2020

Relationship Between Information Technology Integration, Senior Leadership Involvement in Postmerger Integration, and Merger Performance

Francis Tella
Walden University

Walden University

College of Management and Technology

This is to certify that the doctoral study by

Francis Tella

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. Jaime Klein, Committee Chairperson, Doctor of Business Administration Faculty

Dr. Annie Brown, Committee Member, Doctor of Business Administration Faculty

Dr. George Bradley, University Reviewer, Doctor of Business Administration Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2020

Abstract

Relationship Between Information Technology Integration, Senior Leadership Involvement in Postmerger Integration, and Merger Performance

by

Francis Tella

MBA, Enugu State University of Science and Technology, 2000

BSc, Obafemi Awolowo University, 1989

Doctoral Portfolio Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

December 2020

Abstract

Ineffective postmerger performance places an organization at financial risk. Health care leaders are concerned with postmerger performance because of the high rate of postmerger failure and the significant economic and social impact that hospitals have on their communities. Grounded in Haspeslagh and Jemison's post acquisition integration framework, the goal of this quantitative ex post facto study was to evaluate the relationship between information technology integration, senior leadership involvement in postmerger integration, and postmerger performance. Secondary data were collected from the Center for Medicare and Medicaid Hospital Compare and the American Hospital Association's annual survey databases for 2018. Data from Irving Levin Associates and the American Hospital Association were used to identify 72 acute care, nonfederal, and general medical-surgery hospitals from the midwestern states of Ohio, Michigan, Illinois, Indiana, and Wisconsin with mergers and acquisitions (M&A) activity between 2013 and 2017. The findings from the multiple regression indicated that senior leadership involvement was statistically significant, $F(3, 68) = 15.026$, $p < .001$, $R^2 = .399$. A recommendation is that senior health care leaders increase their involvement by developing and implementing a roadmap for periodic check-ins and engagement with mid-tier leaders who manage the postmerger integration process. The implications for positive social change include the potential for hospital leaders to derive value from M&A and improve performance through leadership engagement in the postmerger integration process.

Relationship Between Information Technology Integration, Senior Leadership Involvement in Postmerger Integration, and Merger Performance

by

Francis Tella

MBA, Enugu State University of Science and Technology, 2000

BSc, Obafemi Awolowo University, 1989

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

December 2020

Dedication

I dedicate this work to my dear wife, Mary “Bunor” Tella. Thank you for your understanding, love, and support. Thank you for the hugs and encouragement during the long days and nights. Thank you for pushing me on and insisting that I stay the course till the very end. We rise together. I could not have wished for a better partner and friend through this journey. I also dedicate this study to my sons, Stephen and Joshua. I love you. You can win no matter the odds you face. Finally, and most importantly, I dedicate this work to my heavenly Father, who makes all things possible, and gives me breath and grace for every day.

Acknowledgments

I want to express my heartfelt thanks and appreciation to my chair, Dr. Jaime Klein, for the guidance, encouragement, and support throughout the journey. Thank you, Dr. Klein, for the insights and commitment to helping me through the study. To my committee members, Dr. Annie Brown and Dr. George Bradley, thank you for your support and timely feedback. Dr. Brown, I appreciate your positivity. You are an excellent motivator. Dr. Bradley, I appreciate your depth of wisdom. Thank you for inspiring confidence in me during my residencies. To all the faculty and staff who have helped me through this journey, thank you. I would like to also appreciate my parents for their encouragement and constant prodding about my progress from the moment they found out that I began this doctoral journey. I want to particularly thank my dad, Dr. J. O. Tella, for being my motivation. Bunor, Stephen, and Joshua, thank you for allowing me the time to complete this program. We did this together.

Table of Contents

List of Tables iii

List of Figures iv

Section 1: Background and Context 1

Historical Background 1

Problem Statement 2

Purpose Statement 3

Target Audience 3

Research Question and Hypotheses 4

Significance 4

Theoretical Framework 6

Representative Literature Review 9

Mergers and Acquisitions in Health Care 12

Making Mergers Work 14

PMI Theories and Frameworks 15

Haspeslagh and Jemison's Postmerger Integration Framework 22

Leadership in M&A 26

Leadership Involvement 32

Information Technology Integration 35

Postmerger Performance 41

Transition 47

Section 2: Project Design and Process 49

Method and Design 49
Method 49
Design 51
Data Analysis 52
Data Source Mapping 54
Data Analysis Techniques 55
Ethics 57
Transition and Summary 59
Section 3: The Deliverable 60
Executive Summary 60
Purpose of the Program 60
Goals and Objectives 61
Overview of Findings 61
Recommendations 64
Presentation of the Findings 64
Recommendations for Action 80
Implications for Social Change 81
Skills and Competencies 82
References 83

List of Tables

Table 1. M&A Strategies and IT Integration Approaches 38

Table 2. Hospital M&A Count by State 62

Table 3. Target Hospitals Count With M&A Count by State 63

Table 4. IT Integration Response Frequency 65

Table 5. Descriptive Statistics 66

Table 6. Model Summary 67

Table 7. Residuals Statistics 71

Table 8. Correlations 73

Table 9. Collinearity Statistics 74

Table 10. Anova 77

Table 11. Regression Analysis Summary for Predictor Variables 78

Table 12. Coefficients 79

List of Figures

Figure 1. Haspeslagh and Jemison's types of acquisition integration approaches. 7

Figure 2. The acquisition process. 8

Figure 3. Alignment of the acquisition process constructs and variables. 9

Figure 4. Data source mapping. 55

Figure 5. Graphical model of a priori power analysis 57

Figure 6. Scatter plot of studentized residuals by unstandardized predicted value showing a linear relationship. 68

Figure 7. Partial regression plot of leadership involvement and total performance score 69

Figure 8. Partial regression plot of IT_Int_Part=Yes but not single instance 70

Figure 9. Partial regression plot of IT_Int_No=No and total performance score 70

Figure 10. Histogram showing normality of distribution. 74

Figure 11. The normal P-P plot of regression standardized residual. 75

Figure 12. Q-Q of studentized residual showing normality. 76

Section 1: Background and Context

Mergers and acquisitions (M&A) are a common occurrence among businesses of every type and across different industries. Organizations employ M&A as a strategy for securing competitive advantage, market positioning, acquiring new competencies and knowledge, survival, improving efficiency, and many more reasons (Osarenkhoe & Hyder, 2015). However, M&A can be complicated and hardly guaranteed to be successful (Galpin, 2018; Rebner & Yeganeh, 2019). In health care, where hospitals are increasingly merging or acquired as a strategic response to the more challenging business and regulatory environment, successful mergers are vital for the social good (Frakt, 2015). The goal of this study was to evaluate the relationship between information technology (IT) integration, senior leadership involvement in postmerger integration (PMI), and the postmerger performance of hospitals. The results from the study could be useful in assisting hospital leaders to lead their organizations more effectively in achieving postmerger success.

Historical Background

Hospitals and other health care organizations are vital parts of the U.S. economy and integral to the well-being of the communities in which they operate. In an analysis of a 2016 survey of U.S. hospitals, American Hospital Association (AHA, 2018) reported that approximately 5.9 million people were employed by hospitals with additional 10.6 million jobs provided through businesses supporting health care, making a total of 16.5 million jobs through hospitals. The economic impact, according to the AHA report, is approximately $3.0 trillion (AHA, 2018). However, hospitals' influence goes beyond

their economic value as the health and well-being of people transcend monetary value. The reality, for health care providers, is that policy and economic changes create demanding environments necessitating health care organization leaders to seek ways to thrive financially as well as fulfill their socially responsible goals of caring for their communities. M&A are strategic growth tools that an increasing number of organizations use, including hospitals (Alaranta & Henningsson, 2008; Fleishon, Itri, Boland, & Duszak, 2017; Osarenkhoe & Hyder, 2015). Research, however, indicates a high rate of failure of M&A (Alaranta & Henningsson, 2008; Gomes, Angwin, Weber, & Yedidia Tarba, 2013). Understanding the relationship between factors impacting M&A outcomes would be beneficial to health care business leaders.

Problem Statement

M&A are on the rise among hospitals in the United States compared with the decade before 2010 (Fleishon et al., 2017; Schmitt, 2017). In its September 2017 report, the Agency for Healthcare Research and Quality of the U.S. Department of Health and Human Services stated that up to 70% of hospitals belong to a hospital system, an increase from the 2013 figure of 62% of hospitals in a system or merger. The general business problem that I addressed in this study is that a hospital merger does not easily translate to profitability or improved performance. The specific business problem that I addressed in this study is that some hospital leaders do not understand the relationship between IT integration, senior leadership involvement in PMI, and postmerger performance.

Purpose Statement

The purpose of this quantitative ex post facto study was to examine the relationship between hospitals' (a) IT integration, (b) senior leadership involvement in PMI, and (c) postmerger performance. The independent variables were hospitals' IT integration and senior leadership involvement in PMI. The dependent variable was postmerger performance. The targeted population consisted of senior leaders of general acute care hospitals and hospital systems located in the midwestern states of Ohio, Michigan, Indiana, Illinois, and Wisconsin with prior involvement in a merger or acquisition. The results from this study may enhance hospital leaders' understanding of achieving desirable results from M&A. The implications for social change include the potential to have a better understanding of how to improve postmerger hospital performance, thereby enhancing the ability of hospitals and health systems to provide quality care for their communities, increase positive patient outcomes and the overall well-being of their communities, and create positive economic impact.

Target Audience

The target audience for this portfolio was business leaders of hospitals in the midwestern United States who manage the M&A, and postmerger functions of their hospitals. These stakeholders are senior executives, directors, and other mid- to senior-level officers who are involved in the strategic decision-making process and implementation of mergers. Though focused on the midwestern states of Ohio, Michigan, Indiana, Illinois, and Wisconsin, the study is applicable to other hospital business leaders across the United States. Obtaining a better understanding of the relationship between the

variables of IT integration and senior leadership engagement in PMI can enable a better management of the M&A process and enhance M&A outcomes among hospitals. The continued high propensity for the poor performance and failure of mergers increased the necessity for leaders to understand how to improve M&A integration outcomes.

Research Question and Hypotheses

The goal of this study was to examine the relationship between IT integration, senior leadership involvement in PMI, and postmerger performance of hospitals. The study includes two independent variables (IT integration and senior leadership involvement in PMI) and one dependent variable (postmerger performance). The research question for this study was: What is the relationship between IT integration, senior leadership involvement in PMI, and postmerger performance?

The null and alternate hypotheses were as follows:

(H_0): There is no statistically significant relationship between IT integration, senior leadership involvement in PMI, and postmerger performance.

(H_a): There is a statistically significant relationship between IT integration, senior leadership involvement in PMI, and postmerger performance.

Significance

Health care organizations, particularly hospitals, will derive value from this study. Successfully navigating an M&A provides hospitals with opportunities for growth and continuous service to their communities.

Contribution to Business Practice

In a value-based care environment, hospital leaders face the challenge of providing high-quality care while reimbursements and payment rates are lower than in the previous fee-for-service climate (Frakt, 2015). The industry trend of employing the business strategy of M&A demands that hospital leaders transform M&A into improved performance and profitability. Achieving the performance objectives of an M&A depends on a successful PMI of IT systems and resources (Alaranta & Mathiassen, 2014). This study may contribute to the practice of business in some ways. First, it may provide health care business leaders with a model for understanding the relationship between IT integration, senior leadership involvement in PMI, and merger performance. The model can be a viable tool in enhancing the success of M&A among hospitals. Second, the study may contribute to existing literature on M&A practice specific to hospitals and health care organizations, which has been sparsely studied to date.

Implications for Social Change

A hospital failure potentially has significant negative consequences for the community in which it operates because avenues for caring for the population's health can be hampered or limited. Also, because hospitals have a significant economic impact on their communities through direct and indirect employment, the failure of a hospital may have dire economic and social consequences. The implications for positive social change include the potential of providing a better understanding of ways to improve postmerger performance and enhance sustainability. When performance improves,

hospital systems can offer better quality care, remain in business, support research, and contribute to the well-being of their communities.

Theoretical Framework

The theoretical framework for this study was the postacquisition integration model developed by Haspeslagh and Jemison (1991). Haspeslagh and Jemison developed the theory after researching for more than 8 years into 20 organizations in the United States, Japan, and Europe (Haspeslagh & Jemison, 1991). Haspeslagh and Jemison proposed that value creation in a merger or acquisition takes place after the acquisition event, essentially stating that the performance of a merger is dependent on a good PMI process. Haspeslagh and Jemison also proposed that a business leader's ability to envision the strategic objective of an M&A will affect the decision-making process, the postacquisition approach, and ultimately the performance of the combined company after the acquisition. Haspeslagh and Jemison's framework outlined the two factors that influence the path to integration as (a) the need for strategic interdependence and (b) organizational autonomy. Through their model, Haspeslagh and Jemison suggested that the degree to which either of these factors is prevalent will determine if the integration approach will be absorption, preservation, symbiosis or holding (Haspeslagh & Jemison, 1991). I used this model to derive a better understanding of the different approaches to integration health care organization leaders employ and evaluate the relationship with postmerger performance. Figure 1 depicts Haspeslagh and Jemison's PMI model.

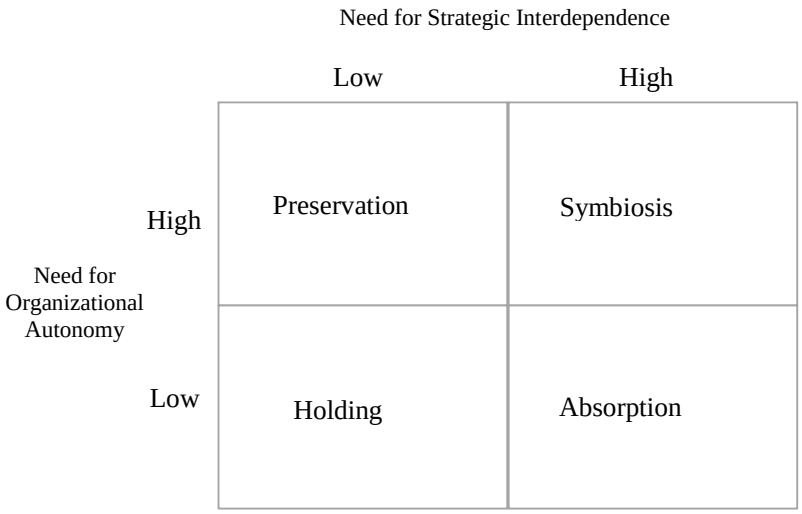

Figure 1. Haspeslagh and Jemison's types of acquisition integration approaches. From *Managing acquisitions: Creating value through corporate renewal* (p. 145) by P. C. Haspeslagh and D. B. Jemison, 1991, New York, NY: Free Press. Copyright 1991 by P. C. Haspeslagh and D. B. Jemison. Reprinted with permission.

Value creation from a merger takes place during the integration process. Central to Haspeslagh and Jemison's framework is the theory that PMI is the source of value creation in M&A. Haspeslagh and Jemison (1991) theorized that leaders must be engaged in shaping and guiding the integration process, ensuring that the requisite environment exists for a smooth transfer of capabilities to derive value and achieve the planned objective of the M&A. The capabilities for transfer between the merging firms are strategic and are resources, assets, and skills, including IT, that are combined to improve the competitive advantage of the newly formed organization. Figure 2 shows an overview of the acquisition process, as outlined by Haspeslagh and Jemison.

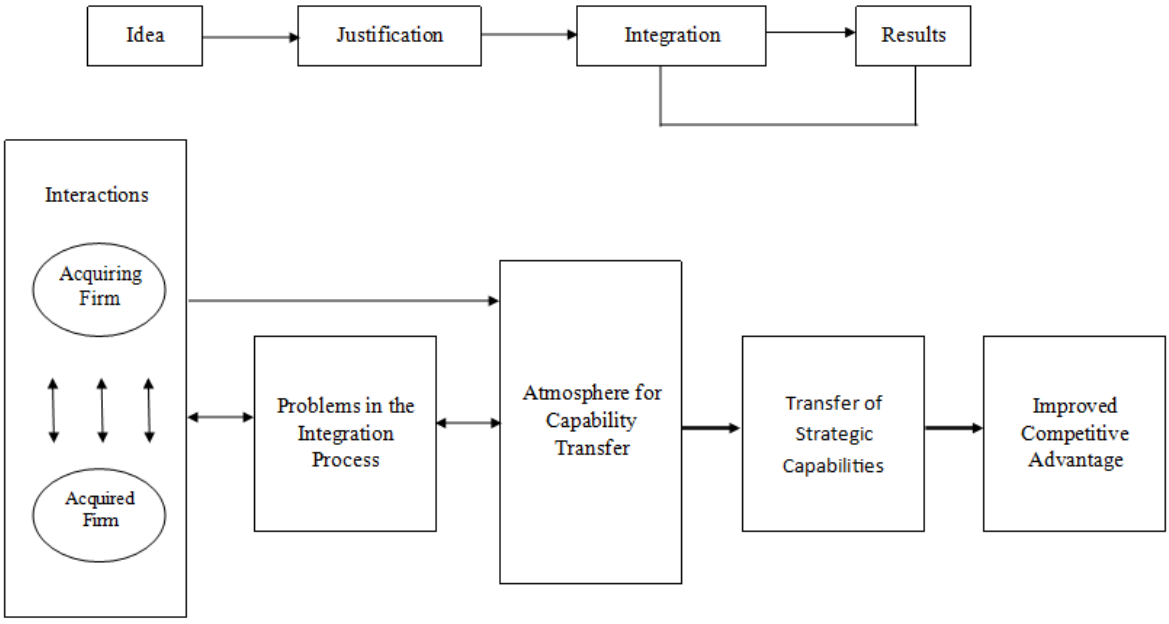

Figure 2. The Acquisition Process. Reprinted from *Managing acquisitions: Creating value through corporate renewal* (p. 107) by P. C. Haspeslagh and D. B. Jemison, 1991, New York, NY: Free Press. Copyright 1991 by P. C. Haspeslagh and D. B. Jemison. Reprinted with permission.

Central to the integration process are the interactions of the constructs of the atmosphere for capability transfer and the strategic capabilities to be transferred. Figure 3 shows the alignment between the constructs of Haspeslagh and Jemison's framework and the variables for this study.

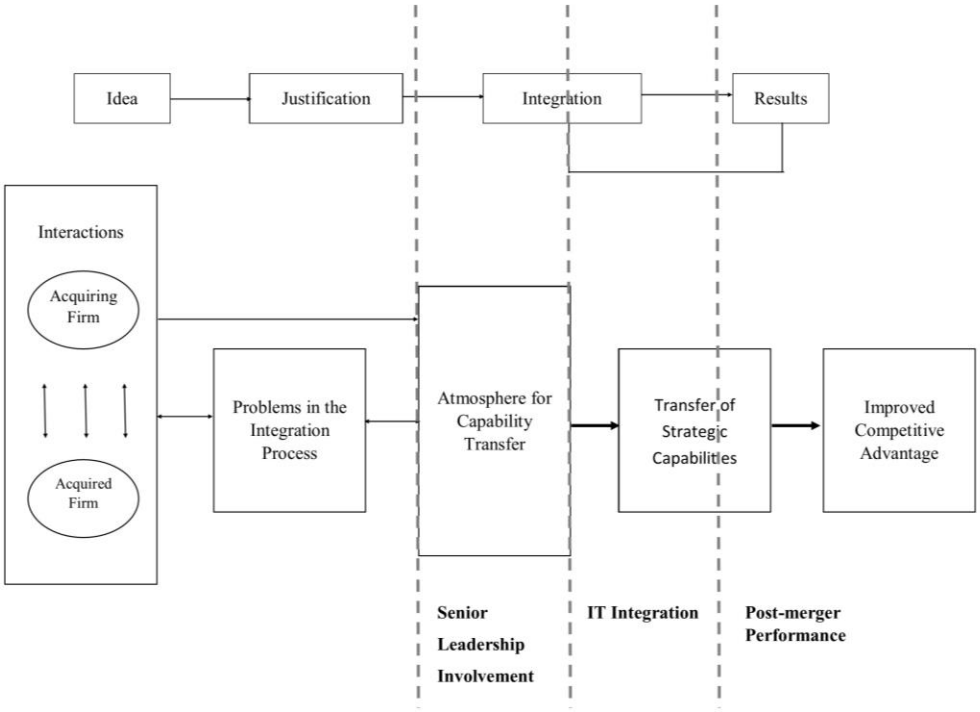

Figure 3. Alignment of the Acquisition Process Constructs and Variables. Adapted from Adapted from *Managing acquisitions: Creating value through corporate renewal* (p. 107) by P. C. Haspeslagh and D. B. Jemison, 1991, New York, NY: Free Press. Copyright 1991 by P. C. Haspeslagh and D. B. Jemison.

Representative Literature Review

Business leaders pursue M&A as a growth and competitive strategy. Companies utilize M&A to acquire new skills and resources, derive financial synergies, achieve economies of scale, minimize competition, improve market positioning, diversify, and facilitate growth (Brueller, Carmeli, & Markman, 2018; Burns et al., 2015; Osarenkhoe & Hyder, 2015). Attesting to the prevalence of M&A activity as a growth strategy, Thomson Reuters reported an increase of 37%, amounting to $3.3 trillion within the first 9 months of 2018, compared with the same period the previous year (Thomson Reuters,

2018). This trend of increasing M&A activity is expected to continue during the next decade, primarily due to advances in technology (Chang, Chang, & Wang, 2014; Rebner & Yeganeh, 2019). Despite the volume of activity, ample evidence exists of failure of M&A to increase shareholder value or achieve the premerger objectives (Friedman, Carmeli, Tishler, & Shimizu, 2016; Galpin, 2018; King, 2017; Rebner & Yeganeh, 2019). The need exists for further research that goes beyond conceptual analyses of M&A approaches and provides empirical support that may be beneficial to business practice (Lu, 2018). Business leaders will find great value in having a better understanding of the M&A process and how to derive the desired benefits from it. The growth in M&A and the challenges associated with them are pervasive across many business sectors.

M&A is prevalent in the health care industry. Like other businesses, hospitals and health systems embark on M&A in pursuit of growth, to achieve a competitive advantage, prevent closures, and shore up decreasing revenues in an increasingly demanding business climate with reducing reimbursement rates for services rendered (Frakt, 2015). However, achieving the profitability or performance objectives of M&A seems to be difficult, and studies on the crucial factors and methods for successful hospital mergers and PMI are limited (Reddy, Qamar, & Yahanpath, 2019). According to Lineen (2014), M&A activities among hospitals rarely achieve the desired results without a systems integration. Integrating merged organizations is more crucial to merger success than other strategic initiatives (Osarenkhoe & Hyder, 2015). It is, therefore, vital for leaders of hospitals and hospital systems to understand the intricacies of managing M&A and PMI to achieve business objectives.

This section includes a review of literature from scholarly peer-reviewed journals, periodicals, and seminal works relevant to the research question: What is the relationship between IT integration, senior leadership involvement in PMI, and postmerger performance? I organized this review into six main headings. These categories are M&A in health care, making mergers work, Haspeslagh and Jemison's PMI framework, leadership, IT integration, and postmerger performance. Under the first heading M&A in health care, I provided an overview of the extant literature on M&A in health care. The intent of this segment was to articulate the strategic importance of M&A to hospitals in the United States. In the next segment, making mergers work, I present a review of M&A typologies and postacquisition integration frameworks, provide some insight into the constraints or challenges that they present, and discuss the reason that I chose to use Haspeslagh and Jemison's PMI framework. The subsequent segments include an elaboration of Haspeslagh and Jemison's PMI framework, a discussion of some of the constructs, and a review of the critical concepts of leadership, IT systems integration postmerger, and performance.

To identify relevant sources for this review, I searched several databases through the Walden University Library. The databases that I used for the study include ABI/INFORM Collection, Business Source Complete, Emerald Insight, SAGE Journals, ScienceDirect, IEEE Xplore Digital Library, and Google Scholar. Keywords that I used in the searches included a mix of the following: *merger, acquisition, post-merger, post-acquisition, integration, post-acquisition integration, post-merger integration, healthcare, leadership, performance, post-merger integration theory, Haspeslagh and*

Jemison framework, information technology integration, information systems integration, healthcare IT, M&A, and *M&A framework*. The literature review contains 139 selected resources. Of these 139 resources, 102 are peer-reviewed journal articles published after 2015. The other 37 resources are seminal works and peer-reviewed journal articles published before 2015.

M&A in Health Care

Hospitals are vital to the well-being of their communities. Beyond attending to the physical and mental health of the population, the economic impact of hospitals in the United States is more than $3 trillion, and hospitals support more than 16.5 million jobs (AHA, 2018). Despite the significant reach, the high cost of health care in the United States, currently about 18% of the gross domestic product (GDP), is a source of concern for practitioners and policymakers (King, 2017). The Centers for Medicare & Medicaid Services (CMS) projected that the cost of health care in the United States would rise to about 20% of GDP by 2027, raising the call for improvements on how care is delivered.

Understanding the reasons health care organizations merge is fundamental to a useful analysis of what enhances the performance of a merger. Policy changes in the health care industry and the increasing pressure to reduce health care costs while improving quality of care and patient outcomes are forcing health care organizations to move towards mergers, acquisitions, and consolidation (Fleishon et al., 2017; King, 2017). With the implementation of the value-based care and reimbursement models under the Affordable Care Act (ACA) and subsequent policy changes, hospitals and clinicians are challenged to reevaluate their processes and develop new approaches to care

coordination and delivery (Rajaram et al., 2015; Srinivasan & Desai, 2017). Fleishon et al. (2017) found that due to the changes in the industry, there is a growing trend toward M&A. The drive for M&A opportunities is a conscious strategic objective of leaders with the primary intent of creating value and improving profitability (Fleishon et al., 2017; Rahman & Lambkin, 2015). Despite the established trend toward M&A among hospitals, the performance results have been varied, necessitating the need to improve practices in the areas of governance, change management, culture, operations, finances, productivity, and compensation (Fleishon et al., 2017; Henningsson & Kettinger, 2016). A good understanding of how to achieve M&A objectives is, therefore, vital for business leaders in the health care industry.

Industry fragmentation is another reason for the growth of M&A in health care. West, Johnson, and Ashish (2017) stated that a high degree of fragmentation exists in the U.S. health care industry, which has increased provider consolidation and acquisition of physician practices. Hospitals proffer better care coordination, improved quality of care, and better operational efficiency as reasons driving the acquisitions of physician practices (West et al., 2017). However, evidence from available research showed that financial objectives are the primary motivators for the acquisitions (West et al., 2017). Noles, Reiter, Boortz-Marx, and Pink (2015) similarly identified financial performance as a driver for M&A activity. Hospitals with weaker financial performance are more susceptible to M&A (Noles et al., 2015; Zand, 2018). The desire for a stronger market position and improving the quality of services offered to patients are other drivers for M&A in health care (Postma & Roos, 2016; Schmitt, 2017). Achieving economies of

scale, a higher purchasing power, reduction of staffing costs, achieving leverage with payers, and deriving synergy from integrating resources and systems are additional reasons why M&A activities are on the increase amongst hospitals and health care providers (Hauptman, Bookman, & Heinig, 2017; Schmitt, 2017; Zand, 2018). However, M&A can be disruptive to business operations, and problems can arise from the activity, failing to achieve the acquisition objectives.

Making Mergers Work

Making mergers work is a challenge that goes beyond signing the agreement to acquire or merge with another business. Despite the promise of potentially faster growth, increased capabilities, and resources, most M&A fall short of their objectives (Brueller et al., 2018; Klar & Shufelt, 2015). Nevertheless, business organizations continue to utilize M&A as a growth strategy regardless of the evidence of a high probability of failure to achieve their performance or growth objectives (Frantz, 2018; Nandi & Nandi, 2017). M&A occurs when two organizations combine resources and capabilities to form a new company. M&A take different forms, depending on the goals of the parties involved (Brueller et al., 2018). M&A may be vertical or horizontal, related, or unrelated, as well as other forms (Brueller et al., 2018; Chatterjee & Brueller, 2015). Brueller et al. (2018) suggested a classification of M&A into three main groups: annex and assimilate, harvest and protect, and link and promote. Annex and assimilate are acquisitions where the target firm's core assets are taking over or absorbed by the acquiring firm (Brueller et al., 2018). Harvest and protect are M&A that focused on integrating and expanding capabilities to enhance productivity, innovation, and entrance into different markets

(Brueller et al., 2018; Swaminathan, Groening, Mittal, & Thomaz, 2014). According to Brueller et al. (2018), link and promote describes acquisitions focused on creating shared value and growth of both firms. By grouping M&A in this manner, Brueller et al. (2018) essentially tied Haspeslagh and Jemison's PMI approaches to each merger category. However, other scholars have suggested different theories and approaches that may apply to PMI as well.

M&A offers leaders a path toward renewing and rejuvenating their organizations. M&A is a strategy for corporate renewal that is predicated on a solid understanding of the firm's business domain, as well as clarity on the M&A would impact renewal (Dao, Strobl, Bauer, & Tarba; 2017; Haspeslagh & Jemison, 1991). Organizations may pursue M&A to eliminate management inefficiencies, achieve synergy, diversify, expand market reach, and to encourage favorable assets expansion (Haspeslagh & Jemison, 1991). Central to the idea of synergy creation through M&A is the concept of strategic fit (Bauer, Strobl, Dao, Matzler, & Rudolf, 2018; Haspeslagh & Jemison, 1991). Bauer et al. (2018) described strategic fit as an organization's orientation toward synergy creation via exploration and exploitation. *Exploration* refers to the creation of new knowledge, whereas *exploitation* implies modifying and improving existing processes for a better outcome (Bauer et al., 2018). A strategic fit analysis is required prior to an M&A to ensure there is an alignment between the merging firms.

PMI Theories and Frameworks

Ideas and approaches abound on how to effectively integrate companies postmerger. Scholars have identified effective postacquisition integration as a key to

ensuring M&A success (Henningsson & Kettinger, 2016). A crucial question then is: What is the right approach to PMI? Haspeslagh and Jemison (1991) proposed a PMI framework, which is the theoretical foundation for this doctoral study. However, other scholars have suggested different theories and approaches that may be applied as well. Nandi and Nandi (2017) evaluated and proposed the activity theory as an approach to manage the M&A process and improve PMI. Contingent to Nandi and Nandi's (2017) proposition is the understanding that the social identity perspective or the people aspect of an M&A is crucial to any postmerger success. The activity theory originated from the work of Russian psychologists, Vygotsky, Leont'ev, and others from the 1920s (Engestrom, 2000). According to Nandi and Nandi (2017), the activity theory posits that all human learning takes place in the form of activities because people cannot be treated in isolation from their social and cultural environments. The activity theory is mainly descriptive and provides a means of uniting human consciousness and cognitive abilities with action (Karanasios & Allen, 2018; Karanasios, Allen, & Finnegan, 2015). Nandi and Nandi (2017) found the activity theory to be a useful framework for organizational learning, interactions, and process integrations. The activity theory offers a way to manage multiple activities, remove hindrances to operating in smaller, more integral units while maintaining ordered processes, and emphasize the provision of tools for organizational effectiveness (Nandi & Nandi, 2017). Although the activity theory provides a path to PMI, it does not provide an overarching methodology for information systems integration. Researchers have suggested other theoretical approaches.

The extent to which the organizational units and employees coalesce into a single, unified, cohesive, and functional organization impacts M&A success. The meso-unit theory, proposed by Frantz (2018), offers another lens through which to implement PMI. Integrating to form a unified and cohesive organization is a necessary process that includes knowledge transfer (Frantz, 2018; Sarala, Junni, Cooper, & Tarba, 2016). Knowledge transfer is crucial for postmerger performance (Ahammad, Tarba, Liu, & Glaister, 2016; Frantz, 2018). Total count of work units and teams in the merging organizations are indicative of the complexity of the integration process (Frantz, 2018; Lauser, 2010; Turner & Baker, 2019). The meso-unit theory of PMI postulates that the number of work units to be integrated in a merged organization has a significantly higher negative impact on the time to achieve integration than the total number of people involved (Frantz, 2018). The imperative of aligning IT integration and business strategies is validated through research and provides a foundation for Frantz's analysis (Frantz, 2018; Reynolds & Yelton' 2015). The research by Frantz (2018) showed support for the proposition that the number of work units that must integrate negatively affects the integration performance of the merged organization. Frantz (2018) also found that the number of players in the work units negatively affects integration performance, and the amount of knowledge transfer per work unit negatively impacts the integration performance of the merged organization. The findings indicate that the organizational structure has a more significant impact on the difficulty of integration than the number of employees affected by a merger (Frantz, 2018). The significance of the theory is that PMI can be more successful if practitioners work at effecting better organizational structures

and enhance communications across teams. Regardless of the organizational structure of the merging firms, defining the strategic vision for a merger is essential and foundational to successful integration. Also, though crucial, achieving a successful PMI goes beyond work unit cohesion. Therefore, a more comprehensive lens for PMI is preferred.

The effectiveness of the PMI phase of an M&A determines the merger outcome. Researchers and practitioners commonly accept the criticality of the PMI for value creation from an M&A (Angwin & Meadows, 2015). Value creation, a measure of postmerger performance, implies the collective value of the newly created firm is higher than the addition of the values of the individual companies (Barney, 1991; Rahman, Lambkin, & Hussain, 2016; Sarala et al., 2016). Value creation enhances the firm's competitive advantage and improves long-term performance (Barney, 1991; Martin, Butler, & Bolton, 2017). However, Angwin and Meadows (2015) stressed the need for a critical review of the available approaches given what they perceived as limited empirical evidence provided in the studies that proposed the approaches, as well as the largely conceptual nature of the methodologies. Angwin and Meadows stated that the failure of pre-merger approaches in predicting postmerger performance was a significant reason for the development of PMI typologies. Clougherty and Duso (2011) implied that the need for additional typologies is a result of researchers identifying that synergy creation and the subsequent value addition from a merger, comes from multiple means. Angwin and Meadows identified Haspeslagh and Jemison's framework as the most renowned typology for PMI in literature. They also opined that there are potentially four to five additional approaches spanning cultural, psychological, and resource-based integration

approaches. To evaluate the occurrences of the different approaches to postacquisition integration, Angwin and Meadows conducted a mixed-method study of M&A, which they described as a novel for the field at the time of the research. The population for the study was executives of UK companies who have completed an M&A within approximately 2 years of the study. Analysis of the findings revealed support for Haspeslagh and Jemison's PMI approaches of absorption, preservation, and symbiotic, as well as approaches Angwin and Meadows referred to as intensive care and re-orientation, which aligns with the resource-based view. A key premise of Haspeslagh and Jemison's PMI framework is the resource-based view.

The resource-based view (RBV) is another theoretical lens for viewing PMI. The RBV of the firm, based on the work of Wernerfelt (1984), postulates that businesses that have resources that are unique, valued, difficult to imitate, and that other resources cannot substitute, will experience continuous competitive advantage and sustained growth (Henningsson & Øhrgaard, 2016; Nason & Wiklund, 2018; Wernerfelt, 1984). In their work on approaches to PMI, Bodner and Capron (2018) broadly classified the approaches to PMI into two: reconfiguration and organization design. Reconfiguration incorporates the tools used for reassigning or combining resources, product lines, or organizational units (Bodner & Capron, 2018). The implication is that resources drive the reconfiguration process, which is an application of the RBV (Bodner & Capron, 2018). The premise of the RBV is that value creation in a merger can only occur through capabilities transfer (Angwin & Meadows, 2015; Bodner & Capron, 2018). Capabilities represent the unique resources possessed by the firm that enable its operations, decision-

making, and business activities (Henningsson & Øhrgaard, 2016; Nason & Wiklund, 2018; Newmeyer, Swaminathan, & Hulland, 2016). The RBV approach provides firms a way to combine resources from different organizations or units to create value and is premised on the idea that resources drive organizational reconfiguration during PMI, and that the reconfiguration of the resources occurs continuously (Bodner & Capron, 2018). Reconfiguration of the merging companies occurs when their resources are redistributed and reorganized within the newly formed firm. Henningsson and Øhrgaard (2016) also identified the use of RBV as a theoretical approach to PMI of IT. According to Henningsson and Øhrgaard, the resource-based view helps to outline how IT resources could create value postacquisition. A key limitation of RBV is that it positions a firm in a combative association with its external environment, does not foster collaboration, and assumes that only the uniqueness of resources drives mergers (Nason & Wiklund, 2018). These challenges raised the need for a different approach to PMI.

The resource dependence theory (RDT) is another theoretical perspective applicable to PMI. According to Wei and Clegg (2017), RDT is complementary to the RBV. Based on the work of Pfeffer and Salancik (1978), RDT postulates that organizations are limited and impacted by their environments and act to manage their resource dependencies (Hillman, Withers, & Collins, 2009). In their study of the sources of value destruction postmerger, Wei and Clegg integrated RDT and RBV to develop new insights on how strategic resources are identified in acquired firms and redistributed after the merger. Applying RDT to PMI is based on the proposition that businesses are systems with dependencies on their external environments, and therefore, develop

strategies for integration that are reactive or aimed at limiting their external dependence (Gaffney, Kedia, Clampit, 2013; Wei & Clegg, 2017). Applying RDT to M&A, Pfeffer (1976) proposed that a firm seeks merger for three primary reasons, which are (a) to reduce competition by absorbing a competitor, (b) to manage dependence on suppliers or buyers by acquiring them, and (c) to diversify operations to lessen dependence on organizations with which it interacts (Pfeffer, 1976; Wei & Clegg, 2017). The crux of RDT, therefore, is the need for firms to acquire resources that will reduce their dependence on other organizations or the uncertainties of their environments (Wei & Clegg, 2017). This core principle is essential to M&A but limits many mergers and subsequent integration efforts to just eliminating dependencies. In addition to evaluating the use of RDT and RBV in PMI, the social identity theory is another approach to PMI proposed by researchers.

The social identity theory offers a people perspective to PMI. The social identity theory, based on the original work of Henri Tajfel, focuses on group processes and intergroup dynamics (Abrams & Hogg, 1990; Wei & Clegg, 2018). Wei and Clegg (2018) described the central proposition of the social identity theory as the perception of the social world as existing in social categories, and membership of these social categories can impact an individual's self-definition. Applying the social identity theory to M&A can assist in understanding the complex organizational change associated with PMI (Elstak, Bhatt, Van Riel, Pratt, & Berens, 2015; Wei & Clegg, 2018). Through their study of social identity theory and how it impacts organizational identity during PMI, Wei and Clegg (2018) found that different levels of organizational dominance, i.e., low

or high, create different responses and conformity to the new identity. Wei and Clegg (2018) proposed that defining and sorting out the organizational identity issues is a pre-requisite to successful PMI. Wei and Clegg (2018) went further to assert that the findings from their study suggest the need for an alignment between levels of organizational dominance and overall integration approach. Though the theory provides a strong foundation for integrating people and teams, it does not provide an overarching strategy that may be applied to holistically to all aspects of the merging organizations.

Haspeslagh and Jemison's PMI Framework

Different factors influence an organization's approach to PMI. Haspeslagh and Jemison (1991) suggested that these reasons may include the acquiring firm executives' perception of performance, the size of the target firm, types of synergies desired, acquired firm's profitability, strategic or organizational task needs, culture, and the political characteristics of the firm. Haspeslagh and Jemison (1991) stated that how these factors influence PMI is contingent on the strategic intent for the merger and how value will be created postmerger. The main objective of the PMI process is to identify and implement the best way of creating value from the resources available from the merging firms (Bodner & Capron, 2018; Haspeslagh & Jemison; 1991). In their seminal work on PMI, Haspeslagh and Jemison (1991) described integration as a flexible or adaptive process of interaction which occurs when companies merge in an environment that supports the transfer of capability. This process is vital to making mergers successful but fraught with challenges that make it an uncomfortable endeavor for leaders (Haspeslagh & Jemison, 1991; Steigenberger, 2017). The transfer of strategic capabilities is the crux of the

integration process (Bodner & Capron, 2018; Haspeslagh & Jemison, 1991). However, a successful PMI requires the creation of an environment that supports cooperation, collaboration, and learning by the individuals in the merging organizations. Figure 2 is an overview of the acquisition process flow outlined by Haspeslagh and Jemison. Steigenberger (2017) described the process of PMI as the degree of interaction and coordination between the merged firms.

Using a two-dimensional matrix, Haspeslagh and Jemison (1991) described the core dimensions of PMI as strategic interdependence between the acquiring and target firms, and organizational autonomy. The extent of the need for either of the two factors, determine the approach to postacquisition integration and yield the four approaches: absorption, symbiosis, preservation, and holding (Haspeslagh & Jemison, 1991; Malik & Bebenroth, 2018; Marchand, 2015). Strategic interdependence describes how value creation through resource sharing, practical skill transfer, and management capability transfer (Haspeslagh & Jemison, 1991; Schönreiter, 2018). Organizational autonomy describes the degree to which it is necessary to preserve the strategic capabilities of the acquired firm, particularly in areas such as organizational culture (Brueller et al., 2018; Haspeslagh & Jemison, 1991). Understanding and implementing PMI based on a firm's need for autonomy or strategic interdependence is vital for postacquisition success.

Strategic and organizational fit are two vital pre-requisites in the premerger phase of an M&A. Strategic fit describes the means of potential synergy creation in a merger (Bauer et al., 2018; Haspeslagh & Jemison, 1991). Strategic fit indicates a merger's value-creation probability and how the acquired firm complements the parent company

(Bauer et al., 2018; Haspeslagh & Jemison, 1991). According to Bauer and Matzler (2014), three elements determining the strategic fit for M&A are premerger relatedness of the organizations, similarity, and complementarity. Though evaluating the strategic and organizational fit is vital before the merger, these two attributes alone do not indicate how the merger will proceed, or if there will be value created (Bauer & Matzler, 2014; Haspeslagh & Jemison, 1991). Cultural and political fit are other determinants of M&A outcomes evaluated by researchers during the premerger phase (Bauer & Matzler, 2014; Sarala et al., 2016). Though very impactful, neither the premerger nor the postmerger phase can unilaterally determine the outcome of an M&A (Bauer & Matzler, 2014). Effective implementation of both phases is vital. The premerger decision making and PMI processes present different challenges that should be managed appropriately to derive value from the acquisition.

Researchers consider the postmerger phase as the more critical stage of an M&A. Many studies emphasize the criticality of the PMI phase (Bauer & Matzler, 2014; Graebner, Heimeriks, Huy, & Vaara, 2017; Yoon & Kim, 2015). Confusion, stress, communication break-down, and poor performance increases when the PMI is poorly executed (Yoon & Kim, 2015). Scholars have generally described PMI from two perspectives: the organizational behavior or strategic perspective, and the process perspective (Bauer & Matzler, 2014; Graebner et al., 2017; Yoon & Kim, 2015). Haspeslagh and Jemison (1991), and more recently Bauer and Matzler (2014), identified four prevailing perspectives as the capital markets school, strategic school, organizational behavior school, and the process perspective. Graebner, Heimeriks, Huy, and Vaara

(2017) align with the processual view of PMI, describing it as a dynamic multidimensional process through which the merging organizations combine to form one new company. For integration to be successful, every process requires to be managed while allowing for the flexibility to respond to unplanned events during the integration process (Graebner et al., 2017). M&A success therefore depends on the core constructs of the respective school of thought, and may include business reconfiguration, organizational integration, cultural and strategic fit, relatedness, leadership, and postmerger outcomes (Bauer & Matzler, 2014; Bodner & Capron, 2018; Brueller et al., 2018; Henningsson, Yetton, & Wynne, 2018; Zollo & Singh, 2004). Haspeslagh and Jemison's PMI framework closely aligns with the process perspective (Haspeslagh & Jemison, 1991). Haspeslagh and Jemison (1991) suggested a positive M&A outcome depends on (a) a clear understanding of an appropriate integration approach, (b) flexibility and ability to adjust as needed, and (c) ability to execute and deliver as intended.

Achieving a timely and successful postacquisition integration is crucial to attaining the objectives of an M&A. Validating Haspeslagh and Jemison's approaches, Steigenberger (2017) described them as the most influential of PMI models. Similarly, in their mixed methods analyses of postacquisition strategies, Angwin and Meadows (2015) acknowledged Haspeslagh and Jemison's approaches as the most prominent strategy but pointed out that the methods lack enough empirical evidence for or against the typologies. This reasoning formed the basis of the work done by Angwin and Meadows (2015). The research data obtained by Angwin and Meadows (2015), showed empirical

support for Haspeslagh and Jemison's PMI strategies of preservation, symbiosis, and absorption. However, the framework has some limitations.

No singular theoretical framework can account for all potential variabilities in M&A practice. Though highly reviewed and recommended by scholars and practitioners, Haspeslagh and Jemison's PMI has some limitations (Angwin & Meadows, 2015; Bauer et al., 2018; Calipha, Brock, Rosenfeld, & Dvir, 2018). A limitation of the framework is its foundation on the RBV, implying that value creation is only possible through capability transfer (Angwin & Meadows, 2015; Calipha et al., 2018). According to Angwin and Meadows (2015), value creation based on RBV, as proposed by Haspeslagh and Jemison, neglects M&A between organizations with unrelated businesses. Also, Zaheer, Castañer, and Souder (2013) suggested that the relationship between integration derived from the need for strategic interdependence, and autonomy, may be more dynamic and fluid, than as suggested by Haspeslagh and Jemison. Another potential limitation is the thought proposed by Henningsson et al. (2018) that it is preferable, and likely more productive, to adapt a collection of methods when implementing IT integration postmerger or acquisition.

Leadership in M&A

Effective leadership is integral to the success of an organization. Leadership is a complex multi-dimensional process that is crucial to an organization's survival and ability to achieve its mission (Madanchian, Hussein, Noordin, & Taherdoost, 2017; Northouse, 2016). Leadership is a crucial factor in the success of M&A (Bodner & Capron, 2018; Haspeslagh & Jemison, 1991; Rouzies, Colman, & Angwin, 2018;

Sapkota, Ivanov, & Bachman, 2019). However, employees' perceptions of leadership impact organizational performance significantly, and not necessarily the leader's behavior or the intended leadership effect (Jacobsen & Bøgh Andersen, 2015). M&A are periods of organizational change that can introduce a significant level of stress on employees as well as leaders that can impact the merger outcome (Rebner & Yeganeh, 2019; Sapkota et al., 2019; Yoon & Kim, 2015). The role and importance of leadership in M&A have been mainly ignored historically (Sitkin & Pablo, 2005). Recent studies point to a new focus on the role leadership plays in M&A (Naranjo-Gil, 2015). However, gaps remain, and more studies would be beneficial to understanding leadership impact on the outcome of M&A (Junni & Sarala, 2014). A goal of this study is to provide additional insight into leadership impact in M&A through an examination of the relationship between leadership and postmerger performance.

Existing studies on leadership in M&A are limited. Despite the preponderance of research on business leadership, focus on the area of M&A has received little attention (Junni & Sarala, 2014; Northouse, 2016; Osarenkhoe & Hyder, 2015). Junni and Sarala (2014) conducted a meta-analysis of recent empirical studies between 2000 and 2013 on the role and impact of leadership on M&A. Of the 69 studies identified, no specific health care industry-focused research was identified. Rather, the focus of most recent studies of leadership in M&A was on the service, high-tech, and manufacturing industries (Junni & Sarala, 2014). This doctoral study focused on M&A leadership in the hospital and hospital system setting.

Leadership is vital to the success of M&A. Junni and Sarala (2014) identified five main M&A leadership perspectives summing up the direction of prior research into the role of leadership in M&A. These perspectives include the behavior of M&A leaders, critical studies like gender impact on M&A leadership, traits, and power and politics in M&A leadership. According to Junni and Sarala (2014), significant evidence exists in support of leadership impact on M&A performance, integration outcomes, and employee/manager reactions. Similarly, Steigenberger (2017), in a meta-analysis of the challenge of M&A integration over the prior 30 years, found that leadership interventions, communications, and structural interventions in the form of integration depth and speed are crucial to M&A success. Steigenberger (2017) further emphasized the need for additional research on the impact of leadership and structural interventions in M&A. Steigenberger (2017) posited that such an examination would provide a better understanding of the factors for the success or failure of M&A integrations. The qualitative case study by Jap, Gould, and Liu (2017) affirmed the findings of Junni and Sarala (2014) as well as Steigenberger (2017). In their study of a merger to form a global bank, Jap et al. (2017) found that a deliberate and strategic approach to the M&A process involved leadership planning, internal and external stakeholder involvement, brand repositioning, and planning for IT integration. Jap et al. (2017) identified that these factors, in addition to effective leadership, a customer-focused approach, and organizational flexibility as critical to M&A integration success.

M&A leadership studies have been more focused on pre-merger roles of leaders, and less on the integration or postagreement phase. According to Osarenkhoe and Hyder

(2015), executive leaders of organizations agree that integrating newly merged firms is very crucial to the success of the merger, and of greater importance than other strategic efforts at such periods. The PMI phase places a significant amount of pressure on leaders' organizational, personal, and crisis management abilities (Appelbaum, Gandell, Shapiro, Belisle, & Hoeven, 2000). Researchers have found that postmerger stress and leadership have a statistically significant impact on PMI and postmerger performance (Yoon & Kim, 2015). The uncertainties and stress introduced as a result of the organizational transition occasioned by a merger or acquisition dictate the need for effective leadership to lessen the people impact, communicate, create the right environment, and successfully implement the transition (Bradley, 2016; Savovic, 2017; Yoon & Kim, 2015). The available evidence suggests a positive leadership impact on PMI. Despite the evidence, studies are limited and more research into how leadership impacts the postmerger process would enhance available knowledge and increase the probability of achieving successful M&A integration.

Understanding how leadership impacts postmerger performance (PMP) is crucial to enhancing the success of M&A. Leaders provide direction, ensure alignment across the organization, and commitment to the corporate goal (Clay-Williams, Ludlow, Testa, Li, & Braithwaite; 2017). A thorough understanding of the impact of leadership on the M&A process and outcome is limited amongst scholars and practitioners (Gomes et al., 2013). In a study of the impact of the dimensions of transformational leadership on PMP, Savovic (2017) found that leadership, and specifically transformational leadership, positively impacts PMP. Savovic (2017) carried out a quantitative study to assess the

impact that inspirational motivation, idealized influence, individual consideration, and intellectual stimulation, the dimensions of transformational leadership have on PMP. Savovic (2017) hypothesized that transformational leadership positively influences PMP and that transformational leaders encourage workers to accept change, which in turn impacts PMP positively. Savovic (2017) also hypothesized that transformational leaders could positively impact PMP through individual consideration of each employee. Using Bass and Avolio's (2000) Multifactor Leadership Questionnaire to survey participants, analysis of the findings by Savovic (2017) showed that all the four dimensions of transformational leadership evaluated have a positive impact on PMP. Similarly, Vasilaki, Tarba, Ahammad, and Glaister (2016) found that the leadership style impacts the approach to people integration into the new organization postmerger. Human integration and organizational identity impacts employee behavior, which ultimately impacts PMP (Vasilaki et al., 2016). The implication of the studies by Savovic (2017) and Vasilaki et al. (2016) is that leadership impacts performance in a merger. The effectiveness of leadership is, therefore, crucial and integral to achieve the desired outcomes from M&A.

Successful PMI is vital to the outcome or performance of a merger and researchers have found evidence supporting the criticality of clinical leadership in PMI in a hospital setting. Through systematic research of multiple studies, Ingebrigtsen et al. (2014) found evidence that showed that clinical leadership impacts the outcome of health care IT adoption. According to Ingebrigtsen et al. (2014), health care IT adoption and integration impacts cost-effectiveness, patient care, and ultimately, a hospital's

performance. Emphasizing the importance and impact of health care leadership on performance, Sarto and Veronesi (2016) evaluated the subject through a systematic analysis of existing studies. According to Sarto and Veronesi (2016), most research has focused disproportionately on financial and operational resources. Sarto and Veronesi (2016) amplified the need to focus on other areas of study, such as social performance and quality of care as measures of performance. Sarto and Veronesi (2016) found that clinical leadership enhance hospital efficiency and effectiveness, improve decision-making, and provide significant benefit to the hospital. The point by Sarto and Veronesi (2016) emphasize the need to evaluate the impact of leadership on the PMI performance. Further supporting the findings of Ingebrigtsen et al. (2014) and Sarto and Veronesi (2016) is the quantitative study by Naranjo-Gil (2015) on the role of top management teams in hospitals facing strategic change and the impact on performance. Naranjo-Gil (2015) found that the quality, experience, and diversity of senior leadership impacts the ability of an organization to manage the short-term performance challenges that may result from a merger and effectively strategized for improved long-term results.

There is consensus on the importance of effective strategic leadership in influencing M&A outcomes. Strategic leadership, in this instance, refers to executive or senior-level leaders of organizations. Haspeslagh and Jemison (1991) stated that senior-level leaders tended to pass on the management of the PMI phase to mid or lower-level managers, a situation that potentially creates a gap or limitation to the smooth implementation of the postmerger phase. A correlation exists between leadership type and M&A approach (Angwin & Meadows, 2009). Specifically, Angwin and Meadows

(2009) found that alignment exists between the kind of executive and the strategic interdependence approach to M&A, while no such alignment exists for the holding approach to M&A. The finding implies a direct impact on the integration approach and, ultimately, PMP. Furthermore, the criticality of leadership to postmerger success is accentuated by the impact of the choice of PMI strategies, speed of integration, communication, corporate culture, human resource management, and other leadership decisions on M&A outcomes (Gomes et al., 2013; Rouzies et al., 2018). A seemingly obvious implication of these studies is that leadership needs to be engaged and involved in the PMI process and should be effective.

Leadership Involvement

Measuring leadership involvement in M&A is not something researchers have done in the past. Despite the well-acknowledged criticality of the postmerger phase of an M&A, gaps in literature and research into this phase of M&A persist (Angwin & Meadows, 2015; Weber & Tarba, 2013). Dahl and Olsen (2013) suggested that leadership involvement is a quality based mainly on employees' perception of leadership. Dahl and Olsen (2013) and Henningsson, et al. (2018) argued that leadership involvement (LI) reflects workers' perception of the extent to which leaders engage in the planning and execution of work operations, in this regard PMI, and participate in creating a facilitating environment for collaboration, communication, and quality or safety compliance. Other researchers have stated that leadership is central to an organization's drive toward quality and excellence, regardless of the industry (Birken et al., 2015; Kanji, 2008). Leadership that is participative or involved is essential to continuous quality improvement and

enhance organizational excellence (Kanji, 2008). Other researchers have linked leadership involvement as predictors of organizational excellence, stating that organizational excellence implies the efficiency of operations and effectiveness in service (Thürer, Tomašević, Stevenson, Fredendall, & Protzman, 2018). Leadership effectiveness can be determined by how much an organization's performance is enhanced under the direction of a leader (Datta, 2015; Yukl, 2013). Similarly, patient outcomes provide a means of measuring the effectiveness of service in hospital settings (Porter, Larsson, & Lee, 2016). Better hospital quality index scores are indicative of leadership effectiveness and involvement in activities impacting quality outcomes (Datta, 2015; Goff et al., 2015; Parand, Dopson, Renz, & Vincent, 2014; Tasi, Keswani, & Bozic, 2019; Vaughn et al., 2006). Quality patient outcomes or hospital quality are, therefore, indicative of LI.

Safety or quality leadership reflects LI. Quality leadership reflects participative management (O'Dea & Flin, 2001). Participative management essentially means LI (Dahl & Olsen, 2013; O'Dea & Flin, 2001). Quality delivery is a useful measure of LI in health care delivery (McKean & Snyderman, 2019). Evidence from research shows that senior, executive, or strategic leadership directly impacts safety climate and patient outcomes (Kelloway, Mullen, & Francis, 2006; McFadden, Stock, & Gowen, 2015). Leadership that is involved enables improvements in patient safety and quality outcomes (Barling, Loughlin, & Kelloway, 2002; Kelloway et al., 2006; McFadden et al., 2015; Rankin et al., 2016; Sandberg, 2018). Involved leadership is crucial to any business or process implementation (Richter et al., 2016; Sandberg, 2018). Therefore, quality metrics are

viable and credible measures of LI. Also, senior leadership involvement has a moderating effect on the quality of care and patient safety outcomes.

M&A activity impacts patient quality of care outcomes. In a study of the impact of hospital mergers on treatment intensity and patient outcomes, Hayford (2012) found a negative impact on patient health outcomes. Using data from California's Office of Statewide Health Planning and Development (OSHPD) for 1990 through 2006, which included 40 mergers, Hayford (2012) identified an increase in patient mortality rate and the use of bypass surgery and angioplasty in patients with heart disease (Hayford, 2012). This study showed a clear association between the quality of patient outcomes and hospital M&A activity. This finding and the direct relationship between LI and quality provided a viable argument for the direction of this study. Another research crucial to this study's direction was the work of Arvonen and Pettersson (2002) on leadership as a predictor of cost and change effectiveness. In a study of 49 departments of a Swedish firm, Arvonen and Pettersson (2002) found evidence supporting leadership involvement as a predictor of cost and efficiency. This finding is informative on the use of cost reduction and efficiency measures to measure leadership involvement in creating a supporting and productive postmerger environment. Reinforcing this direction is the evidence that attaining cost efficiencies is an underlying driver for hospital mergers (Hayford, 2012; Schmitt, 2017). Cost reduction and efficiency is also an essential metric in the Center for Medicare and Medicaid's hospital value-based purchasing program. Another vital consideration is that M&A typically involves efforts at achieving synergy through resource sharing or transfer (Brueller et al., 2018; Hayford, 2012; Osarenkhoe &

Hyder, 2015). A product of synergy creation is potential service consolidation, which theoretically, should result in improved patient outcomes, cost efficiency, and cost reduction (Avdic, Lundborg, & Vikström, 2019; Colla, Bynum, Austin, & Skinner, 2016; Hayford, 2012; Schmitt, 2017). The implication is that using quality improvements as a measure of LI and a factor in health care M&A is a practice supported by research.

IT Integration

IT integration is critical to achieving efficiencies and providing access to better patient care. IT provides hospitals with a means of making health care delivery systems safer, more accessible, efficient, and affordable (Agarwal, Gao, DesRodes, & Jha, 2010; Bowens, Frye, & Jones' 2010; Ross, Stevenson, Lau, & Murray, 2016; Singh & Sittig, 2016). Though questions remain on the relationship between health care IT (HIT) and hospital performance, researchers have found that HIT contributes to improving profitability, providing competitive advantage, reducing cost, minimizing errors, and significantly reducing waste (Mello, Chandra, Gawande, & Studdert, 2010; Wang, Wang, & McLeod, 2018). An integrated HIT system enables hospitals to improve the quality of care, productivity, and financial performance (Kohli & Tan, 2016; Wang et al., 2018). With the strategic objectives of many hospitals and health care M&A being to improve market positioning, achieve efficiencies, improve and consolidate care delivery, ensuring an efficient integration of the IT systems of the merging hospitals is therefore vital to the overall success (Bradley, 2016). However, achieving a successful integration does not come easily.

Integrating the IT systems of merging organizations poses a significant challenge. PMI significantly determines the success or otherwise of M&A (Angwin & Meadows, 2015; Baker & Niederman, 2014; Chang et al., 2014; Henningsson et al., 2018; Steigenberger, 2017). Researchers identified IT integration as essentially the most challenging and crucial of all areas pertinent to the outcome of the M&A due mainly to the dependence of businesses on their information systems, particularly in health care (Baker & Niederman, 2014; Bradley, 2016; Chang et al., 2014; Henningsson et al., 2018). It, therefore, seems imperative to develop an effective plan for the integration process, with a considerable focus on IT. However, the gaps in the literature on the relationship between IT integration and postmerger performance present an opportunity for further research that will be beneficial to business practice.

Defining the IT integration strategy is a necessity for an effective PMI. A clear business strategy that aligns with the IT integration strategy is vital for success (Baker & Niederman, 2014; Bradley, 2016). Misaligned business and IT strategy create a challenge that may not be easily overcome (Baker & Niederman, 2014). IT integration strategies must incorporate IT infrastructures, applications and data systems, IT management, policies, and support (Chang et al., 2014; Wijnhoven, Spil, Stegwee, & Fa; 2006). Using three case studies of hospitals in M&A, Wijnhoven et al. (2006) proposed a business-IT alignment model based on Haspeslagh and Jemison's PMI framework. According to Wijnhoven et al. (2006), if the merger objective is absorption, a situation where the acquired firm is fully absorbed into the acquiring company, IT integration objective would be a complete integration of all IT resources. If symbiosis or preservation are the

M&A objectives, IT integration goals would be partial integration or a co-existence of the firms' IT resources, respectively (Chang et al., 2014; Lohrke, Frownfelter-Lohrke, & Ketchen, 2016; Wijnhoven et al., 2006). Wijnhoven et al. (2006) further stated that possible IT integration approaches are (a) renewal, (b) takeover, (c) standardization, and (d) synchronization. Table 1 shows the M&A goals and the aligned IT integration strategies, as identified by Wijnhoven et al. (2006). Baker and Niederman (2014) described these strategies as transformation, consolidation, combination, or co-existence, while Henningsson and Kettinger (2016) similarly categorized the IT integration approaches as renewal, absorption, best of the breed, and co-existence. Renewal or transformation implies the formation of a new IT entity with new designs and processes (Baker & Niederman, 2014; Wijnhoven et al., 2006). When the IT integration is a takeover, the IT systems of one of the merging firms are wholly absorbed by the other, while standardization and synchronization involve integrating comparable IT operations and minimal integration, preserving the IT entities, respectively (Wijnhoven et al., 2006).

Table 1

M&A Strategies and IT Integration Approaches

M&A integration ambition	M&A objectives	IT integration objectives	IT integration approaches
High	Absorption	Complete IT integration	Renewal Takeover Standardization
Moderate	Symbiosis	Partial IT integration	Standardization
Low	Preservation	IT coexistence	Synchronization

Note. Adapted from "Post-merger IT integration strategies: An IT alignment perspective," by F. Wijnhoven, T. Spil, R. Stegwee, and R. T. A. Fa, 2006, *The Journal of Strategic Information Systems, 15*, p. 10. Copyright 2006 by Elsevier.

In examining the criticality of IT integration to the outcome of M&A, Henningsson and Kettinger (2016) stated that possible outcomes of failed integration efforts include business inefficiencies, business disruption, unrealized potential, staff reaction, delay, and overspending. Furthermore, Henningsson and Kettinger (2016) found five contextual factors for IS integration failure as time pressure, complexity, inflexibility or merger unreadiness, sociotechnical differences, and power relations. Mitigating IT integration and PMI failure requires a significant reliance on organizational leadership (Henningsson & Kettinger, 2016). This finding supported a key premise of this study. Other researchers have provided health care-specific insights on postmerger IT integration.

M&A in the health care provider space transcends activities between hospitals and hospital systems. In a mixed study of M&A activity between hospitals and physician

practices, West et al. (2017) found that though clinical integration was limited between the hospitals and the practices, all hospitals fully integrated their HIT systems. This finding by West et al. (2017) is significant in the light of Haspeslagh and Jemison's (1991) PMI framework through which they asserted that organizations would either pursue a strategic interdependence or organizational autonomy approach to integration. According to Haspeslagh and Jemison (1991), whichever of the two approaches is preferred or implemented determines the level of the integration achieved. When there is a high desire for strategic interdependence and a low appetite for organizational autonomy, the outcome is absorption. Absorption occurs when the processes, resources, and assets of the acquired firm are fully taken over and replaced with the acquiring company's systems without any deference to which of the organizations may have the superior system (Haspeslagh & Jemison, 1991). On the opposite end of absorption is preservation, which occurs when strategic interdependence (SI) is a low priority while maintaining organizational autonomy (OA) is of a higher priority (Haspeslagh & Jemison, 1991). Symbiosis, a third possible outcome of the mix of the two approaches, occurs when SI is high, and OA is a top priority as well. The findings by West et al. (2017) on minimal clinical integration with fully integrated IT systems, point to Symbiosis as the approach taken by all the hospitals in their study and makes understanding the relationship between health IT integration and postmerger performance vital.

The impact of IT on organizational performance has been the subject of several studies. Rivard, Raymond, and Verreault (2006) used an integrated model that comprised

of a resource-based approach and a competitive strategy framework to evaluate the contributions of IT to business. Using a mixed approach for their study, Rivard et al. (2006) found significant support for their integrated model and evidence affirming the vital role of IT for more excellent organizational performance. According to Rivard et al. (2006), the results show a significant correlation between IT support for strategy and market performance. Similarly, Rivard et al. (2006) found a meaningful relationship between IT support for firm assets and profitability. These findings show that IT is critical to organizational performance. In a study of the relationship between IS strategy and organizational performance, Leidner and Preston (2011) similarly found that IT is crucial to business performance and that performance diminishes where there was no clear IT strategy. Therefore, ensuring proper planning and implementation of IT changes during a merger and acquisition is vital merger performance. Williams, Mayer, Chien, and Williams (2015) conducted a qualitative phenomenological study of the factors that impact IT integration in a postmerger environment. Williams et al. (2015) stated that they intended to derive information that may be a useful guide for business leaders tasked with leading IT integration efforts, and for strategic decision-makers. Also, Williams et al. (2015) sought to understand the relationship between entropy and the five postmerger factors of leadership, communication, organizational culture, people, and strategy. Though the researchers showed a relationship between the factors identified and postmerger IT integration, the extent of the impact was not fully defined. The researchers suggested that further research might help with providing the desired clarity and measures.

Beyond IT integration and leadership, researchers have identified several other factors that impact M&A outcomes. Integration speed and a people-first approach toward integration are crucial factors (Jap, Gould, & Liu, 2017; Uzelac, Bauer, Matzler, & Waschak, 2016). Additional factors identified in the literature include communication and interactions between merging firms, alignment, knowledge transfer, geography, and economic value (Graebner et al., 2017; McCarthy & Aalbers, 2016). The divergent views amplify the need for clarity and more empirical study of factors impacting postmerger performance (PMP).

Postmerger Performance

Evaluating postmerger performance (PMP) of businesses is an area of significant interest to scholars and researchers. Reddy et al. (2019) evaluated mergers in India and China from 2004 to 2006 to determine if these mergers created value. According to Reddy et al. (2019), value creation is a measure of PMP. Using a representative sample of 140 M&A events, with 70 randomly selected from the Shanghai and Shenzhen Index in China and 70 randomly chosen from the BSE 100 Index in India, respectively, Reddy et al. (2019) conducted a quantitative study of the activities to assess the PMP. Relying on existing empirical studies, Reddy et al. (2019) chose the use of abnormal returns, other financial metrics like the return on equity (ROE) and return on assets (ROA), and volatility to test if M&A created value postmerger. The results from the study showed that M&A did not initially generate value in Chinese firms but added significant value later. Analyses of Indian firms showed that M&A did not create value initially or later postmerger. The results observed from the Indian market diverged from the Chinese

market and is a pointer to the implication that profiting from an M&A cannot be assumed. Leaders need to effectively evaluate their firm's market and dynamics before embarking on an M&A. In another investigation of sources of value creation or destruction in a merger or acquisition, Ibrahimi and Meghouar (2019) evaluated horizontal M&A using quantitative methods. Ibrahimi and Meghouar (2019) identified several factors that should provide useful information to business leaders on the factors that enhance effective PMP. Ibrahimi and Meghouar (2019) found that the value creators included business turnover, operational cost, savings or profit from tax, and reduction in fixed assets. Postmerger value destroyers identified included debts, operating expenses, and significant variations in finance charges (Ibrahimi & Meghouar, 2019). The results from these studies may also be considered a testament to the fact that there are many determinants of the outcome of a merger.

Improving business performance is an important strategic objective of M&A. The evidence, however, suggests mixed results in performance (Henningsson & Kettinger, 2016; Jap, Gould, & Liu, 2017; Rahman & Lambkin, 2015). Zhang, Wang, Li, Chen, and Wang (2018) reported that studies on the performance results of acquiring firms had shown inconsistent results. In a study of the performance impact of M&A on firms in emerging economies, Zhang et al. (2018) found a positive correlation between the type of M&A and business performance, which they evaluated in financial terms like return on assets and price-earnings ratio. According to Zhang et al. (2018), a positive relationship exists for value-chain-extension and technology-driven mergers. This finding, according to Zhang et al. (2018), supports the need for firms to focus on resource integration post-

M&A to achieve better results. Schmitt (2017), on the other hand, posited that hospital mergers should result in a reduction of costs. In a quantitative study of hospital mergers in the United States between 2000 and 2010, Schmitt (2017) found that acquired hospitals achieved a cost reduction between 4 and 7% in the years after the merger. Cost reduction impacts performance positively (King, 2017; Schmitt, 2017). Schmitt's findings support the theory that cost reductions achieved through M&A will enhance performance in a merger focused on extending the value-chain through expansion or entry into new markets (Zhang et al., 2018). Other factors impact M&A outcomes.

Researchers have used different metrics to assess and measure the factors that impact the performance of hospitals. Indicators such as financial performance, efficiency, effectiveness, patient safety, quality, employee satisfaction, work-life balance, mortality rates, cost, readmission rates, and many more, have been used by researchers to evaluate the performance of hospitals (Davis et al., 2013; Gu & Itoh, 2016; Markazi-Moghaddam et al., 2016). Wang et al. (2018) conducted a quantitative study of the impact of investments in HIT on hospital performance and productivity. Wang et al. (2018) found that investments in HIT correlate positively with a hospital's financial performance. Pourmohammadi, Hatam, Shojaei, and Bastani (2018) took a holistic approach in their meta-analysis of existing studies on hospital performance, to determine the critical performance indicators. Pourmohammadi et al. (2018) found that factors impacting hospital performance may fall into three categories: efficiency or utilization, financial, and effectiveness. Efficiency and utilization are further dependent on cost, the number of hospital beds as well as human resources, technology utilization, and clinical resource

utilization. Effectiveness, on the other hand, is a measure of quality, safety, and responsiveness to patient needs, the employees, and the community at large. In a review of the literature on hospital performance from 1977 to 2014, Markazi-Moghaddam et al. (2016) found significant references to quality, safety, mortality, readmission rates, and patient satisfaction as indicators of hospital performance, in addition to efficiency and effectiveness. In their work on the role of service quality on hospital performance, Lim et al. (2018) found evidence supporting a relationship between service quality, patient satisfaction, and hospital financial performance. Hospital performance is, therefore, multi-dimensional and goes beyond financial results (Lim et al., 2018; Markazi-Moghaddam et al. , 2016; Pourmohammadi et al., 2018).

Determining the PMP of a hospital system is essential to understanding if the merger achieved the expected benefits and the implications the change may have on the merged organization's future direction. Traditional performance measures focus mainly on the financial metrics of an organization postmerger (Rahman & Lambkin, 2015). Measuring hospitals' PMP provides a different challenge because they are primarily involved in providing care to their patients and communities (Gu & Itoh, 2016; Pourmohammadi et al.; 2018). In a study of health system frameworks across eight countries, Braithwaite et al. (2017) identified key performance indicators used by governments, regulatory, and professional bodies to measure how well a hospital is doing. Braithwaite et al. (2017) conducted a systematic review of the available literature first to identify comparable nations using performance indicators for monitoring health care. The eight countries identified were England, Canada, United States, Denmark,

Australia, New Zealand, Scotland, and The Netherlands. Next, Braithwaite et al. (2017) determined the specific indicators, assessed each for applicability, and then compared the frameworks for each country. The results of the study showed that the leading performance indicators are access to care, patient experience, safety and quality, efficiency, and population health outcomes. According to Braithwaite et al. (2017), these internationally recognized indicators provide a universal and logical method of measuring a hospital's performance. Monitoring these qualities provide the necessary pressure on hospitals to improve and achieve better outcomes (Braithwaite et al., 2017; Parand et al., 2014). Applying these non-financial metrics to measuring a hospital's PMP will, therefore, be consistent with research. King (2017) agreed with the value of quality metrics as identified by Braithwaite et al. (2017) but went a little further to stress the importance of other parameters, mainly to regulatory authorities in the U.S. Federal Trade Commission (FTC), which monitors mergers between hospitals. In an article analyzing the current state of health care in the United States, King (2017) stated that the FTC imposed restrictions on mergers forced a halt on transactions that are perceived to undermine the quality of clinical care and severely impact health care costs for the consumer through a potential increase in prices. The focus of the FTC on quality of clinical care is an indicator of the importance of using quality metrics like those identified by Braithwaite et al. (2017) in determining PMP. However, other views exist among researchers. Greaney (2018) agreed that achieving efficiencies through vertical mergers and integrated care delivery systems is vital but seems to dissent on the relative importance when compared with the economic impacts from such alliances. Greaney

(2018) opined that gaps exist in current antitrust laws and measurements of the effects of health care mergers, stating that the economic and market impact of vertical mergers needs careful monitoring. The authors of all three studies reviewed help to emphasize the importance of appropriate PMP measurements to all stakeholders.

Performance diminishes when M&A impacts organizational effectiveness. In an article presenting the results of their study of exergy destruction in mergers, Olcay, Öner, and Olcay (2019) raised some valid points about the mixed outcomes of M&A. Exergy is the maximum amount of useful work possible (Kalogirou, Karellas, Badescu, & Braimakis, 2016). According to Olcay et al. (2019), research shows that M&A often results in reduced innovation and multiple failures (Federico, Langus, & Valletti, 2018). Though much debate continues, Olcay et al. (2019) approached assessing the subject by conceptualizing M&A performance as exergy, using the principles of thermodynamics analysis of mixing physical systems as the basis of their approach. According to Olcay et al. (2019), horizontal mergers typically develop out of the desire to reduce cost, increase negotiation, and market power, and diminish competition. Vertical mergers, on the other hand, seek to maximize benefits through synergy (Koch, Wendling, & Wilson, 2017; Olcay et al., 2019). Using a mixed-methods approach that relied on secondary data sources, Olcay et al. (2019) summarized factors that influence pre-merger performance as cultural fit, strategic fit, and company and industry attributes. Olcay et al. (2019) stated that these considerations are as vital to successful M&A performance as other postmerger factors that researchers have studied with varied results. Applying the principles of thermodynamics to M&A, Olcay et al. (2019) found that the exergy of the newly formed

firm is lower than the sum of the exergies of the companies before the merger or acquisition. When the merged firms are less compatible culturally or strategically, the exergy loss from a merger is higher (Olcay et al., 2019). A potential implication of the findings of Olcay et al. (2019) is a reduction in performance in the newly formed company, due to a loss of exergy. Insights from Olcay et al. (2019) align with the views expressed by Zaheer et al. (2013) on synergy sources and PMIs. Zaheer et al. (2013) found that firms may disaffect employees of acquired companies when they seek to leverage similarities and complementarity through a high level of PMI. Employee disaffection may invariably lead to loss of effort and work performance. Bereskin, Byun, Officer, and Oh (2018), in their quantitative analysis of the effect of cultural similarity on M&A outcomes, found that a higher cultural fit bodes well for the performance of an M&A. Considering the cultural fit and strategic fit as critical pre-merger factors enables the improvement of the postmerger performance of the newly formed company (Bereskin et al., 2018; Olcay et al., 2019). For leaders, these studies imply that careful analyses of factors beyond financial or market metrics should go into the decision-making and review process for M&A. Multiple influences determine postmerger performance, which business leaders need to be aware of and integrate into their planning.

Transition

Hospital business leaders need to understand how to maximize the postmerger performance of their organizations. This need becomes even more critical as the rate of M&A among hospitals will grow over the next several years, and evidence abounds that a significant percentage of M&A fail to achieve pre-merger goals (Chang et al., 2014;

Friedman et al., 2016; Rebner & Yeganeh, 2019). Better performing hospitals imply better care delivery, improved patient outcomes, business viability, and profitability (Fleishon et al., 2017). Understanding the relationship between IT integration, senior leadership involvement in the merger process, and postmerger performance would contribute to the industry knowledge and help business leaders to lead their organizations more effectively through M&A.

This section included the purpose of this study, the research question and hypotheses, and a review of representative literature relevant to the study. The subsequent sections expand on the study. Section 2 provides information on the research method and design, while Section 3 includes the study, the findings, and conclusions.

Section 2: Project Design and Process

Successful M&A are crucial to hospitals and health care organizations. Understanding the relationship between critical factors could be pivotal in determining how well a hospital is able to continue to serve its patients and community. Section 2 includes detailed information about the study method and design. This section also includes a discussion on the sources of data, the data analysis, and important ethical considerations.

Method and Design

Aligning research method and design to the type of study is essential to the research process and outcome. The following subsection includes an evaluation of the research methodology and the reasoning informing the choice.

Method

The purpose of this quantitative ex post facto study was to examine the relationship between IT integration, senior leadership involvement in PMI, and postmerger performance of hospitals. The population consisted of senior leaders of general acute care hospitals and hospital systems located in the midwestern states of Ohio, Michigan, Indiana, Illinois, and Wisconsin with prior involvement in a successful merger or acquisition. The results of this study may enhance hospital leaders' understanding of achieving desirable results from M&A. The implications for social change include the potential to have a better understanding of how to improve postmerger hospital performance, thereby enhancing the ability of health care organizations to

provide quality care for their communities, increase positive patient outcomes, and encourage the overall well-being of their communities.

I chose to use a quantitative research methodology for this study. The quantitative research methodology is fact driven, relies on measurements and numeric data, and is more akin to the positivist philosophy (McCusker & Gunaydin, 2015; Saunders, Lewis, & Thornhill, 2015). The problem of study points to the existence of factors that impact the outcome of a business decision, which lends to positivism as a philosophical approach and partly informed the choice of a quantitative methodology. Also, quantitative research is best suited for testing theories or hypotheses and for explaining a business or social change through impartial measurements and factual analysis of data (Fassinger & Morrow, 2013; Firestone, 1987; McCusker & Gunaydin, 2015). Quantitative research is suitable for determining the relationships between two or more variables, which was the goal of this study. Some of the disadvantages of quantitative methods include their limitation in propelling a deeper understanding of a phenomenon beyond what the numerical data show (Barnham, 2015). Quantitative methods are not useful for evaluating the experiences of participants or for assessing their meanings (Barnham, 2015; Saunders et al., 2015). Qualitative methods would be more appropriate in such cases. Qualitative research is exploratory and uses open-ended and nonnumeric data (Barnham, 2015; Saunders et al., 2015). Qualitative research is appropriate for developing an understanding of a social phenomenon and interpreting experiences (Sumskis & Moxham, 2017). A qualitative research approach would have been fitting for this study if the goal were to discover the strategies that can enhance the performance of an M&A.

The primary research question for the study is: What is the relationship between IT integration, senior leadership involvement in PMI, and postmerger performance in hospitals?

H_0: There is no statistically significant relationship between IT integration, senior leadership involvement in PMI, and postmerger performance.

H_a: There is a statistically significant relationship between IT integration, senior leadership involvement in PMI, and postmerger performance.

Design

Secondary data analysis affords a researcher with a cost-effective way of using archival data to evaluate new research questions. Secondary data analysis is a reliable research option for answering new research questions when the source and process of data collection are reliable and credible, and the original study fits the new inquiry (Boo & Froelicher, 2013; Johnston, 2017). Advances in technology have enhanced the ability to gather and transfer large quantities of data, usable for secondary data analysis; however, it does not minimize the need for quality and a reasoned theoretical approach to the research (Boo & Froelicher, 2013; Johnston, 2017). I used secondary data analysis for this study.

The ex post facto research design is a nonexperimental design commonly used in social research. The ex post facto design allows for a study to begin after the event has occurred (Giuffre, 1997; Salkind, 2010). A benefit of this design is the absence of influence over events or data captured since it occurs after the fact, and the event measured is real (Giuffre, 1997; Salkind, 2010). Another advantage of the ex post facto

design is that it enhances ethically acceptable research because it eliminates the exposure of participants or study subjects to potentially harmful experiments. However, a potential shortcoming of the design is in the area of internal validity. This limitation is due to a lack of control over the independent variables and participant selection (Salkind, 2010). Lack of internal validity will limit the ability to determine causality (Ittner, 2014; Salkind, 2010). Internal validity issues may be overcome or minimized by controlling for influences that may impact the outcomes of the study (Ittner, 2014). The goal of this study was not a determination of the causal effect of a variable or its impact, but to establish if a relationship exists among crucial variables, resulting in specific, measurable facts. An experimental design would have been inappropriate for the timeframe and scope of this study.

Data Analysis

The AHA and Irving Levin Associates are health care industry-recognized sources of information and M&A intelligence. Researchers have widely used data from AHA and Irving Levin Associates (King. 2017; Schmitt, 2017). I utilized data from Irving Levin Associates and AHA to identify the target hospitals with a history of M&A from 2013 to 2017 in the midwestern states of Ohio, Illinois, Indiana, Michigan, and Wisconsin. Archival data from the Center for Medicare and Medicaid Services and AHA's annual survey of hospitals (ASDB) and its supplemental IT survey (ITDB) were the primary sources of data for the analysis. The AHA data included responses to AHA's annual survey and supplemental IT survey of hospital chief executives. Researchers support the use of an archival data collection technique as a viable, credible, and practical

approach to data collection (Ellram & Tate, 2016; Schmitt, 2017; Shultz, Hoffman, & Reiter-Palmon, 2005). The AHA data are valid, reliable, and credible (AHA, 2020; Schmitt, 2017). The data source is relied on by the Office of the National Coordinator for Health Information Technology (ONC), a governmental policy making agency of the Office of the Secretary for the U.S. Department of Health and Human Services (HHS), as well as the U.S. Census Bureau and Center for Medicare and Medicaid Services (AHA, 2020). I linked the data from AHA with the Hospital Compare data (HCDB) from the Center for Medicare and Medicaid Services (CMS). The Medicare Provider Identifier links the two data sets. All Medicare-certified providers, which is essentially almost every hospital in the United States, are required to submit annual costs and operational reports to CMS (Center for Medicare & Medicaid Services, 2016; Schmitt, 2017). This report, in addition to the results from the survey of patient's experiences by CMS, culminates in the Hospital Compare data (Center for Medicare & Medicaid Services, 2016). A vital measure of the Hospital Compare information is CMS' Total Performance Score (TPS). The TPS, according to CMS, is a composite score that links hospital quality to Medicare payment and measures a hospital's performance in (a) clinical care, (b) patient and caregiver-centered experience of care, (c) safety, and (d) efficiency and cost reduction. A few essential assumptions regarding the archival data were that (a) the data were not manipulated in any way to portray specific results, (b) all data were truthful and accurately reflect the state of the hospitals at the point of data collection, and (c) the information was obtained ethically from the chief executives or designated leaders of the

respective hospitals. Missing data present a potential problem that impacts research reliability. Data analysis for this study included only complete data.

Data source mapping

The AHA ITDB is a supplement of the ASDB. The survey instruments are complementary and both data contain the same hospital demographics and primary identifiers. Figure 4 shows the study approach, with the incorporation of TPS data from CMS' HCDB. The HCDB contains general hospital information, results from the survey of patients' experiences, measures of the quality of care, payment, and value of care received. The HCDB contains information that could provide valuable data for the variables for my study but has limitations as a singular source of comprehensive data for the study. The independent variables (IVs) for my study were IT integration and senior leadership involvement. The dependent variable (DV) was postmerger performance. The IT integration predictor variable was nominal (categorical), whereas senior leadership involvement (IV) and postmerger performance (DV) were of the ratio scale of measurement (continuous).

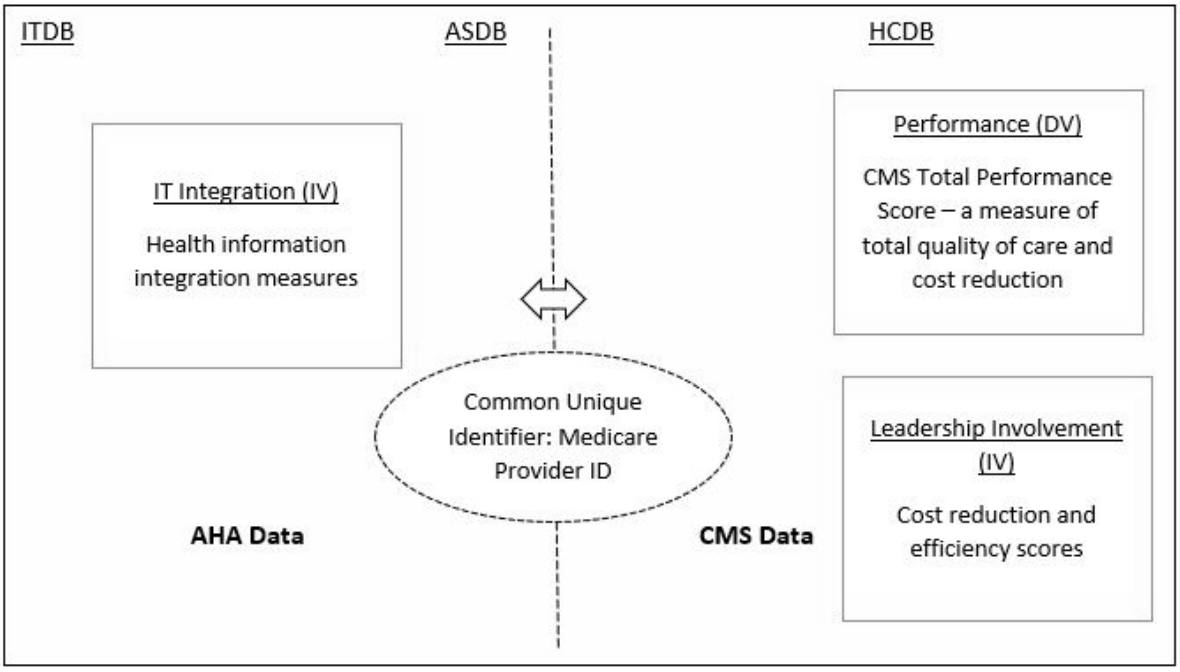

Figure 4. Data source mapping. AHA data supplemented with CMS total performance score.

Data Analysis Techniques

Several data analysis techniques are available and utilized by researchers for quantitative and qualitative studies. I leveraged the multiple linear regression data analysis technique for this study. Other quantitative analysis methods include the *t*-test and the analysis of variance (ANOVA). According to Green and Salkind (2017), the *t*-test is useful for evaluating hypotheses that involve a single mean or the difference between two means. The ANOVA is a tool for assessing the relationship between one or more factors and a dependent variable (Green & Salkind, 2017). The type of ANOVA appropriate for analysis depends on the number of factors available per case, in addition to the dependent variable (Green & Salkind, 2017). The multiple linear regression analysis is an extension of a bivariate linear regression, which is useful to predict the

relationship between two variables; that is, one variable forecasts another. Unlike the bivariate linear regression, the multiple linear regression is useful for evaluating the relationship between multiple independent variables and a dependent variable (Green & Salkind, 2017). Acikkar and Sivrikaya (2018) described the multiple linear regression as a flexible, easy to use, and powerful tool for statistical analysis. In addition to affirming the importance of multiple linear regression in research, Nimon and Oswald (2013) stressed the value of adding alternative indices like validity coefficients, structure coefficients, and relative weights to compensate for the effect of multicollinearity due to intercorrelation between predictors. Green and Salkind identified some vital assumptions for the use of multiple linear regression. These assumptions include normality of distribution of the dependent variable, equality of variances for all levels of the independent variables, and random sampling of the population. Data assumptions for the use of multiple linear regression for this study included lack of multicollinearity, homoscedasticity, normality, linearity, absence of any significant outliers, and independence of residuals. A violation of these assumptions may result in an inaccurate analysis. A thorough evaluation of each assumption was necessary to ensure the validity of results. I used the multiple linear regression for this study, to evaluate the relationship between IT integration, senior leadership involvement in PMI, and postmerger performance in hospital systems.

Determining and using an appropriate sample size is vital to research quality. A priori power analysis is useful in determining the minimum required sample size. With the use of a G power analysis to derive the appropriate sample size, the appropriate or

minimum sample size was 68 participants. I assumed medium effect size of 0.15, an alpha of 0.05, and a power of 0.80. The statistical power of 0.80 sufficiently handles Type I and Type II errors (Perugini, Gallucci, & Costantini, 2018). Figure 5 shows a graphical model of the sample size for multiple linear regression, with the parameters defined previously.

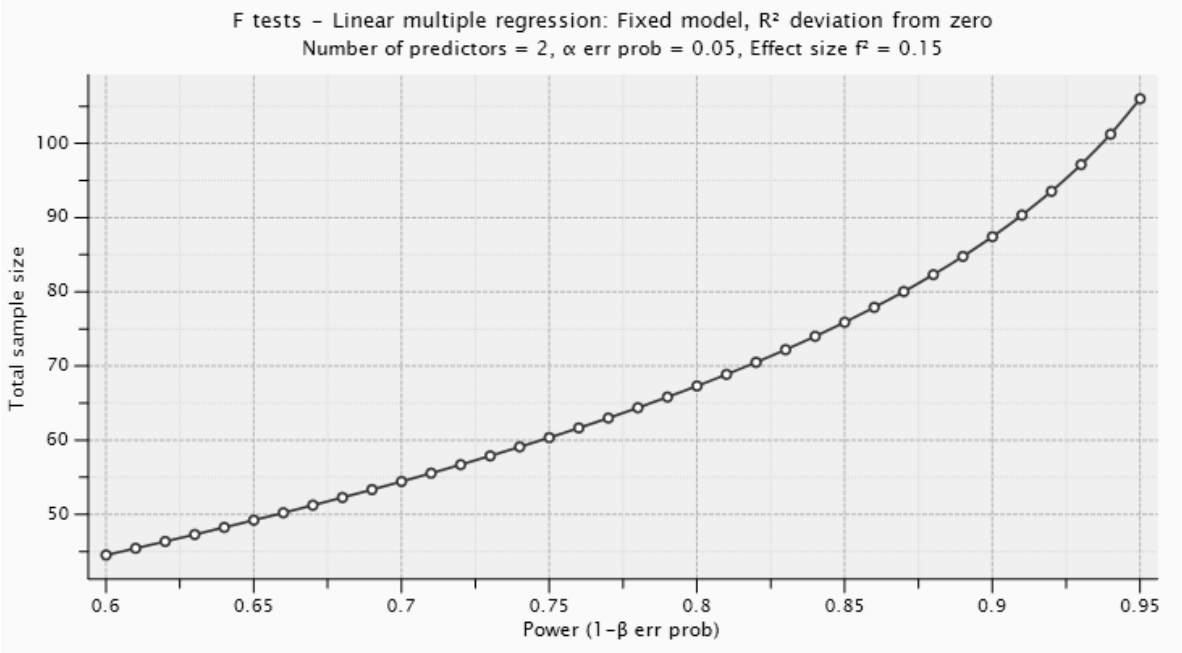

Figure 5. Graphical model of a priori power analysis for linear multiple regression using the free G*Power 3.1 software by F. Faul, E. Erdfelder, A. Buchner, and A. Lang, 2009.

Ethics

Maintaining ethical standards in research is crucial for the well-being of the participants. The Belmont principles for ethical research emphasized respect for participants, beneficence, and justice as crucial elements for acceptable research that is humane and factors in the well-being of the participants (Brakewood & Poldrack, 2013; Vitak, Shilton, & Ashktorab; 2016). According to Brakewood and Poldrack (2013),

studies using secondary data typically align with the Belmont principles for protecting human participants. Though the data for this study was from archival records, adhering to these principles enhances the ethical quality of the study, and ensures compliance with the standards of Walden University's Institutional Review Board (IRB). Scrubbing of the data for this study to remove personally identifiable characteristics like the name of the participant or hospital ensures adherence to ethical principles of research. Storing the data on a secure, encrypted device for 5 years is crucial for safeguarding the data and adhering to ethical standards of research. These vital steps were essential parts of this study. AHA obtains its extensive hospital data from an annual survey of hospital chief executives. AHA encourages executives to participate voluntarily through a letter and communicates the importance of the responses in providing a picture of health care practice in the United States and information that may assist policy makers, researchers, and various stakeholders in the health care industry. AHA attests to a response rate of more than 75% to its annual surveys. The data collection instruments for the AHA annual survey of hospitals and the supplemental IT survey are publicly available through its websites. The collaboration with federal and state health care agencies, industry recognition and participation, lend to support the assumption that the data was collected ethically. Reporting requirements for all hospitals and providers participating in Medicare demands that hospitals provide crucial performance information to CMS through the Hospital Inpatient Quality Reporting and Hospital Outpatient Quality Reporting programs. These reports follow an ethical standard, are assumed to be truthful, and verifiable (Center for

Medicare & Medicaid Services, 2016). The Hospital Compare data are publicly available. The Walden University IRB approval number for this study is 06-24-20-0971438.

Transition and Summary

Section 2 began with a restatement of the purpose of this study, followed by a detailed description of the research method and design. The section also included a thorough evaluation of the data sources, the role of the researcher, and ethical contemplations. The following section, Section 3, will contain findings from the analysis of the data, the interpretation of the data and possible applications to the postmerger performance of hospital systems.

Section 3: The Deliverable

Executive Summary

Hospitals play a vital role in the well-being of their communities. Modern-day health care challenges make it imperative that health care organizations are effective in discharging their primary responsibilities. A good understanding of variables impacting the successful implementations of M&A will enable health care firms and their leaders to respond to society's health needs more effectively. In this section, I present a summary of my findings and the potential implications for social change.

Purpose of the Study

The purpose of this quantitative ex post facto study was to examine the relationship between hospitals' (a) IT integration, (b) senior leadership involvement in PMI, and (c) postmerger performance. The independent variables were hospitals' IT integration and senior leadership involvement in PMI. The dependent variable was postmerger performance. The targeted population consisted of senior leaders of general acute care hospitals and hospital systems in the midwestern states of Ohio, Michigan, Indiana, Illinois, and Wisconsin, with prior involvement in a merger or acquisition. This study's results could be beneficial to hospitals as it may enhance the leaders' understanding of how to achieve desired results from M&A. The social change ramifications of the project include the potential to enable better postmerger hospital performance, thereby enhancing hospitals' ability to provide quality care for their communities, achieve better patient outcomes, create positive economic impact, and the enhance overall well-being of their communities.

Goals and Objectives

The goal of this secondary data analysis was to determine if a relationship exists between IT integration, senior leadership involvement in the process of integrating the hospitals and systems brought together via an M&A, and postmerger performance. Understanding if a relationship exists and its impact could be valuable in managing the M&A process for better outcomes. Better postmerger performance could invariably lead to positive contributions to society and better patient outcomes. My objective for this study was to offer a fresh perspective to leaders of health care organizations on how to steer their firms to success in M&A.

Overview of Findings

Using data from Irving Levin Associates and the AHA Annual Survey of Hospitals, I identified acute care hospitals from the targeted midwestern states of Ohio, Michigan, Illinois, Indiana, and Wisconsin with M&A activity (i.e., acquired), between 2013 and 2017. A total of 89 hospitals matched the criteria of acute care, nonfederal, and general medical-surgery hospitals. Table 2 shows the total count by state.

Table 2

Hospital M&A Count by State

State	Count
Ohio	18
Michigan	27
Indiana	11
Illinois	24
Wisconsin	9

The focus on acquired hospitals presented some challenges for this study. One is that some hospitals lose their unique identifiers after they are acquired and absorbed into an existing system to form a larger organization. Consequently, determining the performance of the acquired hospital becomes difficult postmerger. Despite this challenge, focusing on the acquired hospital instead of the acquiring hospital was the intent of this study because it presented a unique perspective for evaluating the research question. I eliminated acquired hospitals without unique system identifiers postmerger from the final sample population for analysis, including only hospitals with an individual identifier before and after the M&A in the study. The effect was the elimination of a total of 17 hospitals from the initial sample. Table 3 shows the final breakdown of the target hospital count by state.

Table 3

Target Hospitals Count With M&A Count by State

State	*Count*
Ohio	*16*
Michigan	*20*
Indiana	*6*
Illinois	*24*
Wisconsin	*6*

Note. Total count of target hospitals, $N = 72$.

For the data analysis, I used archived data from the CMS Hospital Compare Database. Specifically, the 2018 total performance score and the efficiency and cost reduction scores from the hospital value-based purchasing data for postmerger performance and leadership involvement measures, respectively. I linked the CMS data to the data from the AHA annual survey IT supplement for 2018. The two records are linked using the Medicare Provider ID, which is unique to each hospital. The AHA IT survey included questions on IT systems interoperability, integration, and implementation challenges. For data on IT integration, I used responses to Question 23a, "Do you use the same primary inpatient EMR/EHR system vendor for your primary outpatient EMR/EHR system?" *EMR* is "electronic medical records," and EHR means "electronic health records." AHA defined the primary system as the system used for the largest number of patients or that which represents the hospital's single most substantial investment. AHA captured responses to the question using a 5-point scale from 1 to 5, mapped to "yes, share a single instance," "yes, but do not share the single instance," "no," "do not know," and "not applicable." Number 1 represents the highest level of integration, which is

sharing a single instance or full integration. Number 2 is indicative of partial integration (i.e., “yes, but do not share the single instance”), whereas 3 indicates limited to no integration.

Recommendations

My research findings indicate that senior leaders may have a great effect on the outcome of M&A in hospitals. A significant relationship exists between senior leadership involvement in the PMI process and postmerger performance. To derive value from M&A and achieve improved performance, senior leaders of health care organizations would benefit from understanding how to stay engaged in the PMI process and provide guidance that will shepherd process leaders through the merger implementation.

Presentation of the Findings

The main research question for this study was as follows: What is the relationship between IT integration, senior leadership involvement in PMI, and postmerger performance? Using SPSS, I conducted a multiple linear regression analysis to if a relationship exists between the independent variables (a) IT integration and (b) senior leadership involvement in integration, and the dependent variable, postmerger performance (PMP).

This section includes the findings of the statistical tests, the testing of the assumptions, and an inferential analysis of the findings.

Descriptive Statistics

A total of 72 cases were included in the analysis. All cases evaluated included complete sets of data for the predictor and criterion variables. One of the predictor

variables, IT Integration, is polytomous with five possible categories or levels. To use polytomous variables in a standard multiple linear regression require dummy variables (Laerd Statistics, 2018). I created a dummy variable for each of the three categories of responses in the data for IT Integration levels (IT_Int_Full=Yes single instance, IT_Int_Part=Yes but not single instance, and IT_Int_No=No). The fourth category with two responses ("Do not know"), was ignored. No participant provided a response matching the fifth level, "not applicable." The reference group for the dummy variables was IT_Int_Full=Yes single instance. Table 4 shows the frequency of responses to the IT Integration question.

Table 4

IT Integration Response Frequency

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Yes, single instance	48	66.7	66.7	66.7
	Yes, but not single instance	3	4.2	4.2	70.8
	No	19	26.4	26.4	97.2
	Do not know	2	2.8	2.8	100.0
	Total	72	100.0	100.0	

Table 5 shows the descriptive statistics. Analysis of the deidentified data for the hospitals in the dataset included the dependent variable, postmerger performance (mean, 39.31; standard deviation, 10.54) and senior leadership involvement (mean, .98; standard deviation, .056).

Table 5

Descriptive Statistics

	Mean	Std. Deviation
Postmerger performance	39.31	10.54
Leadership involvement	.98	.056
IT_Int_Full=Yes single instance	.67	.48
IT_Int_Part=Yes but not single instance	.04	.20
IT_Int_No=No	.26	.44

Note. $N = 72$.

Testing of Assumptions

The testing of assumptions is essential to determine if the multiple linear regression model is a good fit for the data analysis. Assumption testing is a necessary step before answering the research question. Using the SPSS software, I evaluated for the independence of residuals, linearity, homoscedasticity, multicollinearity, outliers, and normality of distribution. The data and variables for the study already met the other core requirements for using multiple linear regression: a continuous dependent variable and two or more independent variables, which may be continuous or nominal.

Independence of residuals. The test for the independence of residuals (or observations), is a test to determine if there is serial correlation or 1st-order autocorrelation. Serial correlation implies that the residuals are not independent, and contiguous residuals are correlated (Chen, 2016; Laerd Statistics, 2018). I ran the Durbin-

Watson test to evaluate the independence of residuals. Results from the Durbin-Watson statistic can range in value from 0 to 4 (Fields, 2009; Laerd Statistics, 2018). A value close or equal to 2 indicates independence of the residuals. For my analysis, there was independence of residuals, as assessed by a Durbin-Watson statistic of 2.073. Table 6 depicts the model summary with the Durbin-Watson statistic.

Table 6

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.631[a]	.399	.372	8.3507136	2.073

Note. a. Predictors: (Constant), IT_Int_No=No, IT_Int_Part=Yes but not single instance, Leadership Involvement.

b. Dependent Variable: Postmerger Performance.

Linearity. To evaluate linearity between the independent variables and the dependent variable, I used the SPSS scatterplot procedure to generate a Scatter/Dot plot of the unstandardized predicted values and the studentized residuals. A careful analysis of the plot points to a linear relationship between the independent variables and the dependent variable. See Figure 6. I also evaluated for linearity between the dependent variable and each of the independent variables using partial regression plots. I ignored the partial plot between the dummy variables of the categorical independent variable (IT Integration) and the dependent variable, a standard approach in regression analysis (Laerd Statistics, 2018). Figure 7 shows the partial regression plot for total performance score and leadership involvement. Figures 6 and 7 show the linearity of the relationships.

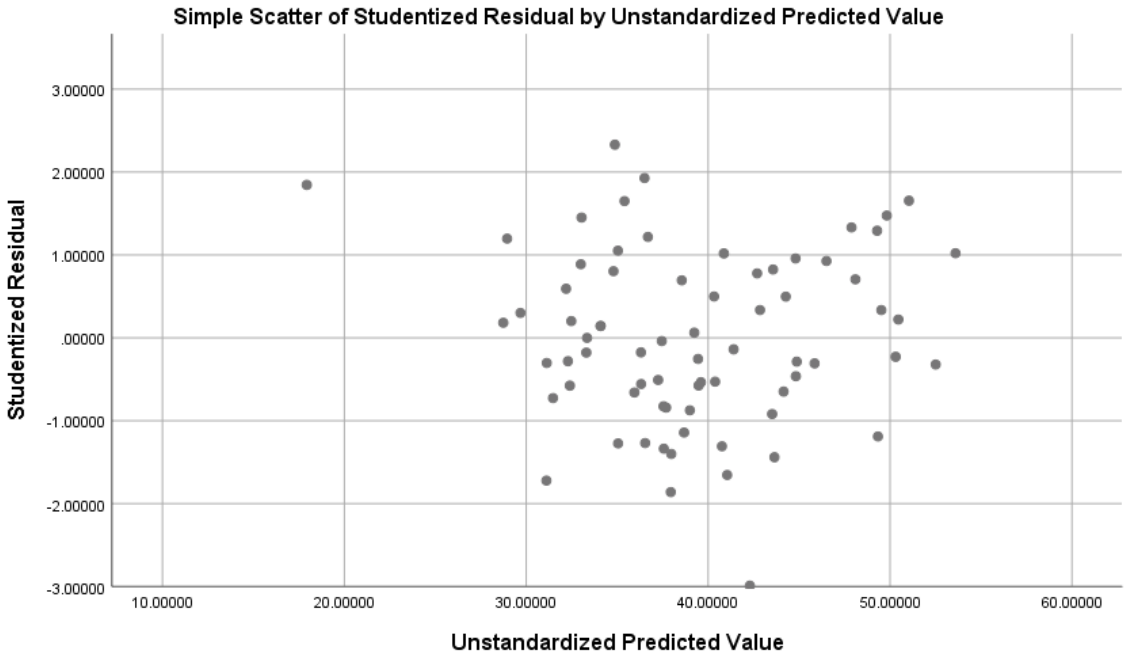

Figure 6. Scatter plot of studentized residuals by unstandardized predicted value showing a linear relationship.

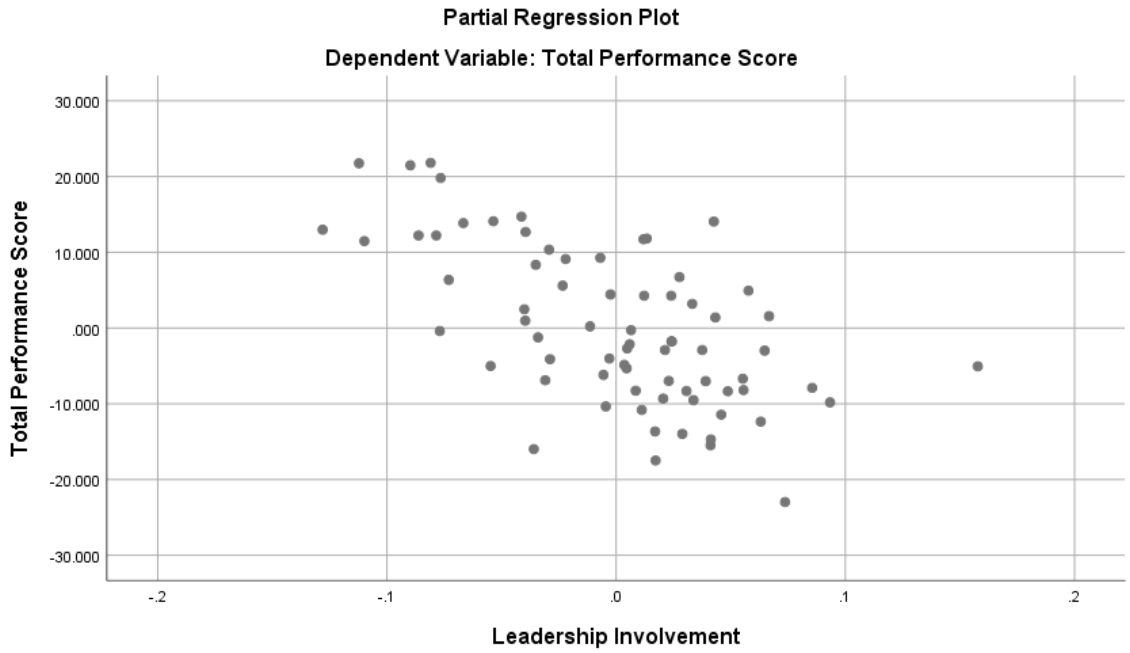

Figure 7. Partial regression plot of leadership involvement and total performance score showing a linear relationship.

Figures 8 and 9 show the partial regression plots for the dummy variables. I did not consider these plots in determining linearity as the dummy variables are categorical.

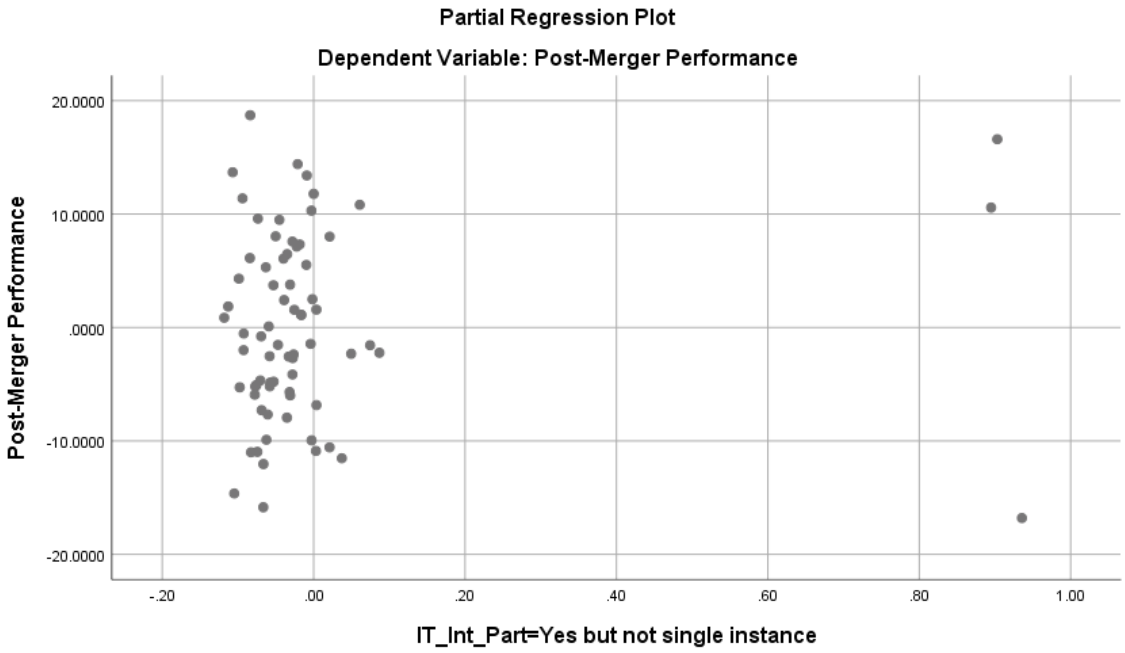

Figure 8. Partial regression plot of IT_Int_Part=Yes but not single instance and total performance score showing a non-linear relationship.

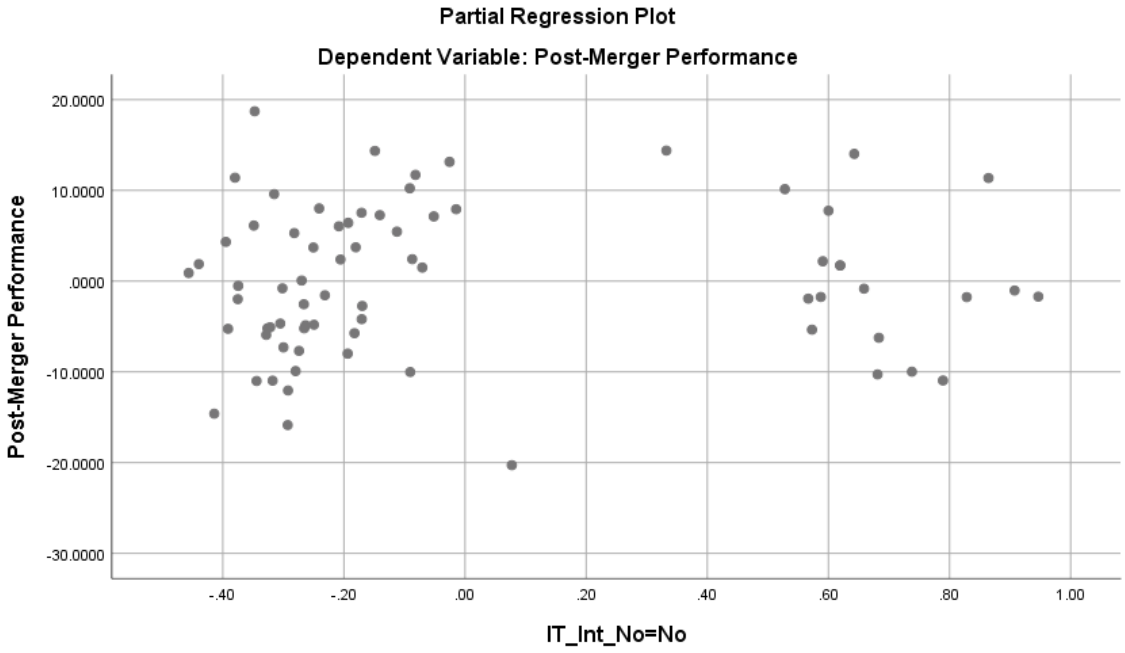

Figure 9. Partial regression plot of IT_Int_No=No and total performance score showing a non-linear relationship.

Outliers. Testing for outliers allows for checking for data points that are well outside their predicted values. Running the SPSS Casewise diagnostics did not produce any results, implying that there were no standardized residuals greater than ±3 standard deviation. The result suggested the absence of outliers. Further analysis using studentized deleted residuals did not reveal any residual that needed further investigation as a potential outlier. The examinations indicated there were no major violations of this assumption. Additional tests for leverage and influential points did not reveal any cases with high leverage or that are influential. Results observed were within normal and acceptable ranges (Cook & Weisberg, 1982; Huber, 1981). See Table 7.

Table 7

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	17.871	53.843	39.312	6.654	72
Std. Predicted Value	-3.222	2.184	.000	1.000	72
Standard Error of Predicted Value	1.182	4.867	1.802	.797	72
Adjusted Predicted Value	14.880	53.138	39.265	7.073	72
Residual	-20.348	19.0289	.000	8.172	72
Std. Residual	-2.437	2.279	.000	.979	72
Stud. Residual	-2.999	2.313	.003	1.032	72
Deleted Residual	-30.816	19.775	.047	9.183	72
Stud. Deleted Residual	-3.195	2.391	.002	1.049	72
Mahal. Distance	.435	23.132	2.958	4.626	72
Cook's Distance	.000	1.156	.036	.147	72
Centered Leverage Value	.006	.326	.042	.065	72

Note. a. Dependent Variable: Postmerger Performance.

Homoscedasticity. The assumption of homoscedasticity refers to the absence of a clear pattern in the spread of residuals. The existence of an increasing or decreasing pattern would indicate the likelihood of heteroscedasticity, which would be a violation of the assumption and increase the possibility of a Type I error (Rosopa, Schaffer, & Schroeder, 2013). The examination of the studentized residuals against the unstandardized predicted values showed homoscedasticity, as no clear pattern was observed (see Figure 6).

Multicollinearity. Multicollinearity occurs when there is a high degree of correlation between two or more predictor variables. I used the Pearson Correlation statistic to evaluate the correlation between the predictor variables. Table 8 shows the results. The bivariate correlations were mostly small to medium. However, I observed a relatively high negative correlation of -.847 between two dummy variables representing the highest and lowest levels of IT integration. To eliminate the situation described by Disatnik and Sivan (2014) as an illusion of multicollinearity, I examined the tolerance and variance inflation factor (VIF) values in the collinearity statistics created by SPSS (see Table 9). All tolerance values are greater than .1 and VIF values less than 10, signifying that there was no violation of the assumption of multicollinearity (Hair, Black, Babin, & Anderson, 2014).

Table 8

Correlations

		Postmerger Performance	Leadership Involvement	IT_Int_Part=Yes but not single instance	IT_Int_No=No
Pearson Correlation	Postmerger Performance	1.000	-.627	-.027	-.131
	Leadership Involvement	-.627	1.000	.147	.248
	IT_Int_Part=Yes but not single instance	-.027	.147	1.000	-.125
	IT_Int_No=No	-.131	.248	-.125	1.000
Sig. (1-tailed)	Postmerger Performance	.	.000	.410	.136
	Leadership Involvement	.000	.	.109	.018
	IT_Int_Part=Yes but not single instance	.410	.109	.	.148
	IT_Int_No=No	.136	.018	.148	.

Note. N = 72.

Table 9

Collinearity Statistics[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Leadership Involvement	.907	1.103
	IT_Int_Part=Yes but not single instance	.951	1.052
	IT_Int_No=No	.912	1.096

Note. a. Dependent Variable: Postmerger Performance.

Normality. To confirm that the assumption of normality was not violated, I examined the distribution of the standardized residuals using the histogram depicted in Figure 10. The results suggested that the residuals are normally distributed.

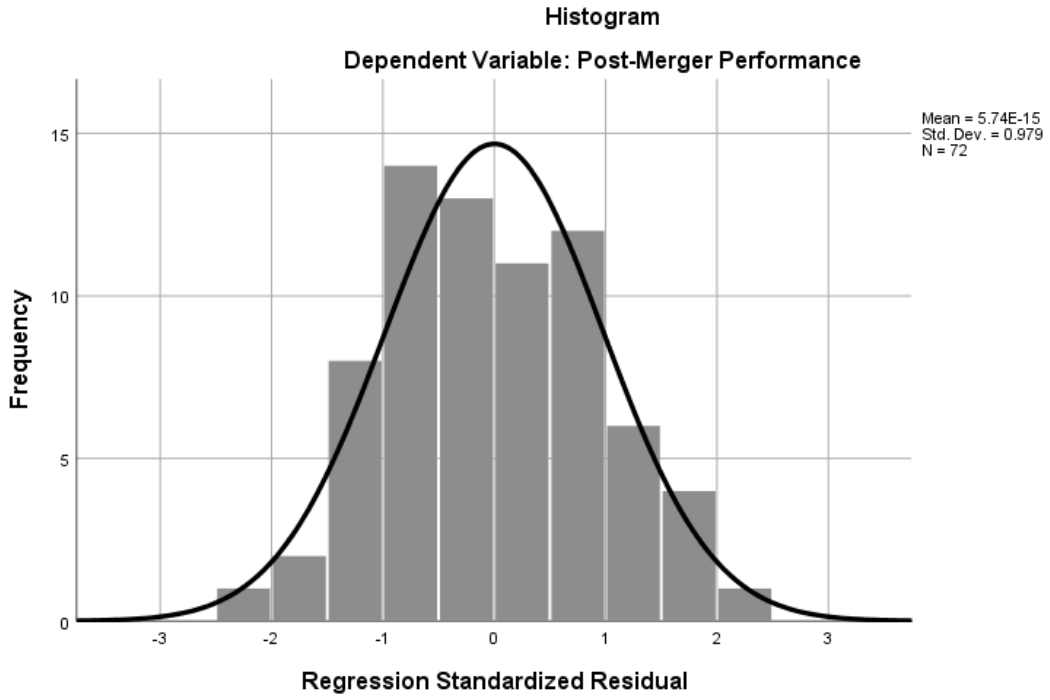

Figure 10. Histogram showing normality of distribution.

The P-P plot of regression standardized residual further confirmed the observation that the assumption of normality was not violated (see Figure 11).

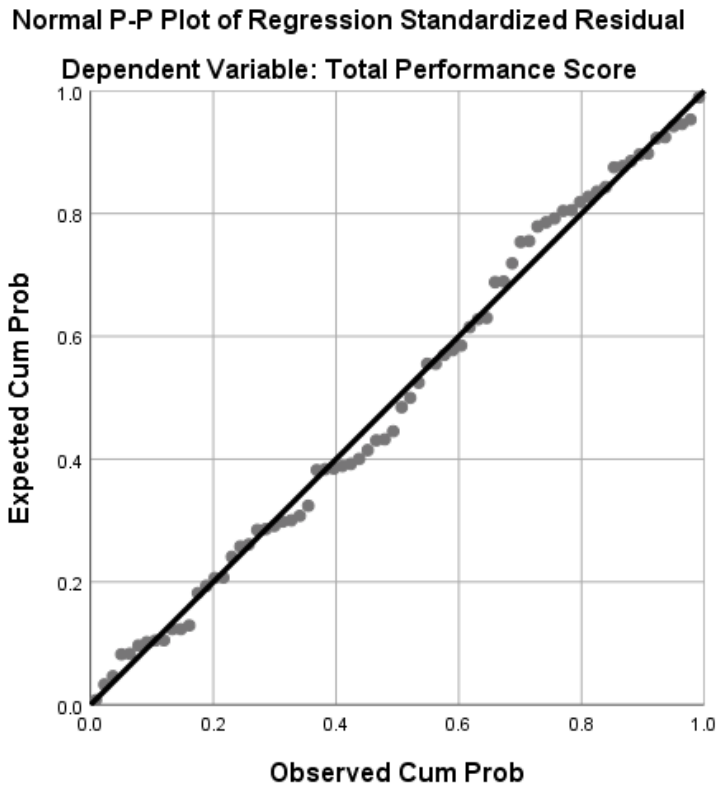

Figure 11. The normal P-P plot of regression standardized residual.

To affirm the conclusion of normality, I used SPSS to generate a Q-Q plot of studentized residual. Figure 12 shows the result, which also confirms that the assumption of normality was not violated.

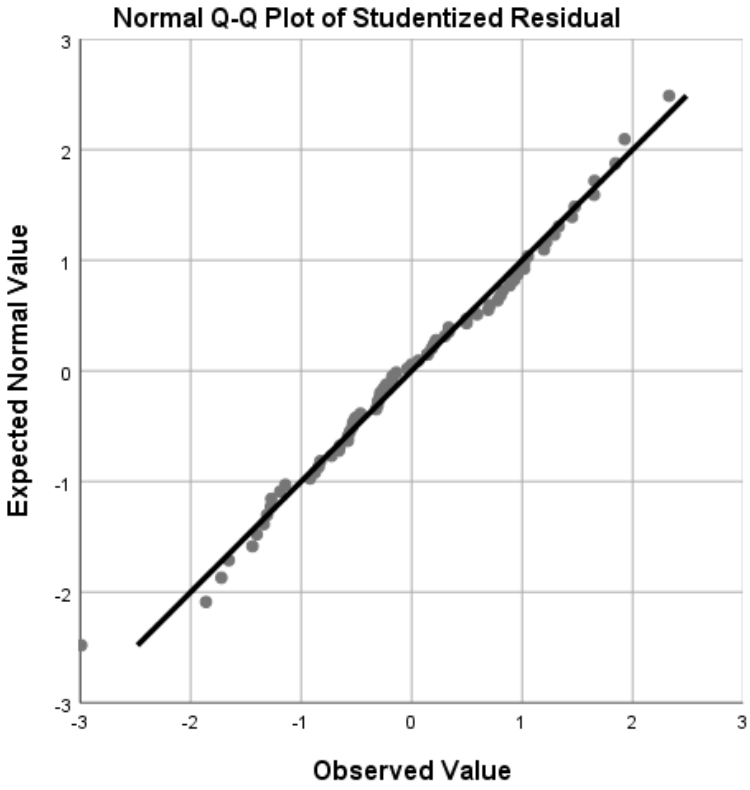

Figure 12. Q-Q of studentized residual showing normality.

Inferential Results

Standard multiple linear regression, $\alpha = .05$ (two-tailed), was used to examine the usefulness of IT integration and senior leadership involvement in PMI in predicting postmerger performance of hospitals. The independent variables were IT integration and senior leadership involvement (SLI). IT integration was reclassified into three dummy independent variables; full integration (IT_Int_Full), partial integration (IT_Int_Part), and no integration (IT_Int_No). The dependent variable was postmerger performance (PMP). The null hypothesis was that there is no statistically significant relationship between IT integration, senior leadership involvement in PMI, and PMP. The alternative hypothesis was that there is a statistically significant relationship between IT integration, senior

leadership involvement in PMI, and PMP. I conducted preliminary analyses to assess whether the assumptions of multicollinearity, outliers, normality, linearity, homoscedasticity, and independence of residuals were met; no serious violations were noted (see *Testing of Assumptions*). The model was able to significantly predict PMP: $F(3, 68) = 15.026$, $p < .001$, $R^2 = .399$. The R^2 (.399) value indicated that approximately 40% of variations in PMP is accounted for by the linear combination of the predictor variables (SLI, IT_Int_Full, IT_Int_Part, and IT_Int_No). The adjusted R^2 was 37.2%. Senior leadership involvement was statistically significant to the prediction ($t = -6.55$, $p < .001$, $\beta = -.647$). The dummy variables for the levels of IT integration, IT_Int_Part ($t = .751$, $p = .455$, $\beta = .072$), and IT_Int_No ($t = .386$, $p = .700$, $\beta = .038$) were not statistically significant (see Table 11).

Table 10

Anova[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3143.472	3	1047.824	15.026	.000[b]
	Residual	4741.940	68	69.734		
	Total	7885.412	71			

Note. a. Dependent Variable: Postmerger Performance.
b. Predictors: (Constant), IT_Int_No=No, IT_Int_Part=Yes but not single instance, Leadership Involvement.

Table 11

Regression Analysis Summary for Predictor Variables

Variable	*B*	*SE B*	*β*	*t*	*p*
Leadership Involvement	-121.363	18.527	-.647	-6.550	<.001
Partial IT Integration	3.794	5.051	.072	.751	.455
No IT Integration	.903	2.338	.038	.386	.700

Note. *N*= 72. Dependent Variable: Postmerger Performance.

The hypotheses for this study were:

(H_0): There is no statistically significant relationship between IT integration, senior leadership involvement in PMI, and postmerger performance.

(H_a): There is a statistically significant relationship between IT integration, senior leadership involvement in PMI, and postmerger performance.

The results of the study showed that the null hypothesis can be rejected for senior leadership involvement in PMI because a statistically significant relationship with postmerger performance exists. The null hypothesis cannot be rejected for IT integration because there was no statistically significant relationship. The alternate hypothesis was rejected for IT integration because there was no statistically significant relationship with postmerger performance. However, the alternate hypothesis was accepted for senior leadership involvement in PMI because there was a statistically significant relationship with postmerger performance.

Despite the findings that the dummy categorical predictors were not statistically

significant, the magnitude of the slope coefficients for these categorical variables and the observed ranges of the 95% confidence intervals, -6.285 to 13.873 for partial integration, and -3.762 to 5.569 for no integration, warranted their inclusion in the final model. This approach to modeling categorical variables in the regression equation is supported in statistical analysis (Gunter, Chernick, & Jiajing Sun, 2011; Laerd Statistics, 2018). The slope coefficients (B) for IT_Int_Part (partial IT integration) and IT_Int_No (no IT integration) compare the mean of each variable with the reference group, IT_Int_Full (full IT integration).

Table 12

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	158.134	18.032		8.769	.000	122.151	194.117
	Leadership Involvement	-121.363	18.527	-.647	-6.550	.000	-158.334	-84.392
	IT_Int_Part=Yes but not single instance	3.794	5.051	.072	.751	.455	-6.285	13.873
	IT_Int_No=No	.903	2.338	.038	.386	.700	-3.762	5.569

The negative slope for leadership involvement (-121.363) indicates a corresponding increase in PMP for each 1-point decrease in each variable. Similarly, the positive regression coefficient for partial IT integration (3.794) indicates that better

integration would result in a corresponding increase in PMP. The negative slope (coefficient) for leadership involvement may be explained by the nature of the data evaluated. Measurement of the CMS data was against a baseline developed from prior efficiency and cost reduction. Therefore, an increasing value signified a departure from the baseline, i.e., a departure from the expected level of efficiency, which reflected senior leadership involvement for this study. Overall, the regression model shows that leadership significantly impacts postmerger performance, aligning with the PMI framework by Haspeslagh and Jemison (1991). The model substantively supports the PMI framework by Haspeslagh and Jemison (1991) on senior leadership's influence and the integration of resources on postmerger outcomes. Haspeslagh and Jemison (1991) posited that leaders must be engaged in shaping and guiding the integration process, ensuring that the requisite environment exists for a smooth transfer of capabilities to derive value and achieve the planned objective of the M&A. The results from this study support the theory on the impact of leadership on M&A outcomes.

Recommendations for Action

This study's findings can assist senior leaders and managers of hospitals in understanding how to guide the postmerger process for better results effectively. The results affirmed that senior leadership involvement in the PMI phase has a significant relationship with postmerger performance. Health care industry leaders may benefit from understanding the criticality of engagement in the postmerger phase of an M&A and not only in the initial deal-making phase. Further research may be helpful to determine the type of leadership and the scope of involvement that would be more beneficial in the

postmerger phase. The study also adds credence to the criticality of resource integration to enhancing value creation from an M&A. To a lesser degree than senior leadership involvement in PMI, IT integration could improve value creation. This insight would be beneficial to senior and mid-level managers who involved in PMI activities. Though industry practices may vary, this study's findings may find applicability in other business sectors beyond health care as M&A activity is pervasive across industries despite the high rate of failure to create value (Alaranta & Henningsson, 2008; Rebner & Yeganeh, 2019). The criticality of senior leadership involvement and resource integration to M&A outcomes suggests the need for senior business leaders to develop a roadmap for periodic check-ins and engagement with mid-tier leaders who manage the PMI process. This plan may ensure continued involvement and provide an opportunity for prompt course correction if necessary. My goal is to communicate the findings of this study through health care industry organizations and professional bodies. I would also seek opportunities for sharing the insights gained from the study at appropriate conferences or industry-related events.

Implications for Social Change

Hospitals are crucial to societal wellbeing. Apart from the extremely critical role of caring for the sick and health care research, hospitals play a significant role in their communities' economic wellbeing. Hospitals account for providing more than 16 million jobs in the United States alone, with an economic impact of $3.0 trillion (AHA, 2018). Therefore, providing leaders of such an essential part of the society with insight on how better to achieve their objectives of value creation through mergers is vital and has

significant ramifications for social wellbeing. Current developments in health care have further amplified the implications of this study for social change. The coronavirus disease (COVID-19) has exacerbated the financial, patient care, and resource pressures on hospitals and their leaders (Dauner, Perlman, & Dougherty, 2020). The findings of this study may help equip health care leaders with the knowledge that will help to eliminate a potential source of additional pressure. Assisting hospital leaders to understand the relationship between IT integration, senior leadership involvement in merger integration, and postmerger performance, may help them to achieve the desired efficiencies, cost reduction, and transfer of competencies and knowledge that they desire from M&A. The ultimate implication for society is better patient care and outcomes.

Skills and Competencies

The DBA program was a journey of intense learning and development for me. Throughout the journey, I have acquired skills and competencies that will make me a better practitioner and leader. My professional experience in health care IT and the awareness of its role in patient care contributed to my decision to study M&A and the role of leadership and health care IT in determining its outcome. Through the process of literature review and analysis of secondary data, I learned more about M&A, the different phases, and factors that are crucial to its success and impact the postmerger performance of the newly formed organization. Sharing the insights garnered through this process may be beneficial to health care leaders specifically and other business leaders as well across other industries, with interest in M&A. My DBA portfolio, including my skills, and competencies as a business leader, can be accessed through waldenu.optimalresume.com.

References

Abrams, D. E., & Hogg, M. A. (1990). *Social identity theory: Constructive and critical advances*. New York, NY: Springer-Verlag Publishing.

Acikkar, M., & Sivrikaya, O. (2018). Prediction of gross calorific value of coal based on proximate analysis using multiple linear regression and artificial neural networks. *Turkish Journal of Electrical Engineering & Computer Sciences, 26*, 2541-2552. doi:10.3906/elk-1802-50

Agarwal, R., Guodong Gao, DesRoches, C., & Jha, A. K. (2010). The digital transformation of healthcare: Current status and the road ahead. *Information Systems Research, 21*, 796-809. doi:10.1287/isre.1100.0327

Ahammad, M. F., Tarba, S. Y., Liu, Y., & Glaister, K. W. (2016). Knowledge transfer and cross-border acquisition performance: The impact of cultural distance and employee retention. *International Business Review, 25*(1), 66-75. doi:10.1016/j.ibusrev.2014.06.015

Alaranta, M., & Henningsson, S. (2008). An approach to analyzing and planning post-merger IS integration: Insights from two field studies. *Information Systems Frontiers, 10*(3), 307-319. doi:10.1007/s10796-008-9079-2

Alaranta, M., & Mathiassen, L. (2014). Managing risks: Post-merger integration of information systems. *IT Professional, 16*(1), 30-40. doi:10.1109/mitp.2013.64

American Hospital Association. (2018). *Hospitals are economic drivers in their communities*. Retrieved from http://www.aha.org

American Hospital Association. (2020). *Data collection methods*. Retrieved from http://www.ahadata.com

Angwin, D. N., & Meadows, M. (2009). The choice of insider or outsider top executives in acquired companies. *Long Range Planning, 42,* 359-389. doi:10.1016/j.lrp.2009.05.005

Angwin, D. N., & Meadows, M. (2015). New integration strategies for post-acquisition management. *Long Range Planning*, *48*(4), 235-251. doi:10.1016/j.lrp.2014.04.001

Appelbaum, S. H., Gandell, J., Shapiro, B. T., Belisle, P., & Hoeven, E. (2000). Anatomy of a merger: Behavior of organizational factors and processes throughout the pre- during- post- stages (part 2). *Management Decision*, *38*, 674-684. doi:10.1108/00251740010360579

Arvonen, J., & Pettersson, P. (2002). Leadership behaviours as predictors of cost and change effectiveness. *Scandinavian Journal of Management*, *18*(1), 101-112. doi:10.1016/S0956-5221(00)00009-9

Avdic, D., Lundborg, P., & Vikström, J. (2019). Estimating returns to hospital volume: Evidence from advanced cancer surgery. *Journal of Health Economics, 63,* 81-99. doi:10.1016/j.jhealeco.2018.10.005

Baker, E. W., & Niederman, F. (2014). Integrating the IS functions after mergers and acquisitions: Analyzing business-IT alignment. *The Journal of Strategic Information Systems*, *23*(2), 112-127. doi.org:10.1016/j.jsis.2013.08.002

Barling, J., Loughlin, C., & Kelloway, E. K. (2002). Development and test of a model linking safety-specific transformational leadership and occupational safety. *Journal of Applied Psychology, 87*(3), 488-496. doi:10.1037/0021-9010.87.3.488

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17*, 99-120. doi:10.1177/014920639101700108

Barnham, C. (2015). Quantitative and qualitative research: Perceptual foundations. *International Journal of Market Research*, *57*, 837-854. https://doi.org/10.2501/IJMR-2015-070

Bass, B. M., & Avolio, B. J. (2000). *MLQ multifactor leadership questionnaire*. Redwood City, CA: Mind Garden.

Bauer, F., & Matzler, K. (2014). Antecedents of M&A success: The role of strategic complementarity, cultural fit, and degree and speed of integration: Antecedents of M&A success. *Strategic Management Journal*, *35*(2), 269-291. doi:10.1002/smj.2091

Bauer, F., Strobl, A., Dao, M. A., Matzler, K., & Rudolf, N. (2018). Examining links between pre and post M&A value creation mechanisms - Exploitation, exploration and ambidexterity in central European SMEs. *Long Range Planning*, *51*(2), 185-203. doi:10.1016/j.lrp.2016.07.002

Bereskin, F., Byun, S. K., Officer, M. S., & Oh, J.-M. (2018). The effect of cultural similarity on mergers and acquisitions: Evidence from corporate social responsibility. *Journal of Financial & Quantitative Analysis, 53*, 1995-2039. doi:10.1017/S0022109018000716

Bettany-Saltikov, J., & Whittaker, V. J. (2014). Selecting the most appropriate inferential statistical test for your quantitative research study. *Journal of Clinical Nursing*, 23, 1520-1531. doi:10.1111/jocn.12343

Birken, S. A., Lee, S. Y. D., Weiner, B. J., Chin, M. H., Chiu, M., & Schaefer, C. T. (2015). From strategy to action: how top managers' support increases middle managers' commitment to innovation implementation in healthcare organizations. *Health care management review*, *40*(2), 159-168. Retrieved from https://www.ncbi.nlm.nih.gov

Bodner, J., & Capron, L. (2018). Post-merger integration. *Journal of Organization Design*, *7*(1), 1-20. doi:10.1186/s41469-018-0027-4

Boo, S., & Froelicher, E. S. (2013). Secondary analysis of national survey datasets. *Japan Journal of Nursing Science*, 10, 130–135. doi:10.1111/j.1742-7924.2012.00213.x

Bowens, F. M., Frye, P. A., & Jones, W. A. (2010). Health information technology: Integration of clinical workflow into meaningful use of electronic health records. *Perspectives in Health Information Management/AHIMA, American Health Information Management Association*, *7*(Fall). Retrieved from https://www.ncbi.nlm.nih.gov

Bradley, C. M. (2016). Executing on integration: The key to success in mergers and acquisitions. *Nursing Administration Quarterly*, *40*(4), 316-320. doi:10.1097/NAQ.0000000000000193

Braithwaite, J., Hibbert, P., Blakely, B., Plumb, J., Hannaford, N., Long, J. C., & Marks, D. (2017). Health system frameworks and performance indicators in eight

countries: A comparative international analysis. *SAGE Open Medicine, 5*, 205031211668651. doi:10.1177/2050312116686516

Brakewood, B., & Poldrack, R. A. (2013). The ethics of secondary data analysis: Considering the application of Belmont principles to the sharing of neuroimaging data. *Neuroimage, 82*, 671-676. doi:10.1016/j.neuroimage.2013.02.040

Brueller, N. N., Carmeli, A., & Markman, G. D. (2018). Linking merger and acquisition strategies to postmerger integration: A configurational perspective of human resource management. *Journal of Management, 44*, 1793-1818. doi:10.1177/0149206315626270

Burns, L. R., McCullough, J. S., Wholey, D. R., Kruse, G., Kralovec, P., & Muller, R. (2015). Is the system really the solution? Operating costs in hospital systems. *Medical Care Research and Review, 72*, 247-272. doi:10.1177/1077558715583789

Calipha, R., Brock, D. M., Rosenfeld, A., & Dvir, D. (2018). Acquired, transferred and integrated knowledge: A study of M&A knowledge performance. *Journal of Strategy and Management*, *11*(3), 282-305. doi:10.1108/JSMA-07-2017-0049

Center for Medicare & Medicaid Services (2016). *Hospital Compare*. Retrieved from https://www.cms.gov

Chang, S.-I., Chang, I.-C., & Wang, T. (2014). Information systems integration after merger and acquisition. *Industrial Management & Data Systems*, *114*(1), 37-52. doi:10.1108/IMDS-03-2013-0157

Chatterjee, S., & Brueller, N. N. (2015). A new M & A methodology: Five lessons in anticipating post-merger resource interactions and challenges. *Strategy & Leadership*, *43*(4), 26-37. doi:10.1108/SL-04-2015-0031

Chen, Y. (2016). Spatial autocorrelation approaches to testing residuals from least squares regression. *PLoS ONE, 11,* 1-19. doi:10.1371/journal.pone.0146865

Clay-Williams, R., Ludlow, K., Testa, L., Li, Z., & Braithwaite, J. (2017). Medical leadership, a systematic narrative review: Do hospitals and healthcare organisations perform better when led by doctors? *BMJ Open*, *7*(9), e014474. doi:10.1136/bmjopen-2016-014474

Clougherty, J. A., & Duso, T. (2011). Using rival effects to identify synergies and improve merger typologies. *Strategic Organization*, *9*(4), 310-335. doi:10.1177/1476127011421536

Colla, C., Bynum, J., Austin, A., & Skinner, J. (2016). *Hospital Competition, Quality, and Expenditures in the U.S. Medicare Population* (No. w22826; p. w22826). doi:10.3386/w22826

Collum, T. H., Menachemi, N., & Sen, B. (2016). Does electronic health record use improve hospital financial performance? Evidence from panel data. *Health Care Management Review, 41*(3), 267-274. doi:10.1097/HMR.0000000000000068

Cook, R. D., & Weisberg, S. (1982). *Residuals and influence in regression*. New York: Chapman & Hall.

Dahl, Ø., & Olsen, E. (2013). Safety compliance on offshore platforms: A multi-sample survey on the role of perceived leadership involvement and work climate. *Safety Science*, *54*, 17-26. doi:10.1016/j.ssci.2012.11.003

Datta, B. (2015). Assessing the effectiveness of authentic leadership. *International Journal of Leadership Studies*, *9*(1), 62-75. Retrieved from http://www.regent.edu/acad/global/publications/ijls/new/home.htm

Dauner, C. D., Perlman, J., & Dougherty, T. (2020). 5 ways hospitals should prepare to access COVID-19 disaster funding. *Hfm (Healthcare Financial Management)*, *74*(5), 36–39. Retrieved from https://www.hfma.org

Davis, P., Milne, B., Parker, K., Hider, P., Lay-Yee, R., Cumming, J., & Graham, P. (2013). Efficiency, effectiveness, equity (E3). Evaluating hospital performance in three dimensions. *Health Policy*, *112*(1), 19-27. doi:10.1016/j.healthpol.2013.02.008

Disatnik, D., & Sivan, L. (2016). The multicollinearity illusion in moderated regression analysis. *Marketing Letters*, *27*, 403-408. doi:10.1007/s11002-014-9339-5

Ellram, L. M., & Tate, W. L. (2016). The use of secondary data in purchasing and supply management (P/SM) research. *Journal of Purchasing and Supply Management*, *22*(4), 250-254. doi:10.1016/j.pursup.2016.08.005

Elstak, M. N., Bhatt, M., Van Riel, C. B. M., Pratt, M. G., & Berens, G. A. J. M. (2015). Organizational identification during a merger: The role of self-enhancement and uncertainty reduction motives during a major organizational change. *Journal of Management Studies*, (1), 32. doi:10.1111/joms.12105

Engestrom, Y. (2000). Activity theory as a framework for analyzing and redesigning work. *Ergonomics, 43*(7), 960-974. doi:10.1080/001401300409143

Fassinger, R., & Morrow, S. L. (2013). Toward best practices in quantitative, qualitative, and mixed-method research: A social justice perspective. *Journal for Social Action in Counseling & Psychology, 5*, 69-83. Retrieved from http://jsacp.tumblr.com/

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. (2009). Statistical power analyses using G*Power 3.1:Tests for correlation and regression analyses. *Behavior Research Methods, 41*, 1149-1160. doi:10.3758/BRM.41.4.1149

Federico, G., Langus, G., & Valletti, T. (2018). Horizontal mergers and product innovation. *International Journal of Industrial Organization*, *59*, 1-23. doi:10.1016/j.ijindorg.2018.03.001

Fields, A. (2009). *Discovering statistics using SPSS (3rd ed.)*. Thousand Oaks, California: SAGE publications.

Firestone, W. A. (1987). Meaning in method: The rhetoric of quantitative and qualitative research. *Educational Researcher, 16*(7), 16-21. doi:10.2307/1174685

Fleishon, H. B., Itri, J. N., Boland, G. W., & Duszak, R. (2017). Academic medical centers and community hospitals integration: Trends and strategies. *Journal of the American College of Radiology*, *14*(1), 45-51. doi:10.1016/j.jacr.2016.07.006

Frakt, A. B. (2015). Hospital consolidation isn't the key to lowering costs and raising quality. *JAMA: The Journal of the American Medical Association, 313*, 345. doi:10.1001/jama.2014.17412

Frantz, T. L. (2018). The meso-unit theory of post-merger integration. *Computational and Mathematical Organization Theory; Dordrecht*, *24*(1), 99-111. doi:10.1007/s10588-017-9248-2

Friedman, Y., Carmeli, A., Tishler, A., & Shimizu, K. (2016). Untangling micro-behavioral sources of failure in mergers and acquisitions: a theoretical integration and extension. *The International Journal of Human Resource Management*, *27*(20), 2339–2369. doi:10.1080/09585192.2015.1042003

Gaffney, N., Kedia, B., & Clampit, J. (2013). A resource dependence perspective of EMNE FDI strategy. *International Business Review*, *22*(6), 1092-1100. doi:10.1016/j.ibusrev.2013.02.010

Galpin, T. (2018). Reap exceptional value from M&A: Manage it as a core competence. *Strategy & Leadership*, *46*(5), 17–25. doi:10.1108/SL-05-2018-0054

Giuffre, M. (1997). Designing research: Ex post facto designs. *Journal of PeriAnesthesia Nursing*, *12*(3), 191-195. doi:10.1016/S1089-9472(97)80038-X

Goff, S. L., Lagu, T., Pekow, P. S., Hannon, N. S., Hinchey, K. L., Jackowitz, T. A., ... & Lindenauer, P. K. (2015). A qualitative analysis of hospital leaders' opinions about publicly reported measures of health care quality. *The Joint Commission Journal on Quality and Patient Safety*, *41*(4), 169-176. Retrieved from https://www.nih.gov

Gomes, E., Angwin, D. N., Weber, Y., & Yedidia Tarba, S. (2013). Critical success factors through the mergers and acquisitions process: revealing pre-and post-

M&A connections for improved performance. *Thunderbird international business review, 55*(1), 13-35. doi:10.1002/tie.21521

Graebner, M. E., Heimeriks, K. H., Huy, Q. N., & Vaara, E. (2017). The process of postmerger integration: A review and agenda for future research. *Academy of Management Annals, 11*(1), 1-32. doi.:10.5465/annals.2014.0078

Greaney, T. L. (2018). The new health care merger wave: Does the "Vertical, Good" maxim apply? *The Journal of Law, Medicine & Ethics*, *46*(4), 918-926. doi:10.1177/1073110518821990

Green, S. B., & Salkind, N. J. (2017). *Using SPSS for Windows and Macintosh: Analyzing and understanding data* (8th ed.). Upper Saddle River, NJ: Pearson.

Gu, X., & Itoh, K. (2016). Performance indicators: Healthcare professionals' views. *International Journal of Health Care Quality Assurance*, *29*(7), 801-815. doi:10.1108/IJHCQA-12-2015-0142

Gunter, L., Chernick, M., & Jiajing Sun. (2011). A simple method for variable selection in regression with respect to treatment selection. *Pakistan Journal of Statistics & Operation Research*, *7*(2), 363–380. doi:10.18187/pjsor.v7i2-sp.311

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis* (7th ed.). Harlow, England: Pearson.

Hayford, T. B. (2012). The impact of hospital mergers on treatment intensity and health outcomes. *Health Services Research*, *47*(3pt1), 1008–1029. doi:10.1111/j.1475-6773.2011.01351.x

Haspeslagh, P. C., & Jemison, D. B. (1991). *Managing acquisitions: Creating value through corporate renewal*. New York, NY: Free Press.

Hauptman, P. J., Bookman, R. J., & Heinig, S. (2017). Advancing the research mission in a time of mergers and acquisitions. *JAMA*, *318*(14), 1321-1322. doi:10.1001/jama.2017.11812

Henningsson, S., & Kettinger, W. J. (2016). Understanding information systems integration deficiencies in mergers and acquisitions: A configurational perspective. *Journal of Management Information Systems*, *33*(4), 942-977. doi:10.1080/07421222.2016.1267516

Henningsson, S., & Øhrgaard, C. (2016). IT consultants in acquisition IT integration: A resource-based view. *Business & Information Systems Engineering; Berkeley*, *58*(3), 193–212. doi:10.1007/s12599-016-0433-5

Henningsson, S., Yetton, P. W., & Wynne, P. J. (2018). A review of information system integration in mergers and acquisitions. *Journal of Information Technology*, *33*(4), 255–303. doi:10.1057/s41265-017-0051-9

Hillman, A. J., Withers, M. C., & Collins, B. J. (2009). Resource dependence theory: A review. *Journal of Management*, *35*, 1404-1427. doi:10.1177/0149206309343469

Huber, P. J. (1981). *Robust statistics*. New York: John Wiley & Sons.

Ibrahimi, M., & Meghouar, H. (2019). Sources of value creation and destruction in horizontal mergers and acquisitions. *Managerial Finance*, MF-02-2018-0053. doi:10.1108/MF-02-2018-0053

Ingebrigtsen, T., Georgiou, A., Clay-Williams, R., Magrabi, F., Hordern, A., Prgomet, M., … Braithwaite, J. (2014). The impact of clinical leadership on health information technology adoption: Systematic review. *International Journal of Medical Informatics*, *83*, 393-405. doi:10.1016/j.ijmedinf.2014.02.005

Ittner, C. D. (2014). Strengthening causal inferences in positivist field studies. *Accounting, Organizations and Society*, *39*(7), 545-549. doi:10.1016/j.aos.2013.10.003

Jacobsen, C. B., & Bøgh Andersen, L. (2015). Is leadership in the eye of the beholder? A study of intended and perceived leadership practices and organizational performance. *Public Administration Review, 75*, 829-841. doi:10.1111/puar.12380

Jap, S., Gould, A. N., & Liu, A. H. (2017). Managing mergers: Why people first can improve brand and IT consolidations. *Business Horizons*, *60*(1), 123-134. doi:10.1016/j.bushor.2016.09.008

Johnston, M. P. (2017). Secondary data analysis: A method of which the time has come. *Qualitative and quantitative methods in libraries*, *3*, 619-626. Retrieved from http://www.qqml-journal.net

Junni, P., & Sarala, R. M. (2014). The role of leadership in mergers and acquisitions: A review of recent empirical studies. In S. Finkelstein & C. L. Cooper (Eds.), *Advances in Mergers and Acquisitions* (Vol. 13, pp. 181-200). Emerald Group Publishing Limited. doi:10.1108/S1479-361X20140000013007

Karanasios, S., & Allen, D. (2018). Activity theory in information systems research. *Information Systems Journal*, *28*(3), 439-441. doi:10.1111/isj.12184

Kalogirou, S. A., Karellas, S., Badescu, V., & Braimakis, K. (2016). Exergy analysis on solar thermal systems: a better understanding of their sustainability. *Renewable Energy*, *85*, 1328-1333. doi:10.1016/j.renene.2015.05.037

Kanji, GopalK. (2008). Leadership is prime: How do you measure leadership excellence? *Total Quality Management & Business Excellence*, *19*(4), 417-427. doi:10.1080/14783360802002834

Karanasios, S., Allen, D., & Finnegan, P. (2015). Information systems journal special issue on: activity theory in information systems research, *Information Systems Journal*, 25 (3), 309-313. doi:10.1111/isj.12061

Keevash, J., Norman, A., Forrest, H., & Mortimer, S. (2018). What influences women to stop or continue breastfeeding? A thematic analysis. *British Journal of Midwifery*, *26*, 651-658. doi:10.12968/bjom.2018.26.10.651

Kelloway, E. K., Mullen, J., & Francis, L. (2006). Divergent effects of transformational and passive leadership on employee safety. *Journal of Occupational Health Psychology*, *11*(1), 76-86. doi:10.1037/1076-8998.11.1.76

King, M. W. (2017). Health care efficiencies: Consolidation and alternative models vs. health care and antitrust regulation – irreconcilable differences? *American Journal of Law & Medicine*, *43*(4), 426-467. doi:10.1177/0098858817753407

Klar, B., & Shufelt, G. P. (2015). Charting a path to efficiencies following a merger. *Healthcare Financial Management: Journal of The Healthcare Financial Management Association*, *69*(6), 62-69. Retrieved from https://www.hfma.org

Koch, T. G., Wendling, B. W., & Wilson, N. E. (2017). How vertical integration affects the quantity and cost of care for Medicare beneficiaries. *Journal of health economics*, *52*, 19-32. doi:10.1016/j.jhealeco.2016.12.007

Kohli, R., & Tan, S. S.-L. (2016). Electronic health records: How can IS researchers contribute to transforming healthcare? *MIS Quarterly, 40*(3), 553-574. doi:10.25300/MISQ/2016/40.3.02

Laerd Statistics. (2018). Multiple regression using SPSS statistics. *Statistical tutorials and software guides*. Retrieved from https://statistics.laerd.com/

Lauser, B. (2010). Post-merger integration and change processes from a complexity perspective. *Baltic Journal of Management*, *5*(1), 6-27. doi:10.1108/17465261011016531

Leidner, D. E., Lo, J., & Preston, D. (2011). An empirical investigation of the relationship of IS strategy with firm performance. *Journal of Strategic Information Systems*, *20*, 419-437. doi:10.1016/j.jsis.2011.09.001

Lim, J.-S., Lim, K.-S., Heinrichs, J. H., Al-Aali, K., Aamir, A., & Qureshi, M. I. (2018). The role of hospital service quality in developing the satisfaction of the patients and hospital performance. *Management Science Letters,* 1353-1362. doi:10.5267/j.msl.2018.9.004

Lohrke, F. T., Frownfelter-Lohrke, C., & Ketchen, D. J. (2016). The role of information technology systems in the performance of mergers and acquisitions. *Business Horizons*, *59*(1), 7-12. doi: 10.1016/j.bushor.2015.09.006

Lu, S. (2018). The pattern of M & A integration: A literature review. *American Journal of Industrial and Business Management*, *08*(02), 313-326. doi:10.4236/ajibm.2018.82019

Madanchian, M., Hussein, N., Noordin, F., & Taherdoost, H. (2017). Leadership effectiveness measurement and its effect on organization outcomes. *Procedia Engineering*, *181*, 1043-1048. doi:10.1016/j.proeng.2017.02.505

Malik, A., & Bebenroth, R. (2018). Mind your language!: Role of language in strategic partnerships and post-merger integration. *Journal of Global Operations and Strategic Sourcing*, *11*(2), 202-223. doi:10.1108/JGOSS-05-2017-0011

Marchand, M. (2015). When the south takes over the north: Dynamics of up-market integrations by emerging multinationals. *M@n@gement*, *18*(1), 31-51. doi:10.3917/mana.181.0031

Markazi-Moghaddam, N., Arab, M., Ravaghi, H., Rashidian, A., Khatibi, T., & Zargar Balaye Jame, S. (2016). A knowledge map for hospital performance concept: Extraction and analysis: A narrative review article. *Iranian Journal of Public Health*, *45*(7), 843-854. Retrieved from https://www.ncbi.nlm.nih.gov/

Martin, J. A., Butler, F. C., & Bolton, J. F. (2017). Serendipitous value creation in mergers and acquisitions of entrepreneurially-oriented firms: The moderating role of political skill. *Journal of Managerial Issues*, *29*(4), 380-394. Retrieved from http://www.pittstate.edu/business/journal-of-managerial-issues/index.dot

McCarthy, K. J., & Aalbers, H. L. (2016). Technological acquisitions: The impact of geography on post-acquisition innovative performance. *Research Policy, 45*(9), 1818-1832. doi:10.1016/j.respol.2016.05.012

McCusker, K., & Gunaydin, S. (2015). Research using qualitative, quantitative or mixed methods and choice based on the research. *Perfusion*, *30*(7), 537-542. doi:10.1177/0267659114559116

McFadden, K. L., Stock, G. N., & Gowen, C. R. (2015). Leadership, safety climate, and continuous quality improvement: Impact on process quality and patient safety. *Health Care Management Review*, *40*(1), 24-34. doi:10.1097/HMR.0000000000000006

McKean, E. L., & Snyderman, C. H. (2019). Leadership driving safety and quality. *Otolaryngologic Clinics of North America*, *52*(1), 11-22. doi:10.1016/j.otc.2018.08.002

Medicare (2019). *Hospital Compare*. Retrieved from https://www.medicare.gov

Mello, M. M., Chandra, A., Gawande, A. A., & Studdert, D. M. (2010). National costs of the medical liability system. *Health affairs*, *29*(9), 1569-1577. doi:10.1377/hlthaff.2009.0807

Nandi, S., & Nandi, M. L. (2017). Revisiting activity theory: A useful framework for improving post-acquisition integration effectiveness. *Vilakshan: The XIMB Journal of Management*, *14*(1), 1-18. Retrieved from https://xub.edu.in

Naranjo-Gil, D. (2015). The role of top management teams in hospitals facing strategic change: Effects on performance. *International Journal of Healthcare Management, 8*(1), 34-41. doi:10.1179/2047971914Y.0000000078

Nason, R. S., & Wiklund, J. (2018). An assessment of resource-based theorizing on firm growth and suggestions for the future. *Journal of Management, 44*, 32-60. doi:10.1177/0149206315610635

Newmeyer, C. E., Swaminathan, V., & Hulland, J. (2016). When products and brands trade hands: A framework for acquisition success. *Journal of Marketing Theory & Practice, 24*(2), 129-146. doi:10.1080/10696679.2016.1130539

Nimon, K. F., & Oswald, F. L. (2013). Understanding the results of multiple linear regression: Beyond standardized regression coefficients. *Organizational Research Methods, 16*(4), 650-674. doi:10.1177/1094428113493929

Noles, M. J., Reiter, K. L., Boortz-Marx, J., & Pink, G. (2015). Rural hospital mergers and acquisitions: Which hospitals are being acquired and how are they performing afterward? *Journal of Healthcare Management / American College of Healthcare Executives, 60*(6), 395-407. doi:10.1097/00115514-201511000-00005

Northouse, P. G. (2016). *Leadership: Theory and practice* (7th ed.). Thousand Oaks, CA: Sage.

O'Dea, A., & Flin, R. (2001). Site managers and safety leadership in the offshore oil and gas industry. *Safety science, 37*(1), 39-57. doi:10.1016/s0925-7535(00)00049-7

Olcay, G. A., Öner, M. A., & Olcay, A. B. (2019). A conceptual view of exergy destruction in mergers and acquisitions. *Technological Forecasting and Social Change*, *143*, 336-352. doi:10.1016/j.techfore.2018.06.008

Osarenkhoe, A., & Hyder, A. (2015). Marriage for better or for worse? Towards an analytical framework to manage post-merger integration process. *Business Process Management Journal*, *21*, 857-887. doi:10.1108/BPMJ-07-2014-0070

Pablo, A. L. (1994). Determinants of acquisition integration level: A decision-making perspective. *Academy of management Journal*, *37*, 803-836. doi:10.2307/256601

Parand, A., Dopson, S., Renz, A., & Vincent, C. (2014). The role of hospital managers in quality and patient safety: A systematic review. *BMJ Open*, *4*(9), e005055-e005055. doi:10.1136/bmjopen-2014-005055

Perugini, M., Gallucci, M., & Costantini, G. (2018). A practical primer to power analysis for simple experimental designs. *International Review of Social Psychology*, *31*(1), 20. doi:10.5334/irsp.181

Pfeffer, J. (1976). Beyond management and the worker: The institutional function of management. *Academy of Management Review*, *1*(2), 36-46. doi:10.5465/AMR.1976.4408661

Pfeffer, J., & Salancik, G. R. 1978. *The external control of organizations: A resource dependence perspective*. New York: Harper & Row.

Porter, M. E., Larsson, S., & Lee, T. H. (2016). Standardizing patient outcomes measurement. *New England Journal of Medicine*, *374*(6), 504-506. doi:10.1056/nejmp1511701

Postma, J., & Roos, A. F. (2016). Why healthcare providers merge. *Health Economics, Policy and Law*, *11*(2), 121-140. doi:10.1017/S1744133115000304

Pourmohammadi, K., Hatam, N., Shojaei, P., & Bastani, P. (2018). A comprehensive map of the evidence on the performance evaluation indicators of public hospitals: a scoping study and best fit framework synthesis. *Cost Effectiveness and Resource Allocation*, *16*. doi:10.1186/s12962-018-0166-z

Rahman, M., & Lambkin, M. (2015). Creating or destroying value through mergers and acquisitions: A marketing perspective. *Industrial Marketing Management*, *46*, 24-35. doi:10.1016/j.indmarman.2015.01.003

Rahman, M., Lambkin, M., & Hussain, D. (2016). Value creation and appropriation following M&A: A data envelopment analysis. *Journal of Business Research*, *69*, 5628-5635. doi:10.1016/j.jbusres.2016.03.070

Rajaram, R., Chung, J. W., Kinnier, C. V., Barnard, C., Mohanty, S., Pavey, E. S., ... & Bilimoria, K. Y. (2015). Hospital characteristics associated with penalties in the Centers for Medicare & Medicaid Services hospital-acquired condition reduction program. *JAMA*, *314*, 375-383. doi:10.1001/jama.2015.8609

Rankin, K. M., Gavin, L., Moran, J. W., Kroelinger, C. D., Vladutiu, C. J., Goodman, D. A., & Sappenfield, W. M. (2016). Importance of performance measurement and MCH epidemiology leadership to quality improvement initiatives at the national, state and local levels. *Maternal and Child Health Journal*, *20*, 2239-2246. doi:10.1007/s10995-016-2105-y

Rebner, S., & Yeganeh, B. (2019). Mindful mergers & acquisitions. *OD Practitioner*, *51*(1), 11-16. Retrieved from https://www.odnetwork.org

Reddy, K., Qamar, M., & Yahanpath, N. (2019). Do mergers and acquisitions create value?: The post-M&A performance of acquiring firms in China and India. *Studies in Economics and Finance*, *36*(2), 240-264. doi:10.1108/SEF-01-2018-0027

Reynolds, P., & Yetton, P. (2015). Aligning business and IT strategies in multi-business organizations. *Journal of Information Technology*, *30*(2), 101-118. doi:10.1057/jit.2015.1

Richter, A., von Thiele Schwarz, U., Lornudd, C., Lundmark, R., Mosson, R., & Hasson, H. (2015). iLead-A transformational leadership intervention to train healthcare managers' implementation leadership. *Implementation Science*, *11*(1), 108. doi:10.1186/s13012-016-0475-6

Rivard, S., Raymond, L., & Verreault, D. (2006). Resource-based view and competitive strategy: An integrated model of the contribution of information technology to firm performance. *The Journal of Strategic Information Systems*, *15*(1), 29-50. doi:10.1016/j.jsis.2005.06.003

Rosopa, P. J., Schaffer, M. M., & Schroeder, A. N. (2013). Managing heteroscedasticity in general linear models. *Psychological Methods*, *18*(3), 335-351. doi:10.1037/a0032553

Ross, J., Stevenson, F., Lau, R., & Murray, E. (2016). Factors that influence the implementation of e-health: a systematic review of systematic reviews (an update). *Implementation science*, *11*(1), 146. doi:10.1186/s13012-016-0510-7

Rouzies, A., Colman, H. L., & Angwin, D. (2018). Recasting the dynamics of post-acquisition integration: An embeddedness perspective. *Long Range Planning*. doi:10.1016/j.lrp.2018.03.003

Salkind, N. J. (2010). *Encyclopedia of research design.* Thousand Oaks, CA: SAGE Publications, Inc. doi:10.4135/9781412961288

Sandberg, K. C. (2018). Leadership in quality improvement. *Current Problems in Pediatric and Adolescent Health Care, 48*(8), 206-210. doi:10.1016/j.cppeds.2018.08.007

Sapkota, R., Ivanov, S., & Bachman, P. (2019). Issues and analysis of leadership, strategy, behavior, and accounting of mergers and acquisitions: A case study of a merger of two mega-corporations. *12*(2), 180-191. Retrieved from http://www.ijoi-online.org/

Sarala, R. M., Junni, P., Cooper, C. L., & Tarba, S. Y. (2016). A sociocultural perspective on knowledge transfer in mergers and acquisitions. *Journal of Management, 42*, 1230-1249. doi:10.1177/0149206314530167

Sarto, F., & Veronesi, G. (2016). Clinical leadership and hospital performance: Assessing the evidence base. *BMC Health Services Research, 16*(S2). doi:10.1186/s12913-016-1395-5

Saunders, M. N. K., Lewis, P., & Thornhill, A. (2015). *Research methods for business students* (7th ed.). Essex, England: Pearson Education Limited.

Savovic, S. (2017). The impact of dimensions of transformational leadership on post-acquisition performance of acquired company. *Ekonomski Horizonti*, *19*(2), 95-108. doi:10.5937/ekonhor1702095S

Schilling, M. A. (2018). Potential sources of value from mergers and their indicators. *The Antitrust Bulletin*, *63*(2), 183-197. doi:10.1177/0003603X18770068

Schmitt, M. (2017). Do hospital mergers reduce costs? *Journal of Health Economics*, *52*, 74-94. doi:10.1016/j.jhealeco.2017.01.007

Schönreiter, I. M. (2018). Methodologies for process harmonization in the post-merger integration phase. *Business Process Management Journal; Bradford*, *24*(2), 330-356. doi:10.1108/BPMJ-07-2016-0141

Shultz, K. S., Hoffman, C. C., & Reiter-Palmon, R. (2005). Using archival data for IO research: Advantages, pitfalls, sources, and examples. *The Industrial-Organizational Psychologist*, *42*(3), 31. Retrieved from https://www.siop.org

Singh, H., & Sittig, D. F. (2016). Measuring and improving patient safety through health information technology: The health IT safety framework. *BMJ Quality & Safety*, *25*(4), 226-232. doi:10.1136/bmjqs-2015-004486

Sitkin, S. B., & Pablo, A. (2005). The neglected importance of leadership in mergers and acquisitions. *Mergers and acquisitions: Managing culture and human resources*, 208-223. Palo Alto, CA: Stanford University Press.

Srinivasan, D., & Desai, N. R. (2017). The impact of the transition from volume to value on heart failure care: implications of novel payment models and quality improvement initiatives. *Journal of cardiac failure*, *23*(8), 615-620. doi:10.1016/j.cardfail.2017.06.005

Steigenberger, N. (2017). The challenge of integration: A review of the M&A integration literature. *International Journal of Management Reviews*, *19*(4), 408-431. doi:10.1111/ijmr.12099

Sumskis , S., & Moxham, L. J. (2017). The use of van Kaam's psychophenomenological method to interpret the meaning of resilience in the experiences of people with schizophrenia. *Nurse Researcher (2014+)*, *25*(3), 8. doi:10.7748/nr.2017.e1514

Swaminathan, V., Groening, C., Mittal, V., & Thomaz, F. (2014). How achieving the dual goal of customer satisfaction and efficiency in mergers affects a firm's long-term financial performance. *Journal of Service Research*, *17*(2), 182-194. doi:10.1177/1094670513510196

Tasi, M. C., Keswani, A., & Bozic, K. J. (2019). Does physician leadership affect hospital quality, operational efficiency, and financial performance? *Health Care Management Review*, *44*(3), 256-262. doi:10.1097/HMR.0000000000000173

Thomson Reuters. (2018). First nine months. *Mergers & Acquisitions Review Legal Advisors.* 1-3. Retrieved from http://dmi.thomsonreuters.com/

Thürer, M., Tomašević, I., Stevenson, M., Fredendall, L. D., & Protzman, C. W. (2018). On the meaning and use of *excellence* in the operations literature: A systematic

review. *Total Quality Management & Business Excellence*, 1-28. doi:10.1080/14783363.2018.1434770

Turner, J. R., & Baker, R. M. (2019). Complexity theory: An overview with potential applications for the social sciences. *Systems, 7*(1), 4. doi:10.3390/systems7010004

U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality. (2017). *Compendium of U.S. health systems, 2016*. Retrieved from http://www.ahrq.gov

U.S. Department of Health and Human Services, Center for Medicare & Medicaid Services (2016). *Hospital Compare*. Retrieved from https://www.cms.gov

U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. (2018). *NHE projections 2018-2027*. Retrieved from https://www.cms.gov

Uzelac, B., Bauer, F., Matzler, K., & Waschak, M. (2016). The moderating effects of decision-making preferences on M&A integration speed and performance. *International Journal of Human Resource Management, 27*(20), 2436-2460. doi:10.1080/09585192.2015.1116457

Vasilaki, A., Tarba, S., Ahammad, M. F., & Glaister, A. J. (2016). The moderating role of transformational leadership on HR practices in M&A integration. *The International Journal of Human Resource Management, 27*(20), 2488-2504. doi:10.1080/09585192.2016.1204556

Vaughn, T., Koepke, M., Kroch, E., Lehrman, W., Sinha, S., & Levey, S. (2006). Engagement of leadership in quality improvement initiatives: executive quality

improvement survey results. *Journal of Patient Safety*, *2*(1), 2-9. Retrieved from https://journals.lww.com

Vitak, J., Shilton, K., & Ashktorab, Z. (2016, February). Beyond the Belmont principles: Ethical challenges, practices, and beliefs in the online data research community. In *Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing* (pp. 941-953). doi:10.1145/2818048.2820078

Wang, T., Wang, Y., & McLeod, A. (2018). Do health information technology investments impact hospital financial performance and productivity? *International Journal of Accounting Information Systems*, *28*, 1-13. doi:10.1016/j.accinf.2017.12.002

Weber, Y., & Tarba, S. Y. (2013). Sociocultural integration in mergers and acquisitions - New perspectives. *Thunderbird international business review*, *55*(4), 327-331. doi:10.1002/tie.21548

Wei, T., & Clegg, J. (2017). Exploring sources of value destruction in international acquisitions: A synthesized theoretical lens. *International Business Review*, *26*(5), 927-941. doi:10.1016/j.ibusrev.2017.03.002

Wei, T., & Clegg, J. (2018). Effect of organizational identity change on integration approaches in acquisitions: Role of organizational dominance. *British Journal of Management*, *29*(2), 337-355. doi:10.1111/1467-8551.12226

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic management journal*, *5*(2), 171-180. Retrieved from http://www.jstor.org

West, J., Johnson, G., & Jha, A. K. (2017). Trends in acquisitions of physician practices and subsequent clinical integration: A mixed methods study. *Journal of Evaluation In Clinical Practice, 23*(6), 1444-1450. doi:10.1111/jep.12820

Wijnhoven, F., Spil, T., Stegwee, R., & Fa, R. T. A. (2006). Post-merger IT integration strategies: An IT alignment perspective. *The Journal of Strategic Information Systems, 15*(1), 5-28. doi:10.1016/j.jsis.2005.07.002

Williams, G. S., Mayer, R. W., Chien, W. W., & Williams, C. R. (2015). Information technology integration in a postmerger environment. *Journal of Leadership, Accountability & Ethics, 12*(1), 39-51. Retrieved from http://m.www.na-businesspress.com/Journals.html

Yoon, K., & Kim, C. (2015). A study on the mediating effect of post-merger integration (PMI) on merger stress, leadership, and performance: Focusing on merged public institutions in Korea. *Asian Journal of Political Science, 23*(2), 161-183. doi:10.1080/02185377.2015.1046892

Yukl, G. A. (2013). *Leadership in organizations* (8th ed). Boston: Pearson.

Zaheer, A., Castañer, X., & Souder, D. (2013). Synergy sources, target autonomy, and integration in acquisitions. *Journal of Management, 39*, 604-632. doi:10.1177/0149206311403152

Zand, P. S. (2018). The value of IT due diligence during hospital M&A. *Hfm (Healthcare Financial Management)*, 1–5. Retrieved from hfma.org

Zhang, W., Wang, K., Li, L., Chen, Y., & Wang, X. (2018). The impact of firms' mergers and acquisitions on their performance in emerging economies.

Technological Forecasting and Social Change, *135*, 208-216. doi:10.1016/j.techfore.2018.05.015

Zollo, M., & Singh, H. (2004). Deliberate learning in corporate acquisitions: Post-acquisition strategies and integration capability in U.S. bank mergers. *Strategic Management Journal*, *25*, 1233-1256. doi:10.1002/smj.426