y., & Wang, C. (2012). Improvement strategies for logistics management: TOC approach. *Journal of Accounting, Finance and Management Strategy*, *7*, 25-52. Retrieved from http://performancesforum.org

Lin, C. Chu-hua, K., & Kang-Wei, C. (2013). Identifying critical enablers and pathways to high performance supply chain quality management. *International Journal of Operations and Production Management*, *33*, 347-370. doi:10.1108/01443571311300818

Lincoln, Y. S. & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills: CA: Sage.

Ljungholm, D. P. (2015). The practice of performance management in public sector organizations. *Geopolitics, History and International Relations, 7*, 190-196. Retrieved from http://www.addletonacademicpublishers.com

Loeppenthin, K., Esbensen, B., Ostergaard, M., Jennum, P., Thomsen, T., & Midtgaard, J. (2014). Physical activity maintenance in patients with rheumatoid arthritis: A qualitative study. *Clinical Rehabilitation*, *28*, 289-299. doi:10.1177/0269215513501526

Longenecker, C. O., Longenecker, P. D., & Gering, J. T. (2014). Why hospital improvement efforts fail: A view from the front line. *Journal of Healthcare Management, 59*, 147-57. Retrieved https://ache.org

Lorden, A. L., Zhang, Y., Lin, S-H., & Cote, M. J. (2014). Measure is of success: The role of human factors in lean implementation in healthcare. *The Quality Management Journal, 21*, 26-37. Retrieved from http://www.asq.org

Loshali, S., & Krishnan, V. R. (2013). Strategic human resource management and firm performance: Mediating role of transformational leadership. *Journal of Strategic Human Resource Management, 2*, 9-19. Retrieved from http://www.publishingindia.com/jshrm

Losonci, D., & Demeter, K. (2013). Lean production and business performance: International empirical results. *Competitiveness Review, 23*, 218-233. doi:10.1108/10595421311319816

Lotz, J. D., Jox, R. J., Borasio, G. D., & Fuhrer, M. (2015). Pediatric advance care planning from the perspective of health care professionals: A qualitative interview study. *Palliative Medicine, 29*, 212-222. doi:10.1177/0269216314552091

Low, L. L., Tong, S. F., & Low, W. Y. (2016). Selection of treatment strategies among patients with Type 2 Diabetes Mellitus in Malaysia: A grounded theory approach. *PLoS One, 11*(1), 1-15. doi:10.1371/journal.pone.0147127

Lutwama, G. W., Roos, J. H., & Dolamo, B. L. (2013). Assessing the implementation of performance management of health care workers in Uganda. *BMC Health Services Research, 13*, 355-366. doi:10.1186/1472-6963-13-355

Lysova, E. I., Richardson, J., Khapova, S. N., & Jansen, P. G. (2015). Change-supportive employee behavior: A career identity explanation. *Career Development International, 20*, 38-62. doi:10.1108/CDI-03-2014-0042

Madera, J. M. (2013). Facial stigmas in dyadic selection interviews: Affective and behavioral reactions toward a stigmatized applicant. *Journal of Hospitality and Tourism Research, 20,* 1-21. doi:10.1177/1096348013503996

Magasi, S., Ryan, G., Revicki, D., Lenderking, W., Hays, R. D., Brod, M., … Cella, D. (2012). Content validity of patient-reported outcome measures: Perspectives from a PROMIS meeting. *Quality of Life Research, 21,* 739-46. doi:10.1007/s11136-011-9990-8

Maheshwari, S., & Vohra, V. (2015). Identifying critical HR practices impacting employee perception and commitment during organizational change. *Journal of Organizational Change Management, 28,* 872-894. Retrieved from http://www.emeraldinsight.com

Maitland, C., Stratton, G., Foster, S., Braham, R., & Rosenberg, M. (2014). The dynamic family home: A qualitative exploration of physical environmental influences on children's sedentary behaviour and physical activity within the home space. *International Journal of Behavioral Nutrition and Physical Activity*, *11*(157), 1-22. doi:10.1186/s12966-014-0157-1

Malik, S. H. (2013). Relationship between leader behaviors and employees' job satisfaction: A path-goal approach. *Pakistan Journal of Commerce and Social Sciences, 7,* 209-222. Retrieved from http://www.jespk.net

Malik, A., & Blumenfeld, S. (2012). Six Sigma, quality management systems and the development of organisational learning capability. *The International Journal of*

Quality and Reliability Management, 29, 71-91. doi:10.1108/02656711211190882

Malone, H., Nicholl, H., & Tracey, C. (2014). Awareness and minimisation of systematic bias in research. *British Journal of Nursing*, *23*, 279-282. doi:10.12968/bjon.2014.23.5.279

Mangioni, V., & McKerchar, M. (2013). Strengthening the validity and reliability of the focus group as a method in tax research. *eJournal of Tax Research, 11*, 176-190. Retrieved from http://www.asb.unsw.edu.au

Manoharan, A., Melitski, J. & Bromberg, D. (2015). State strategic information system plans. *International Journal of Public Sector Management*, 28, 240-253. doi:10.1108/IJPSM-09-2014-0124

Manville, G., Greatbanks, R., Krishnasamy, R., & Parker, D. W. (2012). Critical success factors for Lean Six Sigma programmes: A view from middle management. *International Journal of Quality and Reliability Management*, *29*, 7-20. doi:10.1108/02656711211190846

Marchand, A., Haines, V. Y., & Dextras-Gauthier, J. (2013). Quantitative analysis of organizational culture in occupational health research: A theory-based validation in 30 workplaces of the organizational culture profile instrument. *BMC Public Health*, *13*(1), 1-11. doi:10.1186/1471-2458-13-443

Marques, P., Requeijo, J., Saraiva, P., & Frazão-Guerreiro, F. (2013). Integrating Six Sigma with ISO 9001. *International Journal of Lean Six Sigma, 4*, 36-59. doi:10.1108/20401461311310508

Marshall, B., Cardon, P., Poddar, A., & Fontenot, R. (2013). Does sample size matter in qualitative research?: A review of qualitative interviews in is research**.** *Journal of Computer Information Systems*, *54*, 11-22. Retrieved from http://www.iacis.org

Marshall, C., & Rossman, G. (2016). *Designing qualitative research* (6th ed.). Thousand Oaks: Sage.

Marshall, J., & Friedman, H. L. (2012). Human verses computer-aided qualitative data analysis ratings: Spiritual content in dream reports and diary entries. *The Humanistic Psychologist*, *40*, 329-342. doi:10.1080/08873267.2012.724255

Martinsen, B., Norlyk, A., & Lomborg, K. (2015). Experiences of intermediate care among older people: A phenomenological study. *British Journal of Community Nursing*, *20*, 74-79. doi:10.12968/bjcn.2015.20.2.74

Masue, O. S., Swai, I. L., & Anasel, M. G. (2013). The qualitative-quantitative "disparities" in social science research: What does qualitative comparative analysis (QCA) brings in to bridge the gap? *Asian Social Science, 9,* 211-221. doi:10.5539/ass.v9n10p211

Mate D. (2014). Human capital, unions and productivity in a labour-skilled sectoral approach. *Society and Economy*, *36*, 369–385. doi:10.1556/SocEc.36.2014.3.3

Mathu, K. (2014). Applying the theory of constraints in the South African coal supply chain. *Mediterranean Journal of Social Sciences*, *5*, 131-141. Retrieved from http://www.mcser.org

Mauri, M., & Romero, I. (2013). Strategic action for a sustained leadership of the Cuban biotechnology industry. *Biotecnologia Applicada, 30*, 305-310. Retrieved from http://scielo.sld.cu

McDonagh, K. J., Bobrowski, P., Hoss, M. A. K., Paris, N. M., & Schulte, M. (2014). The leadership gap: Ensuring effective healthcare leadership requires inclusion of women at the top. *Open Journal of Leadership, 3*, 20-29. doi:10.4236/ojl.2014.32003

McFadden, K. L., Lee, J. Y., Gowen, C. R., & Sharp, B. M. (2014). Linking quality improvement practices to knowledge management capabilities. *Quality Management Journal, 21*, 42-58. Retrieved from http://www.asq.org

McGreevy, J. (2016). Implementing culture change in long-term dementia care settings. *Nursing Standard, 30*, 44. doi:10.7748/ns.30.19.44.s43

McInnes, E., Middleton, S., Gardner, G., Haines, M., Haertsch, M., Paul, C. L., & Castaldi, P. (2012). A qualitative study of stakeholder views of the conditions for and outcomes of successful clinical networks. *BMC Health Services Research, 12*, 49-60. doi:10.1186/1472-6963-12-49

Mealer, M., & Jones, J. (2014). Methodological and ethical issues related to qualitative telephone interviews on sensitive topics. *Nurse Researcher, 21*, 32-37. doi:10.7748/nr2014.03.21.4.32.e1229

Mehmood, S., Qadeer, F., & Ahmed, A. (2014). Relationship between TQM dimensions and organizational performance. *Pakistan Journal of Commerce and Social Sciences, 8*, 662-679. Retrieved from http://www.jespk.net

Mehta, S., Maheshwari, G. C., & Sharma, S. K. (2014). Role of leadership in leading successful change: An empirical study. *Journal Contemporary Management Research*, *8*, 1- 22. Retriever from http://www.psgim.ac

Mensah, W., & George, B. P. (2015). Performance management in the public sector: An action-research based case study in Ghana. *Journal of Applied Economics and Business Research, 5*, 97-111. Retrieved from http://www.aebrjournal.org

Merat, A., & Bo, D. (2013). Strategic analysis of knowledge firms: The links between knowledge management and leadership. *Journal of Knowledge Management*, *17*, 3-15. doi:10.1108/13673271311300697

Meybodi, M. Z. (2013). Alignment of strategic benchmarking performance measures: A Lean manufacturing perspective. *Advances in Competitiveness Research, 21*, 14-28. Retrieved from http://www.journalseeker.researchbib.com

Meyer, E. G., Hall-Clark, B. N., Hamaoka, D., & Peterson, A. L. (2015). Assessment of military cultural competence: A pilot study. *Academic Psychiatry*, *39*, 382-388. doi:10.1007/s40596-015-0328-7

Mikene, S., Gaizauskaite, I., & Valaviciene, N. (2013). Qualitative interviewing: Field-work realities. *Socialinis Darbas, 12*, 49-61. Retrieved from http://www.mruni.eu

Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis* (2nd ed.). Thousand Oaks, CA: Sage.

Miller, S., & Dorman, S. (2014). Resuscitation decisions for patients dying in the community: A qualitative interview study of general practitioner perspectives. *Palliative Medicine*, *28*, 1053-1061. doi:10.1177/0269216314531521

Mishra, S., & Palo, S. (2014). Applying theory of constraints to the Indian Administrative Services. *Management and Labour Studies*, *39*, 187–207. doi:10.1177/0258042X14558186

Mitchell, K. R., & Wellings, K. (2013). Measuring sexual function in community surveys: Development of a conceptual framework. *Journal of Sex Research, 50*, 17-28. doi:10.1080/00224499.2011.621038

Mitchell, M. L., & Jolley, J. M. (2010). *Research design explained* (7th ed.). Boston, MA: Wadsworth.

Mitchell, R., Obeidat, S., & Bray, M. (2013). The effect of strategic human resource management on organizational performance: The mediating role of high-performance human resource practices. *Human Resource Management, 52*, 899-921. doi:10.1002/hrm.21587

Mohammed, K. A., Othman, J., & Silva, J. L. D. (2012). Social demographic factors that influence transformational leadership styles among top management in selected organizations in Malaysia. *Asian Social Science*, *8*, 51-58. doi:10.5539/ass.v8n13p51

Mokhtari-Nouri, J., Ebadi, A., Alhani, F., & Rejeh, N. (2014). Experiences of role model instructors and nursing students about facilitator factors of role-modeling process: A qualitative research. *Iranian Journal of Nursing and Midwifery Research, 19*, 248-254. Retrieved from http://www.medknow.com

Moll, S. (2012). Navigating political minefields: Partnerships in organizational case study research. *Work, 43*, 5-12. doi:10.3233/wor-2012-1442

Moore, J., & Prentice, D. (2013). Collaboration among nurse practitioners and registered nurses in outpatient oncology settings in Canada. *Journal of Advanced Nursing, 69*, 1574-1583. doi:10.1111/jan.12017

Moreira, M. R., Castano, J. D., Sousa, P. S., & Meneses, R. F. (2014). Applying Goldratt's framework to the banking system. *Periodica Polytechnica.Social and Management Sciences, 22*, 107-117. doi:10.3311/PPso.7673

Mosalanejad, L., Parandavar, N., Gholami, M., & Abdollahifard, S. (2014). Increasing and decreasing factors of hope in infertile women with failure in infertility treatment: A phenomenology study. *Iranian Journal of Reproductive Medicine, 12*, 117-124. Retrieved from http://www.reproductivemedicine.com

Moss, H., & O'Neill, D. (2013). The aesthetic and cultural interests of patients attending an acute hospital: A phenomenological study. *Journal of Advanced Nursing, 70*, 121–129. doi:10.1111/jan.12175

Moynihan, G. P. (2014). Application of the theory of constraints for capacity requirements analysis: A case study. *International Journal of Applied Science and Technology, 4*, 1-9. Retrieved from http://www.ijastnet.com

Mulki, J.P., Caemmerer, B., & Heggde, G.S. (2015). Leadership style, salesperson's work effort and job performance: The influence of power distance. *Journal of Personal Selling and Sales Management, 35*, 3-22. doi:10.1080/08853134.2014.958157

Murphy, B., Dionigi, R. A., & Litchfield, C. (2014). Physical education and female participation: A case study of teachers' perspectives and strategies. *Issues in Educational Research, 24,* 241-259. Retrieved from http://www.iier.org.au

Murphy, P. J., Cooke, R. A., & Lopez, Y. (2013). Firm culture and performance: Intensity's effects and limits. *Management Decision, 51,* 661-679. doi:10.1108/00251741311309715

Mutula, S. M. (2014). Managing research data in the information society. *African Journal of Library, Archives and Information Science, 24,* 119-121. Retrieved from http://www.inasp.info

Nasution, A. P., Mahargiono, P. B., & Soesatyo, Y. (2016). Effect of leadership styles, organizational climate and ethos of work on employee productivity (PT. HP Metals Indonesia the powder coating). *International Journal of Business and Management, 11*, 262. doi:10.5539/ijbm.v11n2p262

Nawanir, G., Lim, K. T., & Siti, N. O. (2013). Impact of Lean practices on operations performance and business performance. *Journal of Manufacturing Technology Management, 24*, 1019-1050. doi:10.1108/JMTM-03-2012-0027

Ndaita, P. M., Gachie, T., & Kiveu, C. W. (2015). The implementation of Lean Six Sigma concept at National Bank of Kenya operation division. *TQM Journal*, 27, 683. doi:10.1108/TQM-06-2015-0078

Neufeld, N. J., Hoyer, E. H., Cabahug, P., Gonzalez-Fernandez, M., Mehta, M., Walker, N. C., … Powers, R. L. (2013). A Lean Six Sigma quality improvement project to

increase discharge paperwork completeness for admission to a comprehensive integrated inpatient rehabilitation program. *American Journal of Medical Quality, 28,* 301-307. doi:10.1177/1062860612470486

Newington, L., & Metcalfe, A. (2014). Factors influencing recruitment to research: Qualitative study of the experiences and perceptions of research teams. *BMC Medical Research Methodology, 14*(11), 1-20. doi:10.1186/1471-2288-14-10

Newman, I., & Covrig, D. M. (2013). Building consistency between title, problem statement, purpose, and research questions to improve the quality of research plans and reports. *New Horizons in Adult Education and Human Resource Development, 25,* 70-79. doi:10.1002/nha.20009

Ngambi, M. T., & Nkemkiafu, A. G. (2015). The impact of total quality management on firm's organizational performance. *American Journal of Management Vol, 15,* 69-85. Retrieved from http://www.na-businesspress.com

Nilsson, K., & Sandoff, M. (2015). Leading processes of patient care and treatment in hierarchical healthcare organizations in Sweden: Process managers' experiences. *Leadership in Health Services, 28,* 135-148. doi:10.1108/LHS-04-2014-0043

Nilsson, L., & Durkin, J. (2014). Assessment of learning powered mobility use: Applying grounded theory to occupational performance. J*ournal of Rehabilitation Research and Development, 51,* 963-973. doi:10.1682/JRRD.2013.11.0237

O'Cathain, A., Goode, J., Drabble, S. J., Thomas, K. J., Rudolph, A., & Hewison, J. (2014). Getting added value from using qualitative research with randomized

controlled trials: A qualitative interview study. *Trials, 15*(1), 1-20. doi:10.1186/1745-6215-15-215

O'Connell, K. M., Littleton-Kearney, M. T., Bridges, E., & Bibb, S. C. (2012). Evaluating the joint theater trauma registry as a data source to benchmark casualty care. *Military Medicine, 177,* 546-52. doi:10.7205/MILMED-D-11-00422

Odegard, A., & Bjorkly, S. (2012). A mixed method approach to clarify the construct validity of interprofessional collaboration: An empirical research illustration. *Journal of Interprofessional Care, 26*, 283-288. doi:10.3109/13561820.2011.652784

Oglethorpe, D., & Heron, G. (2013). Testing the theory of constraints in UK local food supply chains. *International Journal of Operations and Production Management, 33*, 1346-1367. doi:10.1108/IJOPM-05-2011-0192

Olausson, S., Lindahl, B., & Ekebergh, M. (2013). A phenomenological study of experiences of being cared for in a critical care setting: The meanings of the patient room as a place of care. *Intensive and Critical Care Nursing, 29*, 234-243. doi:10.1016/j.iccn.2013.02.002

O'Reilly, K., Paper, D., & Marx, S. (2012). Demystifying grounded theory for business research. *Organizational Research Methods*, *15*, 247–262. doi:10.1177/1094428111434559

O'Reilly, M. & Parker, N. (2013). Unsatisfactory saturation: A critical exploration of the notion of saturated sample sizes in qualitative research. *Qualitative Research, 13,190-197.* Retrieved from http://www.uk.sagepub.com

Oroya, A., Stromskag, K. E., & Gjengedala, E. (2013). Approaching families on the subject of organ donation: A phenomenological study of the experience of healthcare professionals. *Intensive and Critical Care Nursing*, *29*, 202-211. doi:10.1016/j.iccn.2013.02.003

Ovidiu-Iliuta, D. (2014). The link between organizational culture and performance management practices: A case of IT companies from Romania. *Annals of the University of Oradea, Economic Science Series*, *23*, 1156-1163. Retrieved from http://webhost.uoradea.ro/editura

Oyewobi, L. O., Windapo, A. O., & Rotimi, J. O. B. (2015). Measuring strategic performance in construction companies: A proposed integrated model. *Journal of Facilities Management, 13*, 109-132. doi:10.1108/JFM-08-2013-0042

Pakdil, F., & Leonard, K. M. (2015). The effect of organizational culture on implementing and sustaining lean processes. *Journal of Manufacturing Technology Management, 26*, 725-743. doi:10.1108/JMTM-08-2013-0112

Parkes, A. (2015). Lean management genesis. *Management*, *19*, 106-121. doi:10.1515/manment-2015-0017

Patrice, P., Glenda, P., & Jonathan, W. (2014). An exploratory quantitative study comparing and correlating parental factors with environmental science achievement for Black American and Black Caribbean students in a Mid-Atlantic State. *The Journal of Negro Education*, 83, 49-60. doi:10.7709/jnegroeducation.83.1.0049.

Patrick, D. L., Burke, L. B., Gwaltney, C. J., Leidy, N. K., Martin, M. L., Molsen, E., & Ring, L. (2011). Content validity - establishing and reporting the evidence in newly developed patient-reported outcomes (PRO) instruments for medical product evaluation: ISPOR PRO good research practices task force report: Part 1--eliciting concepts for a new PRO instrument. *Value in Health: The Journal of the International Society for Pharmacoeconomics and Outcomes Research, 14*, 967-977. doi:10.1016/j.jval.2011.06.014

Paulo Augusto, C. M., & Marly Monteiro, D. C. (2014). Benchmarking Six Sigma implementation in services companies operating in an emerging economy. *Benchmarking, 21*, 62-76. doi:10.1108/BIJ-03-2012-0014

Pederson, A. E., Hack, T.F., McClemont, S. E., & Taylor-Brown, J. (2013). An exploration of the patient navigator role: Perspectives of younger women with breast cancer. *Oncology Nursing Forum*, *41*, 77–88. doi:10.1188/14.ONF.77-88

Pedro, S. F., Shamsuzzoha, A., Toscano, C., & Cunha, P. (2012). Framework for performance measurement and management in a collaborative business environment. *International Journal of Productivity and Performance Management, 61*, 672-690. doi:10.1108/17410401211249210

Peng, H., & Pierce, J. (2015). Job-and organization-based psychological ownership: Relationship and outcomes. *Journal of Managerial Psychology, 30*, 151. doi:10.1108/JMP-07-2012-0201

Penman-Aguilar, A. F. (2014). A Novel approach to mixing qualitative and quantitative methods in HIV and STI prevention research. *AIDS Education and Prevention, 26*, 95-108. doi:10.1521/aeap.2014.26.2.95

Pereira, H. (2012). Rigour in phenomenological research: Reflections of a novice nurse researcher. *Nurse Researcher, 19*, 16-19. doi:10.7748/nr2012.04.19.3.16.c9054

Perera, P., & Perera, H. (2013). Developing a performance measurement system for apparel sector Lean manufacturing organizations in Sri Lanka. *Vision*, *17*, 293-301. doi:10.1177/0972262913505371

Pettigrew, A. M. (2013). The conduct of qualitative research in organizational settings. *Corporate Governance: An International Review, 21*, 123-126. doi:10.1111/j.1467-8683.2012.00925.x.

Peyrovi, H., Raiesdana, N., & Mehrdad, N. (2014). Living with a heart transplant: A phenomenological study. *Progress in Transplantation*, *24*, 234-241. doi:10.7182/pit2014966

Pfaff, K. A., Baxter, P. E., Jack, S. M., & Ploeg, J. (2014). Exploring new graduate nurse confidence in interprofessional collaboration: A mixed methods study. *International Journal of Nursing Studies, 51*, 1142-1152. doi:10.1016/j.ijnurstu.2014.01.001

Pinedo-Cuenca, R., Pablo, G. O., & Setijono, D. (2012). Linking Six Sigma's critical success/hindering factors and organizational change (development). *International Journal of Lean Six Sigma, 3*, 284-298. doi:10.1108/20401461211284752

Ploom, K., & Haldma, T. (2013). Balanced performance management in the public education system. *Baltic Journal of Management, 8*, 183-207. doi:10.1108/17465261311310018

Polito, T., & Capen, M. M. (2014). Theory of constraints thinking processes: A copy shop case application**.** *Journal of American Academy of Business, Cambridge, 20*, 33-39. Retrieved from http://www.jaabc.com

Pollack, J., & Pollack, R. (2015). Using Kotter's eight stage process to manage an organisational change program: Presentation and practice. *Systemic Practice and Action Research, 28*, 51-66. doi:10.1007/s11213-014-9317-0

Ponsignon, F., Maull, R. S., & Smart, P. A. (2014). Four archetypes of process improvement: A Q-methodological study. *International Journal of Production Research*, *52*, 4507-4525. doi:10.1080/00207543.2013.867086

Popli, S., & Rizvi, I.A. (2015). Exploring the relationship between service orientation, employee engagement and perceived leadership style: A study of managers in the private sector organizations in India. *Journal of Services Marketing*, *29*, 59-70. doi:10.1108/JSM-06-2013-0151

Porter, M. E. (1980). *Competitive strategy*. New York, NY: Free Press.

Powell, I. (2013). Can you see me? Experiences of nurses working night shift in Australian regional hospitals: A qualitative case study. *Journal of Advanced Nursin*g, *69*, 2172-2184. doi:10.1111/jan.12079

Powell, M. B., Hughes-Scholes, C. H., & Sharman, S. J. (2012). Skill in interviewing reduces confirmation bias. *Journal of Investigative Psychology and Offender Profiling, 9*, 126-134. doi:10.1002/jip.1357

Powell, P. A., Overton, P. G., & Simpson, J. (2014). The revolting self: An interpretative phenomenological analysis of the experience of self-disgust in females with depressive symptoms. *Journal of Clinical Psychology, 70*, 562-578. doi:10.1002/jclp.22049

Pradhan, S., & Pradhan, R. K. (2015). An empirical investigation of relationship among transformational leadership, affective organizational commitment and contextual performance. *Vision, 19*, 227-235. doi:10.1177/0972262915597089

Prashar, A. (2014). Adoption of Six Sigma DMAIC to reduce cost of poor quality. *International Journal of Productivity and Performance Management, 63*, 103-126. doi:10.1108/IJPPM-01-2013-0018

Pulakanam, V. (2012). Costs and savings of Six Sigma programs: An empirical study. *Quality Management Journal, 19*, 39-54. Retrieved from http://www.asq.org

Qu, S. Q., & Dumay, J. (2011). The qualitative research interview. *Qualitative Research in Accounting and Management, 8*, 238-264. doi:10.1108/11766091111162070

Radosevic, M., Pasula, M., Berber, N., Nebojsa, N., & Nerandzic, B. (2013). Reengineering of supply chain process in production systems - a case study. *Engineering Economics, 24*, 71-80. doi:10.5755/j01.ee.24.1.2544

Raghunath, A., & Jayathirtha, R. V. (2014). Six Sigma implementation by Indian manufacturing SMEs: An empirical study. *Academy of Strategic Management Journal, 13*, 35-55. http://www.alliedacademies.org

Ranjbarfard, M., Aghdasi, M., Albadvi, A., & Hassanzadeh, M. (2013). Identifying knowledge management problems using a process-based method (a case study of process 137). *Business Process Management Journal, 19,* 263-291. doi:10.1108/14637151311308312

Ras, E., & Visser, J. K. (2015). A model for continuous improvement at a South African minerals beneficiation plant. *South African Journal of Industrial Engineering, 26,* 191-206. Retrieved from http://sajie.journals.ac.za

Rees, G. H. (2014). Organisational readiness and Lean thinking implementation: Findings from three emergency department case studies in New Zealand. *Health Services Management Research, 27*, 1-9. doi:10.1177/0951484814532624

Renert, H., Russell-Mayhew, S., & Arthur, N. (2013). Recruiting ethnically diverse participants into qualitative health research: Lessons learned. *The Qualitative Report, 18*(12), 1-13. Retrieved from http://www.nova.edu

Roberge, P., Fournier, L., Brouillet, H., Hudon, C., Houle, J., Provencher, M. D., & Lévesque, J. (2013). Implementing a knowledge application program for anxiety and depression in community-based primary mental health care: A multiple case study research protocol. *Implementation Science, 8,* 26. doi:10.1186/1748-5908-8-26

Roberts, S. H., & Bailey, J. E. (2013). An ethnographic study of the incentives and barriers to lifestyle interventions for people with severe mental illness. *Journal of Advanced Nursing*, *69*, 2514-2524. doi:10.1111/jan.12136

Robertson, J. H., & Thomson, A. M. (2014). A phenomenological study of the effects of clinical negligence litigation on midwives in England: The personal perspective. *Midwifery*, *30*, e121-e130. doi:10.1016/j.midw.2013.12.003

Robinson, O. C. (2014). Sampling in interview-based qualitative research: A theoretical and practical guide. *Qualitative Research in Psychology*, *11*, 25-41. doi:10.1080/14780887.2013.801543

Rohleder, T., Bailey, B., Crum, B., Faber, T., Johnson, B., Montgomery, L., & Pringnitz, R. (2013). Improving a patient appointment call center at Mayo clinic. *International Journal of Health Care Quality Assurance*, *26*, 714-28. doi:10.1108/IJHCQA-11-2011-0068

Rosado, A., Araujo, D., Mesquita, I., Correia, A., Mendes, F., & Guillen, F. (2014). Perceptions of fitness professionals regarding fitness occupations and careers: A phenomenological analysis. *Revista De Psicología Del Deporte*, *23*, 23-31. Retrieved from http://www.redalyc.org

Rosendahl, T., Johan, O., & Revang, O. (2014). Internal communication as value creation in a change process: A case study of Norwegian Statoil. *Journal of Applied Management and Entrepreneurship*, *19*, 101-128. Retrieved from http://www.business.nova.edu

Rubin, H. J., & Rubin, I. S. (2012). *Qualitative interviewing: The art of hearing data* (3rd ed.). Thousand Oaks, CA: Sage.

Russell, L. R. (2013). Identifying complex cultural interactions in the instructional design process: A case study of a cross-border, cross-sector training for innovation program. *Educational Technology Research and Development, 61*, 707-732. doi:10.1007/s11423-013-9291-8

Ryan, A., Hunter, K., Cunningham, K., Williams, J., O'Shea, H., Rooney, P., & Hickey, F. (2013). STEPS: Lean thinking, theory of constraints and identifying bottlenecks in an emergency department. *Irish Medical Journal, 106*, 105-107. Retrieved from http://www.imo.ie

Rynink, K., Roberts-Collins, C., McKenzie-McHarg, K., & Horsch, A. (2014). Mothers' experience of their contact with their stillborn infant: An interpretative phenomenological analysis. *BMC Pregnancy and Childbirth*, *14*(1), 1-19. doi:10.1186/1471-2393-14-203

Sa, Y. (2013). Elements of strategic management process and performance management systems in U.S. federal agencies: Do employee managerial levels matter? *International Journal of Business and Management, 8*, 9, 1-13. Retriever from http://ccsenet.org

Sadan, V. (2014). Mixed methods research: A new approach. *International Journal of Nursing Education*, *6*, 254-260. doi:10.5958/j.0974-9357.6.1.052

Sadat, S., Carter, M. W., & Golden, B. (2013). Theory of constraints for publicly funded health systems. *Health Care Management Science, 16*, 62-74. Retrieved from doi:10.1007/s10729-012-9208-9

Sadikoglu, E., & Olcay, H. (2014). The effects of total quality management practices on performance and the reasons of and the barriers to TQM practices in Turkey. *Advances in Decision Sciences, 2014*, 1-17. doi:10.1155/2014/537605

Sahay, P. (2015). Lean Six Sigma tools in the hiring process. *Strategic HR Review*, *14*, 22-29. doi:10.1108/SHR-06-2014-0040

Sahno, J., Shevtshenko, E., Karaulova, T., & Tahera, K. (2015). Framework for continuous improvement of production processes**.** *Engineering Economics, 26*, 169-180. doi:10.5755/j01.ee.26.2.6969

Salajeghe, S., Nejad, A. S., & Soleimani, S. (2014). Analysis of the role of quality management in creating knowledge management value chain. *International Journal of Academic Research in Business and Social Sciences, 4*, 31-46. Retrieved from http://www.hrmars.com

Sale, M. L., & Sale, S. R. (2013). Theory of constraints as related to improved business unit performance. *Journal of Accounting and Finance*, *13*, 108-114. Retrieved from http://www.na-businesspress.com

Sanders Jones, J., L., & Linderman, K. (2014). Process management, innovation and efficiency performance. *Business Process Management Journal, 20*, 335-358. doi:10.1108/BPMJ-03-2013-0026

Santos-Rodrigues, H., Faria, J., Cranfield, D., & Morais, C. (2013). Intellectual capital and innovation: A case study of a public healthcare organisation in Europe. *Electronic Journal of Knowledge Management, 11*, 361-372. Retrieved from http://www.ejkm.com

Sarti, D. (2014). Leadership styles to engage employees: Evidence from human service organizations in Italy. *Journal of Workplace Learning, 26*, 202-216. doi:10.1108/JWL-09-2013-0066

Schell, W. J., & Kuntz, S. W. (2013). Driving change from the middle: An exploration of the complementary roles and leadership behaviors of clinical nurse leaders and engineers in healthcare process improvement. *Engineering Management Journal, 25*, 33-43. doi:10.1080/10429247.2013.11431993

Self, D. R., Self, T., Matuszek, T., & Schraeder, M. (2015). Improving organizational alignment by enhancing strategic thinking. *Development and Learning in Organizations*, 29, 11-14. doi:10.1108/DLO-08-2013-0053

Shaaban, M. S., & Awni, A. H. (2014). Critical success factors for total productive manufacturing (TPM) deployment at Egyptian FMCG companies. *Journal of Manufacturing Technology Management, 25*, 393-414. doi:10.1108/JMTM-09-2012-0088

Sharma, S., & Chetiya, A. R. (2012). An analysis of critical success factors for Six Sigma implementation. *Asian Journal on Quality, 13*, 294-308. doi:10.1108/15982681211287810

Sharma, V., Dixit, A. R., & Qadri, M. A. (2015). Impact of lean practices on performance measures in context to Indian machine tool industry. *Journal of Manufacturing Technology Management, 26*, 8, 1218-1242. doi:10.1108/JMTM-11-2014-0118

Sheehan, M. (2013). Human resource management and performance: Evidence from small and medium-sized firms. *International Small Business Journal, 1*, 1-26. doi:10.1177/0266242612465454

Shokri, A., Oglethorpe, D., & Nabhani, F. (2014). Evaluating Six Sigma methodology to improve logistical measures of food distribution SMEs. *Journal of Manufacturing Technology Management, 25*, 998-1027. doi:10.1108/JMTM-12-2012-0114

Sigalas, C., & Economou, V. P. (2013). Revisiting the concept of competitive advantage. *Journal of Strategy and Management, 6*, 61-80. doi:10.1108/17554251311296567

Sikdar, A., & Payyazhi, J. (2014). A process model of managing organizational change during business process redesign. *Business Process Management Journal, 20,* 971-998. doi10.1108/BPMJ-02-2013-0020

Sim, K. L., & Chiang, B. (2012). Lean production systems: Resistance, success and plateauing. *Review of Business, 33*, 97-110. Retrieved from http://www.stjohns.edu

Sim, T. F., Hattingh, H. L., Sherriff, J., & Tee, L. G. (2014). Perspectives and attitudes of breastfeeding women using herbal galactagogues during breastfeeding: A qualitative study. *BMC Complementary and Alternative Medicine, 14*, 216-235. doi:10.1186/1472-6882-14216

Sinden, K., Macdermid, J., Buckman, S., Davis, B., Matthews, T., & Viola, C. (2013). A qualitative study on the experiences of female firefighters. *Work, 45*, 97-105. doi:10.3233/WOR-121549

Sinkovics, R. R., & Alfoldi, E. A. (2012). Progressive focusing and trustworthiness in qualitative research. *Management International Review, 52*, 817-845. doi:10.1007/s11575-012-0140-5

Sivakumar, V. M., Devadasan, S. R., & Murugesh, R. (2014). Theory and practice of knowledge managed ISO 9001:2000 supported quality system. *TQM Journal*, *26*, 30-49. doi:10.1108/TQM-10-2011-0063

Skiba, J. M. (2014). A phenomenological study of the barriers and challenges facing insurance fraud investigators. *Journal of Insurance Regulation, 33*, 1d-28d. Retrieved from http://www.naic.org/store_jir.htm

Smith, T. A. (2014). Testing theory and related factors for influencing proficiency in quantitative research. *Academy of Educational Leadership Journal*, *18*, 117-128. Retrieved from http://www.alliedacademies.org

Snelgrove, S. R. (2014). Conducting qualitative longitudinal research using interpretative phenomenological analysis. *Nurse Researcher*, *22*, 20-25. doi:10.7748/nr.22.1.20.e1277

Snowden, A. (2014). Ethics and originality in doctoral research in the UK. *Nurse Researcher*, *21*, 12-15. doi:10.7748/nr.21.6.6.s2

Spiri, W. C., & MacPhee, M. (2013). The meaning of evidence-based management to Brazilian senior nurse leaders. *Journal of Nursing Scholarship, 45*, 265-272. doi:10.1111/jnu.12024

Stacey, A., & Stacey, J. (2012). Integrating sustainable development into research ethics protocols. *Electronic Journal of Business Research Methods, 10*, 54-63. Retrieved from http://www.ejbrm.com

Stanley, M., & Nayar, S. (2014). Methodological rigour: Ensuring quality in occupational therapy qualitative research. *New Zealand Journal of Occupational Therapy, 61*, 6-12. Retrieved from http://www.nzaot.com

Steiber, A., & Alange, S. (2013). A corporate system for continuous innovation: The case of Google Inc. *European Journal of Innovation Management, 16*, 243-264. doi:10.1108/14601061311324566

Stenfors-Hayes, T., Hult, H., & Dahlgren, M. A. (2013). A phenomenographic approach to research in medical education. *Medical Education, 47*, 261-270. doi:10.1111/medu.12101

Stewart, L. F., & Rae, A. M. (2013). Critical care nurses' understanding of the NHS knowledge and skills framework. An interpretative phenomenological analysis. *Nursing in Critical Care, 18*, 23-31. doi:10.1111/j.1478-5153.2012.00524.x

Stierand, M. B., & Dorfler, V. (2012). Reflecting on a phenomenological study of creativity and innovation in haute cuisine. *International Journal of Contemporary Hospitality Management, 24*, 946-957. doi:10.1108/09596111211247254

Stipp, K. F., & Kapp, S. A. (2012). Building organizational knowledge and value: Informed decision making in Kansas children's community-based mental health services. *Community Mental Health Journal, 48,* 1-11. doi:10.1007/s10597-010-9334-0

Stoetzer, U., Bergman, P., Aborg, C., Johansson, G., Ahlberg, G., Parmsund, M., & Svartengren, M. (2014). Organizational factors related to low levels of sickness absence in a representative set of Swedish companies. *Work, 47,* 193-205. doi:10.3233/WOR-2012-1472

Stomski, N. J., Mackintosh, S. F., & Stanley, M. (2014). The experience of acupuncture care from the perspective of people with chronic low back pain: A grounded theory study. *Acupuncture in Medicine, 32,* 333-339. doi:10.1136/acupmed-2013-010477

Stone, L. (2013). Making sense of medically unexplained symptoms in general practice: A grounded theory study. *Mental Health in Family Medicine, 10,* 101-111. Retrieved from http://www.radcliffe-oxford.com

Street, C., T., & Ward, K., W. (2012). Improving validity and reliability in longitudinal case study timelines. *European Journal of Information Systems, 21,* 160-175. doi:10.1057/ejis.2011.53

Stirbu, O. A. M. (2015). Model of change on ITC Romanian SMEs. *Revista De Management Comparat International, 16,* 88-100. http://www.rmci.ase.ro

Suarez-Barraza, M. F., & Miguel-Davila, J. A. (2014). Assessing the design, management and improvement of kaizen projects in local governments. *Business Process Management Journal, 20,* 392-411. doi:10.1108/BPMJ-03-2013-0040

Sugar, W. (2014). Development and formative evaluation of multimedia case studies for instructional design and technology students. *Techtrends, 58,* 36-52. Retrieved from http://www.springer.com

Sutton, C. (2015). The human sigma approach to business improvement in tourism SMEs. *Journal of Small Business and Enterprise Development*, *22*, 302-319. doi:10.1108/JSBED-07-2012-0085

Suwaryo, J., Daryanto, H. K., & Maulana, A. (2015). Organizational culture change and its effect on change readiness through organizational commitment. *Bisnis and Birokrasi, 22,* 68-78. doi:10.20476/jbb.v22i1.5431

Svensson, C., Antony, J., Ba-Essa, M., Bakhsh, M., & Albliwi, S. (2015). A Lean Six Sigma program in higher education. *International Journal of Quality and Reliability Management, 32*, 951. doi:10.1108/IJQRM-09-2014-0141

Swafford, L. G. (2014). Elements and evaluation of qualitative research. *Radiation Therapist, 23,* 90-91. Retrieved from https://www.asrt.org

Talib, F., Rahman, Z., & Qureshi, M. N. (2013). An empirical investigation of relationship between total quality management practices and quality performance in Indian service companies. *The International Journal of Quality and Reliability Management, 30*, 280-318. doi:10.1108/02656711311299845

Tatila, J., Helkio, P., & Holmstrom, J. (2014). Exploring the performance effects of performance measurement system use in maintenance process. *Journal of Quality in Maintenance Engineering, 20,* 377-401. doi:10.1108/JQME-07-2013-0051

Tavakol, S., Dennick, R., & Tavakol, M. (2012). Medical students' understanding of empathy: A phenomenological study. *Medical Education, 46,* 306-316. doi:10.1111/j.1365-2923.2011.04152.x

Tayade, S., & Chavan, V. (2013). Flexibility analysis in business process reengineering with theory of constraint using intelligent dynamic workflow system. *International Journal of Computer Applications, 80,* 32-39. doi:10.5120/13915-1821

Taylor, L. J., & Esan, T. O. (2012). Goldratt's theory applied to the problems associated with the mode of transportation, storage and sale of fresh fruits & vegetables in Nigeria. *Journal of African Research in Business and Technology, 2012,* 1-16. doi:10.5171/2012.862202

Teeratansirikool, L., Siengthai, S., Badir, Y., & Charoenngam, C. (2013). Competitive strategies and firm performance: The mediating role of performance measurement. *International Journal of Productivity and Performance Management, 62,* 168-184. doi:10.1108/17410401311295722

Tembo, A. C., Parker, V., & Higgins, I. (2013). The experience of sleep deprivation in intensive care patients: Findings from a larger hermeneutic phenomenological study. *Intensive and Critical Care Nursing, 29,* 310-316. doi:10.1016/j.iccn.2013.05.003

Thomas, S. (2012). Narrative inquiry: Embracing the possibilities. *Qualitative Research Journal*, *12*, 206-221. doi.10.1108/14439881211248356

Thomas, A., J., Ringwald, K., Parfitt, S., Davies, A., & John, E. (2014). An empirical analysis of Lean Six Sigma implementation in SMEs: A migratory perspective. *The International Journal of Quality and Reliability Management, 31*, 888-905. doi:10.1108/IJQRM-04-2013-0070

Thorpe, M. R. (2013). The process of conducting qualitative research as an adjunct to the development of therapeutic abilities in counselling psychology. *New Zealand Journal of Psychology*, *42*, 35-43. Retrieved from http://www.psychology.org

Toledo, A. H., Carroll, T., Arnold, E., Tulu, Z., Caffey, T., Kearns, L. E., & Gerber, D. A. (2013). Reducing liver transplant length of stay: A Lean Six Sigma approach. *Progress in Transplantation*, *23*, 350-364. doi:10.7182/pit2013226

Tong, A., Chapman, J. R., Israni, A., Gordon, E. J., & Craig, J. C. (2013). Qualitative research in organ transplantation: Recent contributions to clinical care and policy. *American Journal of Transplantation*, *13*, 1390-1399. doi:10.1111/ajt.12239

Toshiko, I., Mariko, W., Kikuko, M., & Takeo, N. (2014). Birth environment facilitation by midwives assisting in non-hospital births: A qualitative interview study. *Midwifery*, *30*, 877-884. doi:10.1016/j.midw.2014.02.004

Townsend, A., & Cox, S. M. (2013). Accessing health services through the back door: A qualitative interview study investigating reasons why people participate in health research in Canada. *BMC Medical Ethics*, *14*(1), 1-20. doi:10.1186/1472-6939-14-40

Truglio-Londrigan, M. (2013). Shared decision-making in home-care from the nurse's perspective: Sitting at the kitchen table - a qualitative descriptive study. *Journal of Clinical Nursing, 22,* 2883-2895. doi:10.1111/jocn.12075

Tufford, L., & Newman, P. (2012). Bracketing in qualitative research. *Qualitative Social Work, 11,* 80-96. doi:10.1177/143325010368316

Turner, T. L., Balmer, D. F., & Coverdale, J. H. (2013). Methodologies and study designs relevant to medical education research. *International Review of Psychiatry, 25,* 301-310. doi:10.3109/09540261.2013.790310

Tyagi, S., Cai, X., Yang, K., & Chambers, T. (2015). Lean tools and methods to support efficient knowledge creation. *International Journal of Information Management, 35,* 204-214. doi:10.1016/j.ijinfomgt.2014.12.007

Ugurlu, O. Y., & Kurt, M. (2016). The impact of organizational learning capability on product innovation performance: Evidence from the Turkish manufacturing sector. *Emerging Markets Journal, 6,* 1, 69-84. doi:10.5195/emaj.2016.99

Ulhassan, W., Westerlund, H., Thor, J., Sandahl, C., & Ulrica von, T. S. (2014). Does Lean implementation interact with group functioning? *Journal of Health Organization and Management, 28,* 196-213. doi:10.1108/JHOM-03-2013-0065

Upjohn, M. M., Attwood, G. A., Lerotholi, T., Pfeiffer, D. U., & Verheyen, K. L. P. (2013). Quantitative versus qualitative approaches: A comparison of two research methods applied to identification of two health issues for working horses in Lesotho. *Preventive Veterinary Medicine, 108,* 313-320. doi:10.1016/j.prevetmed.2012.11.008

Uprichard, E. (2013). Sampling: Bridging probability and non-probability designs. *International Journal of Social Research Methodology, 16*, 1-11. doi:10.1080/13645579.2011.633391

U.S. Department of Health and Human Services. (1979). The Belmont Report. Retrieved from http://www.hhs.gov

Valiee, S., Peyrovi, H., & Nasrabadi, A. N. (2014). Critical care nurses' perception of nursing error and its causes: A qualitative study. *Contemporary Nurse, 46*, 206-213. doi:10.5172/conu.2014.46.2.206

Valizadeh, S., Dadkhah, B., Mohammadi, E., & Hassankhani, H. (2014). The perception of trauma patients from social support in adjustment to lower-limb amputation: A qualitative study. *Indian Journal of Palliative Care*, *20*, 229-238. doi:10.4103/0973-1075.138401

Valmohammadi, C., & Roshanzamir, S. (2015). The guidelines of improvement: Relations among organizational culture, TQM and performance. *International Journal of Production Economics*, *164*, 167-178. doi:10.1016/j.ijpe.2014.12.028

van der Eerden, M., Csikos, A., Busa, C., Hughes, S., Radbruch, L., Menten, J., & ... Groot, M. (2014). Experiences of patients, family and professional caregivers with integrated palliative care in Europe: Protocol for an international, multicenter, prospective, mixed method study. *BMC Palliative Care*, *13*(52), 1-20. doi:10.1186/1472-684X-13-52

Vedel, I., Ghadi, V., Lapointe, L., Routelous, C., Aegerter, P., & Guirimand, F. (2014). Patients', family caregivers', and professionals' perspectives on quality of

palliative care: A qualitative study. *Palliative Medicine, 28,* 1128-1138. doi:10.1177/0269216314532154

Venkatesh, V., Brown, S. A., & Bala, H. (2013). Bridging the qualitative-quantitative divide: Guidelines for conducting mixed methods research in information systems. *MIS Quarterly, 37,* 21-54. Retrieved from http://www.misq.org

Voet, J. (2014). The effectiveness and specificity of change management in a public organization: Transformational leadership and a bureaucratic organizational structure. *European Management Journal, 32,* 373-382. doi:10.1016/j.emj.2013.10.001

Vohra, V. (2014). Using the multiple case study design to decipher contextual leadership behaviors in Indian organizations. *Electronic Journal of Business Research Methods, 12,* 54-65. Retrieved from http://www.ejbrm.com

von Bertalanffy, L. (1972). The history and status of general systems theory. *Academy of Management Journal, 15,* 407-426. doi:10.2307/255139

Wagstaff, C., & Williams, B. (2014). Specific design features of an interpretative phenomenological analysis study. *Nurse Researcher, 21,* 8-12. doi:10.7748/nr2014.01.21.3.8.e1226

Walker, J. L. (2012). Research column: The use of saturation in qualitative research. *Canadian Journal of Cardiovascular Nursing, 22,* 37-41. Retrieved from http://www.cccn.ca

Wandersman, A., Alia, K. A., Cook, B, & Ramaswamy, R. (2015). Integrating empowerment evaluation and quality improvement to achieve healthcare

improvement outcomes. *BMJ Quality and Safety*, *24*, 645–652. doi:10.1136/bmjqs-2014-00352

Wang, H., Sui, Y., Luthans, F., Wang, D., & Wu, Y. (2014). Impact of authentic leadership on performance: Role of followers' positive psychological capital and relational processes. *Journal of Organizational Behavior*, *35*, 5-21. doi:10.1002/job.1850

Wang, H. S., Wang, S., & Lee, W. (2014). A case study for reducing client waiting time in a health evaluation center using design for Six Sigma. *Engineering Management Journal, 26*, 62-73. Retrieved from http://www.asem.com

Waters, R. D. (2013). The role of stewardship in leadership: Applying the contingency theory of leadership to relationship cultivation practices of public relations practitioners. *Journal of Communication Management*, *17*, 324-340. doi:10.1108/JCOM-05-2012-0041

Watson, E. R., & Foster-Fishman, P. G. (2013). The exchange boundary framework: Understanding the evolution of power within collaborative decision-making settings. *American Journal of Community Psychology*, *51*, 151-163. doi:10.1007/s10464-012-9540-8

Watts, L. R., & Ormsby, J. G. (2015). The effect of operational and strategic planning on small firm performance. *Journal of Small Business Strategy*, *1*, 27-35. Retrieved from http://www.jsbs.org

Wei, Y., O'Neill, H., Lee, R. P., & Zhou, N. (2013). The impact of innovative culture on individual employees: The moderating role of market information sharing.

Journal of Product Innovation Management, 30, 1027-1041. doi:10.1111/j.1540-5885.2012.01000.x

Wester, K. L., Borders, L. D., Boul, S., & Horton, E. (2013). Research quality: Critique of quantitative articles in the journal of counseling and development. *Journal of Counseling and Development: JCD, 91,* 280-290. Retrieved from http://www.wiley.com

White, D. E., Oelke, N. D., & Friesen, S. (2012). Management of a large qualitative data set: Establishing trustworthiness of the data. *International Journal of Qualitative Methods, 11,* 244-258. Retrieved from http://www.ualberta.ca

Wilson, J. (2014). Ward staff experiences of patient death in an acute medical setting. *Nursing Standard, 28,* 37-45. doi.10.7748/ns.28.37.37.e7949

Wright, L. (2013). Quality improvement and organizational change initiatives: An analysis of the U. S. Army's Warrior Transition Unit (WTU). *Academy of Strategic Management Journal, 12,* 95-111. Retrieved from http://www.alliedacademies.org

Yap, Q. S., & Webber, J. K. (2015). Developing corporate culture in a training department: A qualitative case study of internal and outsourced staff. *Review of Business and Finance Studies, 6,* 43-56. Retrieved from http://www.theibfr.com

Yapa, S. (2012). Total quality management in Sri Lankan service organizations. *TQM Journal, 24,* 505-517. doi:10.1108/17542731211270070

Yilmaz, K. (2013). Comparison of quantitative and qualitative research traditions: Epistemological, theoretical, and methodological differences. *European Journal of Education, 48,* 311-325. doi:10.1111/ejed.12014

Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). Thousand Oaks, CA: Sage.

Yin, R. K. (2012). *Applications of case study research* (3rd ed.). Thousand Oaks, CA: Sage.

Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). Thousand Oaks, CA: Sage.

Yu, H., Abdullah, A., & Saat, R. M. (2014). Overcoming time and ethical constraints in the qualitative data collection process: A case of information literacy research**.** *Journal of Librarianship and Information Science, 46,* 3, 243-257. doi:10.1177/0961000614526610

Zarshenas, L., Sharif, F., Molazem, Z., Khayyer, M., Zare, N., & Ebadi, A. (2014). Professional socialization in nursing: A qualitative content analysis. *Iranian Journal of Nursing and Midwifery Research, 19,* 432-438. Retrieved from http://www.medknow.com

Zeldenryk, L., Gray, M., Gordon, S., Speare, R., & Hossain, M. (2014). The use of focus groups to develop a culturally relevant quality of life tool for lymphatic filariasis in Bangladesh. *Quality of Life Research, 23,* 299-309. doi:10.1007/s11136-013-0455-0

Zeng, J., Anh, P. C., & Matsui, Y. (2013). Shop-floor communication and process management for quality performance: An empirical analysis of quality management. *Management Research Review, 36*, 454-477. doi:10.1108/01409171311327235

Zhang, Q., Irfan, M., Khattak, M. A., Zhu, X., & Hassan, M. (2012). Lean Six Sigma: A literature review. *Interdisciplinary Journal of Contemporary Research in Business, 3*, 599-605. Retrieved from http://www.ijcrb.webs.com

Zhou, L., & Miguel, B. N. (2013). Doing qualitative research in Chinese contexts. *Library Hi Tech, 31*, 419-434. doi:10.1108/LHT-11-2012-0104

Zivaljevic, A. (2015). Theory of constraints: Application in land transportation systems. *Management of Environmental Quality, 26*, 505-517. doi:10.1108/MEQ-07-2014-0110

Appendix A: Interview Questions

1. What is your experience with the implementation of PI?

2. How do you achieve continuous improvement?

3. What type of leadership style has worked well for implementing organizational-wide PI?

4. How do you manage the implementation process of PI?

5. Please explain how employees can affect the implementation of PI.

6. Please explain how organization culture can affect PI's implementation.

7. What other information (if any) would you like to share concerning PI's implementation success or failure?

Appendix B: Interview Protocol

A. **Protocol Purpose and Intended Use**

1. The protocol is a procedural guide for the interview process: data collection, analysis, and findings and conclusions preparation efforts
2. The guide is a means to achieve research dependability

B. **Data Collection Procedures**

1. Prepare subquestions based on the research question: What are the logistics leaders' strategies for successful implementation of PI?
2. Recruit participants and make initial contact using the telephone; use e-mail as follow-up procedure
3. Schedule and conduct the interview based on the convenience of the participants
4. Prepare resource required for the interview and conduct the interview
   a. Start interview with a brief introduction and gather demographic information of participants: job title, years of experience, and grade or rank.
   b. Using the informed consent form, brief participants on the study and get signature on consent form
   c. Inform participants of the member checking process
   d. Collect data using semistructured interviews; use open-ended question
   e. Audio record the interview
   f. Use note taking during the interview

C. **Interview Questions and Subquestions**

1. What are the strategies you use to implement PI in the aviation industry?
    a. What are some of the factors you consider when implementing PI?
    b. What are some key ingredients in achieving your objectives of PI?
    c. How do you determine what process to improve and change? How do you perceive the value of a change process for PI?
2. What strategies do you use for continuous PI in your organization?
    a. Please describe your plan for on-going PI. How important is continuous PI?
    b. What factors do you consider for continuous PI?
    c. How do you perceive the value of PI to a strategic plan?
3. Please describe the leadership style or styles you use for implementing PI.
    a. How do you perceive the effect of leadership style on PI?
    b. What advice would you give another logistics leader concerning leadership style when implementing PI?
4. How do you manage the implementation process of PI?
    a. What steps do you use to assess the status of PI?
    b. How do you determine the effect of PI?
5. Please explain how employees can affect the implementation of PI.
    a. Please describe the effect of employees' attitude regarding PI.
    b. How do you perceive the value of PI training?
6. Please explain how organizational culture can affect PI implementation.
    a. How would you describe your organizational culture?

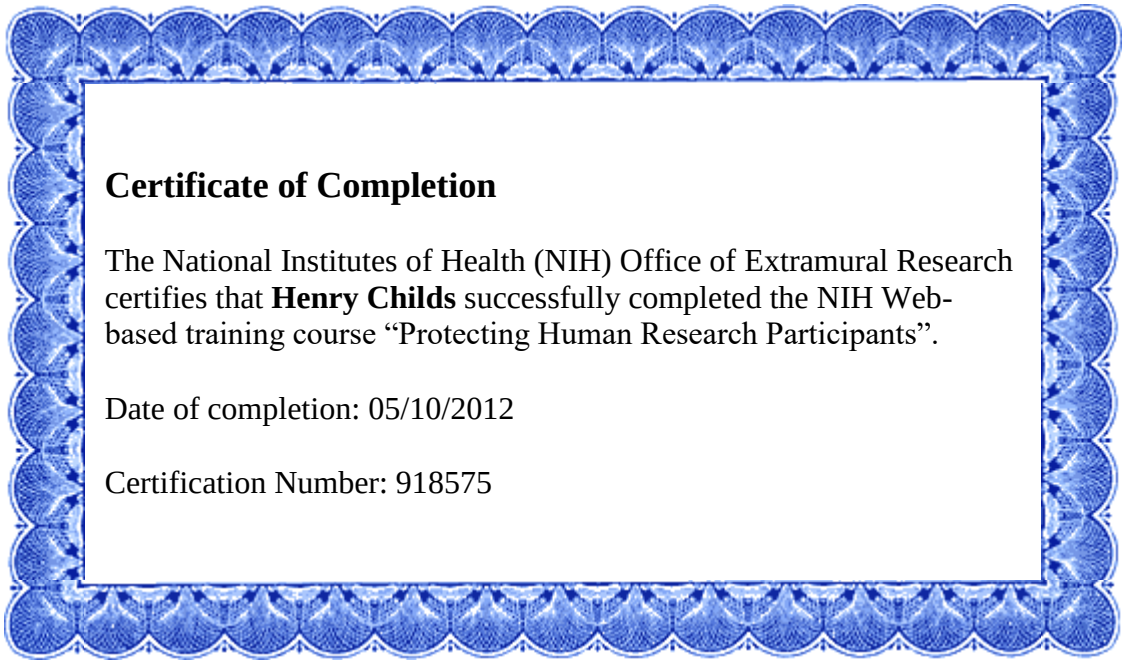
b. How do you perceive the effect of employee motivation, teamwork, and innovation regarding PI?

7. What other information (if any) would you like to share concerning PI's implementation success or failure?

D. **Data Analysis**

1. Transcribe audio-recorded interviews into Microsoft word documents.
2. Perform Coding
   a. Use NVivo v10 for electronic software coding
   c. Use Microsoft Excel for manual coding
3. Perform member checking with participants

Appendix C: NIH Certificate



Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Henry Childs** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 05/10/2012

Certification Number: 918575

Appendix D: Organizational Permission

Organizational Permission

[redacted]

August 15, 2016

Dear Henry

Based on my review of your research proposal, I give permission for you to conduct the study entitled Strategies that Logistics Leaders use for Achieving Successful Process Improvement within the [redacted] As part of this study, I authorize you to recruit and interview participants. Individuals' participation will be voluntary and at their own discretion.

We understand that our organization's responsibilities include: assisting the researcher in identifying participants for the study. We reserve the right to withdraw from the study at any time if our circumstances change.

I confirm that I am authorized to approve research in this setting and that this plan complies with the organization's policies.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the student's supervising faculty/staff without permission from the Walden University IRB.

Sincerely,

[redacted]