Assessing a Culture of Innovation Leadership on the Human Capital in Healthcare

Cheryl Zipay Kirby

University of Southern Mississippi

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ASSESSING A CULTURE OF INNOVATION LEADERSHIP
OF THE HUMAN CAPITAL IN HEALTHCARE

by

Cheryl Zipay Kirby

Abstract of a Dissertation
Submitted to the Graduate School
of The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

December 2012
ABSTRACT

ASSESSING A CULTURE OF INNOVATION LEADERSHIP
OF THE HUMAN CAPITAL IN HEALTHCARE

by Cheryl Zipay Kirby

December 2012

In today’s organizational structure it is imperative to be innovative in order to maintain or gain market share. Efficiency and adaptability are at the forefront of business strategies. If organizations do not adapt, they cannot compete in today’s economy. Creativity and innovation is key to business acumen when creating a culture of adaptability and growth. The purpose of the study is to determine the culture of innovation leadership competencies perceived by employees at high-performing and low-performing organizations. Three culture of innovation leadership categories; problem-solving intelligence, innovation management, and organizational framework, assist organizations in fostering the creativity of the human capital of a workforce. Leveraging the potential of an organization’s workforce adds value to organizational processes, employee satisfaction, and customer loyalty.

With impending financial penalties beginning in 2013 from the Centers for Medicare and Medicaid Services on hospital 30-day readmission rates because of higher than the expected number of readmissions for heart attack, heart failure, and pneumonia, the challenges for healthcare professionals include providing consistently excellent care for patients while maintaining financial stability for the organization. A survey was used to determine the difference between two hospital groups and the participants’ perception of a culture of innovation leadership.
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OF THE HUMAN CAPITAL IN HEALTHCARE

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A Dissertation
Submitted to the Graduate School
of The University of Southern Mississippi
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for the Degree of Doctor of Philosophy

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Dean of the Graduate School

December 2012
DEDICATION

This dissertation is dedicated to my children Dylan and Brianna. Always know that you have the ability to achieve your dreams. I hope to inspire, empower, and support you on your own personal journey. And in memory of my daddy, Michael John Zipay, Jr.

“I alone cannot change the world, but I can cast a stone across the waters to create many ripples.”
–Mother Teresa
ACKNOWLEDGMENTS

I would like to thank a team of advocates that gave me strength to keep going and make my dream come true. First, I need to thank God for all his blessings. I am eternally grateful to my family for their enduring love, support, and generosity. To my husband Michael, thank you for keeping me grounded and being my champion. To my son Dylan and daughter Brianna, thank you for understanding during the many long hours spent on this journey. To my mom and dad, Beverly and Mike Zipay, thank you for raising me the way you did and teaching me the value of hard work and perseverance. To my in-laws, Dottie and Don Kirby, I truly appreciate all the support and assistance you contributed in the pursuit of my doctorate degree.

A huge thank you goes out to my dissertation committee. To my dissertation Chair Dr. Heather Annulis, I would especially like to thank you for your mentorship, guidance, encouragement, and unprecedented support throughout the writing process. Thank you for being present at every step during this journey. Your belief in me has guided me to this point and I am so grateful that I have the privilege of having you in my life. To Dr. Cyndi Gaudet thank you for making my dream possible. The HCD program has inspired me to surpass my own personal expectations. Dr. Patricia Phillips I would like to thank you for being an inspiration to aspiring consultants and for your willingness to always be available. Your professional knowledge and insight have been invaluable. Dr. Brian Richard, thank you for your guidance with the statistical analyses, the support from you as my professor when my father passed, and the work that you do with Dissertation Bootcamp. The workshop fosters motivation to keep sometimes-idle ABD students continually moving forward. This journey has been such a positive experience.
TABLE OF CONTENTS

ABSTRACT .......................................................................................................................... ii
DEDICATION ...................................................................................................................... iii
ACKNOWLEDGMENTS ........................................................................................................ iv
LIST OF TABLES ................................................................................................................ vii
LIST OF ILLUSTRATIONS ............................................................................................... viii

CHAPTER

I. INTRODUCTION .......................................................................................................... 1

  Statement of the Problem
  Purpose of the Study
  Limitations of the Study
  Delimitations of Study
  Assumptions
  Research Objectives
  Theoretical Framework
  Significance of the Research
  Definitions of Terms
  Summary

II. LITERATURE REVIEW ............................................................................................... 15

  Knowledge Economy
  Value of Innovation
  Innovation in Healthcare
  Culture of Innovation Leadership
  Summary

III. METHODOLOGY ...................................................................................................... 51

  Research Design
  Population
  Survey Instrument
  Instrumentation Validity and Reliability
  Internal and External Validity
  Data Collection Administration
  Data Analysis Procedures
Summary

IV. RESULTS.................................................................................................81
   Introduction
   Demographic Data
   Results of the Analysis
   Summary

V. DISCUSSION............................................................................................97
   Summary
   Conclusions and Discussion
   Conclusion

APPENDIXES..................................................................................................108

REFERENCES................................................................................................119
LIST OF TABLES

Table

1. Innovation Leadership Competencies..............................................................9
2. Knowledge-Based Economy Indicators......................................................19
3. Malloch’s Innovation Leadership Competencies........................................57
4. Analysis of Survey Instrument Question Map for Research Objective 1........60
5. Analysis of Survey Instrument Question Map for Research Objective 2.......65
6. Analysis of Survey Instrument Question Map for Research Objective 3.......66
7. Analysis of Survey Instrument Question Map for Research Objective 4.......69
8. Modification of Dillman, Smyth, and Christian’s Method.............................74
9. Data Analysis Map.......................................................................................77
10. Demographic Statistics of Participants....................................................83
11. Chi Square Analysis of the Demographics...............................................84
12. Cronbach’s Alpha Test for Reliability.......................................................85
13. Group Statistics for a Culture of Innovation Leadership.............................87
14. Independent Samples t-test of a Culture of Innovation Leadership.............88
15. Group Statistics for Problem-Solving Intelligence......................................89
16. Independent Samples t-test of Problem-Solving Intelligence.....................90
17. Group Statistics of Innovation Management..............................................92
18. Independent Samples t-test of Innovation Management................................93
20. Independent Samples t-test of Organizational Framework of Innovation......95
LIST OF ILLUSTRATIONS

Figure

1. Conceptual Framework…………………………………………………………12

2. The Criteria for Selecting the Population……………………………………56
CHAPTER I
INTRODUCTION

The world’s top companies currently rank creativity and innovation among the top ten critical issues related to performance improvement (Davis, 2011). CEOs categorize creativity as a leading skill-set for successful leaders in a time of global economic turmoil (IBM, 2010). The creativity and innovation of employees continue to rise in importance as a concern for businesses (IBM, 2010; Institute for Corporate Productivity, 2011); however, over the past 20 years, creativity scores in children and adults have declined (Bronson & Merryman, 2010). Even as creativity scores decrease, call for new leadership structures in complex business environments requires an adaptive and responsive workforce (Driver, 2001; Hitt & Ireland, 2002). Cultivating creativity and innovation in employees and organizational processes add a competitive advantage for businesses (Amabile, 1996; Amabile, Conti, Coon, Lazenby & Herron, 1996; Driver, 2001; Hitt & Ireland, 2002). New leadership strategies like innovation leadership create opportunities for organizations to foster innovation in employees which creates a shift in organizations to value the importance of human capital.

After World War II, human capital became the most valued aspect of a business or organization (Dychtwald, Erickson, & Morison, 2006; Fitz-Enz, 2009). Fitz-Enz (2009) defines human capital as: (a) the intellectual traits a person brings to a job, (b) the ability to learn, and (c) the sharing of knowledge with others. The current state of the global society is a period known as the information age or the knowledge-based economy (Echols, 2008; Fitz-Enz, 2009; Hitt & Ireland, 2002). Both formal (academic) and informal (on-the-job experience) channels of knowledge investment secure a highly
skilled workforce, which, in turn, increases the chances of innovation produced by employees (Organisation for Economic Co-Operation and Development [OECD], 1996). The OECD defines innovation as knowledge conceived and developed by individuals in and outside of the organization (OECD, 1996). Researchers explain further, “While R&D plays a vital role in the innovation process, much innovation activity is not R&D-based, yet relies on highly skilled workers…and on an organisational structure that is conducive to learning and exploiting knowledge” (OECD, 1996, p. 28). Value associated with human capital sustains the viability for growth in organizations and in forming a competitive edge (Hitt & Ireland, 2002). In 2000, the CEO of Hewlett-Packard, Carly Fiorina stated, “the most magical and tangible and ultimately the most important ingredient in the transformed landscape is people” (Hitt & Ireland, 2002, p. 4). Fostering the human capital of a workforce indicates a new direction for increased competitiveness in the global economy; capitalizing on the creativity and innovation of the workforce represents an advantage over the competition (Miller, 1987; Robinson & Stern, 1997). Increased competitiveness spans many industries including the United States healthcare system.

Statement of the Problem

The competitive environment of the economy fuels changes in the healthcare industry. Healthcare must reinvent itself in order to survive in the current state of healthcare reform. In March 2010, the federal government passed two laws: the Patient Protection and Affordable Care Act and the Healthcare and Education Reconciliation Act of 2010 (American Hospital Association [AHA], 2010; Health Reform, 2010). Both regulations cause U.S. citizens to express concerns regarding affordable healthcare
coverage (American Hospital Association [AHA], 2010; Health Reform, 2010). The new laws contribute to the development of new consumer protections, such as the Hospital Compare website (Florida Health Finder, 2011; Hospital Compare, 2011). The easy-to-use website, accessible to the public, allows consumers to take control of their healthcare by researching quality indicators. Under the two bills, 92% of U.S. residents will receive extended healthcare coverage by 2019 (AHA, 2010). Financial incentives used for hospitals are established as an enhanced performance measure to improve the quality of care within healthcare reform (AHA, 2010; Centers for Medicare and Medicaid Services [CMS], 2007). As a result of the U.S. government’s healthcare reform, the bills cause a negative financial impact on hospitals through readmission rates of specific illnesses.

The Centers for Medicare and Medicaid Services (CMS, 2003) impose financial penalties on hospital readmission as a result of one of the changes in the new federal policies. Starting in 2013, hospitals with 30-day readmissions ranking higher than the expected number of readmissions for heart attack, heart failure, and pneumonia will receive financial penalties (AHA, 2010; Cover, 2009; Missouri Hospital Association, 2010). The rankings are publicly reported on the Hospital Compare website by Medicare’s Pay-for-Reporting Program (Missouri Hospital Association, 2010). The financial penalties will potentially affect the financial bottom line of hospitals. “In its fiscal year 2010 budget, the Obama Administration identified hospital readmissions as a source of potential savings, amounting to an estimated $8.4 billion over 10 years” (Premier, 2009, p. 1). Therefore, the cost savings to hospitals, if the hospitals can avoid the penalties, establish the importance of focusing on the new readmission policy. The new laws demonstrate examples of why hospitals need to implement continuous change
in infrastructure and in daily administrative processes, while they also attempt to maintain excellent care and incorporate improvements in patient outcomes. Targeting improvement strategies throughout the workforce illustrates how organizations can utilize existing human capital for a competitive advantage.

Healthcare professionals must possess creative and innovative skills to effectively solve problems within the healthcare setting (Endsley, 2010; Plsek, 2010). With many healthcare innovations already supported, a culture of innovation leadership within the healthcare system can leverage the human capital of the workforce and its internal innovation processes (Endsley, 2010; Malloch, 2010; Plsek, 2010). A culture of innovation leadership taps into the human capital of the workforce positioned within the foundation of a solid organizational framework that fosters creativity and innovation (Amabile et al., 1996; Anderson & West, 1998; Grigorenko & Sternberg, 2001; Malloch, 2010; Sternberg, Ferrari, Clinkenbeard, & Grigorenko, 1996). Healthcare, as an industry, has the opportunity, especially with new healthcare regulations, to leverage problem solving and innovation through the use of the human intellect, already existing in its workforce.

Purpose of the Study

Organizational stress increases as efficiency and adaptability remains at the forefront of business strategies (Basadur, 1997). Studies show that a workforce that cannot adapt translates to an organization that falls behind in market share and bottom-line profits (Bleedorn, 2003; Driver, 2001; Looy, Martens, & Debackere, 2005). In order for a business to compete in today’s economy, innovation leadership is key to the successful creation of a culture of adaptability and growth (Bleedorn, 2003;

Malloch (2010) states healthcare is no exception. The challenges for healthcare professionals include providing consistently excellent care for patients while maintaining financial stability for the organization. As a result, healthcare professionals must remain adaptable (Malloch, 2010). With the quickly changing landscape in healthcare, leveraging the skill sets of employees creates efficiencies and increased productivity (Malloch, 2010). Simply stated, human capital remains the most valuable asset for companies today (Florida & Goodnight, 2005; Hitt & Ireland, 2002; Kwasniewka & Necka, 2004), and utilizing the human capital of a highly skilled workforce supports the growth of an organization (Fitz-Enz, 2009; Hitt & Ireland, 2002). Therefore, a viable action for hospitals to leverage the workforce expertise includes developing a culture of innovation leadership.

The purpose of the study is to determine the culture of innovation leadership competencies perceived by employees at high-performing and low-performing organizations. A culture of innovation leadership helps organizations foster and embrace the human capital of the workforce, leveraging the potential of an organization’s entire workforce adds value to organizational processes, employee satisfaction, and customer loyalty.

Limitations of the Study

Two limitations for this study exist. The population from which to select participants was limited to the hospitals in the U.S. willing to participate. Many hospitals decline participation in studies conducted by researchers outside of their organization.
because many hospitals distribute several surveys of their own each year (C. Deao, personal communication, May 25, 2011), and administrators seek to avoid employee survey fatigue. The second limitation is that the data for readmission rates did not align to the same time period the survey was administered. In other words, the data meeting the criteria for the hospitals was derived from the data.medicare.gov website which collected the data at an earlier date (Data.Medicare.Gov, 2011). Therefore, the possibility that the data changed between the time the website posted the data meeting the criteria for the hospital and the time the survey population asked to fill out the survey.

Delimitations of the Study

The delimitations help to limit the scope of the study to those hospitals who meet the criteria for the study: those with posted readmission rates and those with a workforce in the hospital who can participate in the study. The criteria for hospital participation in this study are based on measures of readmission rates for heart attack and heart failure, according to data reported on the federally supported website for quality measures (Data.Medicare.Gov, 2011; Hospital Compare, 2011). The focus on heart attack and heart failure groups results from the new readmission policies mandated by the U.S. government. The inclusion of only clinical staff actively working with heart attack and heart failure patients helps limit the boundaries of the research so that it remains based on the new readmission rate policy. A total of 258 U.S. hospitals have readmission rates that exceed national rates for heart attack and heart failure, and the total number of U.S. hospitals with readmission rates below national rates for heart attack and heart failure is 174 (Data.Medicare.Gov, 2011).
The hospital employee population invited to participate in the survey was limited to clinical staff actively caring for heart attack and heart failure patients (with actively defined as more than 50% of their job responsibilities focused on these patients). The time and logistics constraints imposed by healthcare executives on the study allows the participation of only one department within each hospital, the department supporting cardiac care (W. Bussell, personal communication, June 9, 2011; R. Hytoff, personal communication, June 8, 2011; S. Kolseth, personal communication, June 9, 2011; J Odorizzi, personal communication, June 9, 2011; V. Orr, personal communication, June 13, 2011).

Assumptions

The first assumption is that participants were honest as they answered the survey questions. The second assumption is that the participants’ perceptions accurately reflect the culture of innovation leadership in their organization. The third assumption is that the survey instrument accurately measured a culture of innovation leadership (Dillman, Smyth, & Christian, 2000). Ideally, all employees of each hospital would participate in order to get a more accurate measure of the culture of innovation leadership. Several Florida hospital leaders expressed concern with the amount of time the survey would take their entire workforce to complete. This resulted in their decline to participate in the study (W. Bussell, personal communication, June 9, 2011; R. Hytoff, personal communication, June 8, 2011; S. Kolseth, personal communication, June 9, 2011; J Odorizzi, personal communication, June 9, 2011; V. Orr, personal communication, June 13, 2011). The infeasibility of surveying all employees in all the hospitals limited the number of participants.
Research Objectives

According to the U.S. Department of Health and Human Services, national rates for readmissions in heart attack and heart failure are measured and reported as better or worse than U.S national readmission rates. The study addresses the following research objectives:

Research Objective 1: Determine if there is a difference in a culture of innovation leadership between high readmission rate hospitals and low readmission rate hospitals.

Research Objective 2: Determine if there is a difference in problem-solving intelligence between high readmission rate hospitals and low readmission rate hospitals.

Research Objective 3: Determine if there is a difference in innovation management between high readmission rate hospitals and low readmission rate hospitals.

Research Objective 4: Determine if there is a difference in an organizational framework of innovation between high readmission rate hospitals and low readmission rate hospitals.

Theoretical Framework

The study results from a literature review on creativity and innovation in the workplace and specifically on a culture of innovation leadership. The conceptual framework below depicts the relationship of creativity and innovation theories to a culture of innovation leadership. A culture of innovation leadership is defined as the human capital within an organization which fosters creativity and innovation (Amabile et
al., 1996; Anderson & West, 1998; Grigorenko & Sternberg, 2001; Malloch, 2010; Porter-O’Grady & Malloch, 2009; Sternberg, Ferrari, Clinkenbeard, & Grigorenko, 1996). Categories of innovation leadership competencies encompass problem-solving intelligence, innovation management, and an organizational framework for innovation as shown in Table 1. Nine innovation leadership competencies identified by Malloch (2010), self-knowledge and competence, synthesis, formulation, collaboration, managing knowledge, coaching, essence of innovation, and innovation knowledge correspond to the three foundational principles representing a culture of innovation leadership.

Table 1

<table>
<thead>
<tr>
<th>Categories</th>
<th>Innovation Leadership Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem-Solving Intelligence</td>
<td>• Self-Knowledge &amp; Competence</td>
</tr>
<tr>
<td></td>
<td>• Synthesis</td>
</tr>
<tr>
<td></td>
<td>• Formulation</td>
</tr>
<tr>
<td>Innovation Management</td>
<td>• Collaboration</td>
</tr>
<tr>
<td></td>
<td>• Managing Knowledge</td>
</tr>
<tr>
<td></td>
<td>• Coaching</td>
</tr>
<tr>
<td>Organizational Framework for</td>
<td>• Essence of Innovation</td>
</tr>
<tr>
<td>Innovation</td>
<td>• Innovation Knowledge</td>
</tr>
</tbody>
</table>

Noted. Adapted from Malloch (2010).

The conceptual framework illustrates the concepts that support a culture of innovation leadership. The problem-solving intelligence category represents four competencies: self-knowledge and competence, synthesis, and formulation. Although not listed as a competency, creativity fundamentally exists within both problem-solving and
innovation (Sternberg, 1988, 1999; Sternberg & Lubart, 1995). Since idea generation is the first part of the innovative process (Scott & Bruce, 1994; Unsworth, Wall, & Carter, 2005; West, 2002), using one’s own self-knowledge, synthesizing information, and formulating a solution are key attributes to problem-solving intelligence (Sternberg, 1988, 1999; Sternberg & Lubart, 1995). Problem-solving techniques are grounded in the triarchic theory of intelligence; a theory of reasoning that builds on the cognitive approach of human intellect (Sternberg, 1988, 1999; Sternberg & Lubart, 1995). Problem-solving techniques, therefore, are key components of the process before innovation takes place.

The Sternberg Triarchic Abilities Test (STAT) assesses the analytical, creative, and practical intelligence of the human intellect (Grigorenko & Sternberg, 2001; Sternberg, 1988, 2006; Sternberg & Clinkenbeard, 1995; Sternberg et al., 1996). Grigorenko and Sternberg (2001) suggest the triarchic theory and STAT are predictors of adaptability, an important characteristic of problem-solving intelligence. The work of Sternberg illustrates the supporting role the triarchic theory of intelligence serves within a culture of innovation leadership, especially when it is evaluated using Malloch’s nine competencies.

Innovation management is the category of innovation leadership that includes collaboration, managing knowledge, and coaching. The leader-member exchange theory provides an explanation for the ways in which innovation develops connections between leadership and employees (Dansereau, Graen & Haga, 1975; Scott & Bruce, 1994). For leaders to effectively manage innovation, innovative processes, or innovation tools, trust and commitment must exist between the employer and employees (Dansereau et al.,
Therefore, the concepts of the leader-member exchange theory remain critical to the equation of innovation leadership.

The final category of innovation leadership competencies, the organizational framework of innovation, includes essence of innovation and innovation knowledge. Intrinsic motivation theory explains the motivation of employees within organizations and offers a theoretical foundation for the organizational framework of innovation. Increasing personal gains and rewards resulting from an individual’s intrinsic motivation leads to engaged employees within the organization (Deci, 1971; Thomas, 2002).

The research builds on the current creativity and innovation literature. The theoretical framework of the study includes triarchic theory (Sternberg, 1988, 1999; Sternberg & Lubart, 1995), leader-member exchange theory (Dansereau et al., 1975; Scott & Bruce, 1994), and intrinsic motivation theory (Deci, 1971; Thomas, 2002). Previous research by Amabile et al. (1996), Anderson and West (1998), Grigorenko and Sternberg (2001), Malloch (2010), and Sternberg et al. (1996), which reveals the importance of employee engagement in organizations, will serve as support for the study. Not only does the previous research identify nine innovation leadership competencies that create a culture of innovation leadership, it shows that when leaders know how to foster and embrace the human capital of the workforce through innovation, they can offer an understanding of the values of their employees and their clients or customers. In a hospital setting, a culture of innovation leadership has the potential to decrease the readmission rates of heart attack and heart failure patients in a hospital.
Conceptual Framework

Assessing a Culture of Innovation Leadership and the Impact on Human Capital in Healthcare

Figure 1. Conceptual framework for the study of assessing organizational culture of innovation leadership in a healthcare organization.

Significance of the Research

The results of this research can help establish a foundation for organizations (a) to assess a culture of innovation leadership and (b) to maximize resources by tapping the human capital of the workforce.

Definition of Terms

Coaching. A way to encourage the use of innovation tools by supporting and reinforcing the value of innovation (Malloch, 2010).

Collaboration. Working as a group toward a common goal (Malloch, 2010).

Creativity. Unique ideas developed while trying to problem solve (Scott & Bruce, 1994; Unsworth et al., 2005; West, 2002).

Culture of innovation leadership. A work environment that allows leaders to tap into the human capital of a workforce positioned within the foundation of a solid
organizational framework that fosters creativity and innovation (Amabile et al., 1996; Anderson & West, 1998; Grigorenko & Sternberg, 2001; Malloch, 2010; Sternberg et al., 1996).

*Essence of innovation.* The understanding of the innovation concept within a process that uses innovation tools and allows the dynamics that innovation can create within an organization (Malloch, 2010).

*Formulation.* The ability to take information and creatively integrate it into the organizational environment (Malloch, 2010).

*Innovation.* A successful implementation of creative ideas within an organization (Amabile et al., 1996; Scott & Bruce, 1994; West, 2002).

*Innovation knowledge.* The ability to strategically understand innovation and the innovation process within the organization (Malloch, 2010).

*Managing knowledge.* The ability to create and generate knowledge that will effectively support a system that fosters, stores, and disseminates the creativity and innovation of its employees (Malloch, 2010).

*Self-knowledge and competence.* The analytical processing of one’s own personal strengths and weaknesses (Malloch, 2010).

*Synthesis.* The ability of an individual to take given information and integrate the concepts within an organization in a creative fashion (Malloch, 2010).

*Value of innovation.* The strengthening of brand loyalty through the production or addition of new products or services for the consumer (Verloop, 2004). The concept also includes the common consumer values of a product or service (Kim & Mauborgne, 1999).
Summary

The research study assessed a culture of innovation leadership in healthcare in the face of newly enacted federal laws. For most organizations, the value of their human capital remains a key component if they are to survive financially in the current marketplace (Echols, 2008; Fitz-Enz, 2009; Hitt & Ireland, 2002). This is true of the healthcare system as it continues to experience many changes due to enacted laws. As hospitals face the potential threat of financial penalties if they cannot or do not comply with new regulations a culture of innovation leadership becomes even more important (AHA, 2010; Hospital Compare, 2011; Health Reform, 2010). In order to maintain market stability, especially with the increased compliance requirements so intricately linked to the hospital’s financial success, the healthcare system, as well as individual hospitals, must incorporate novel ideas regarding both cost savings and improved patient care into the workplace. The incorporation of new practices must be supported by a culture of innovation in order to succeed.

Chapter II provides a review of current literature that covers the knowledge economy, the value of innovation, the foundation of creativity and innovation, innovation in healthcare, and a culture of innovation leadership. Chapter III explains the methodology of the study. Details include the research design, the population, the variables of the study, the survey instrument, validity and reliability, data collection, and data analysis procedures.
CHAPTER II

LITERATURE REVIEW

This study expands current research on creativity and innovation by assessing a culture of innovation leadership in healthcare and the impact on human capital development. Chapter II provides four sections reviewing current literature which forms the basis of the theoretical framework located in Chapter I. The first section introduces the knowledge economy and the need for creativity and innovation in the workplace. The second section explains why innovation is valuable to stakeholders followed by an explanation of the value of innovation in healthcare settings. Finally, the literature reviews a culture of innovation leadership and its importance.

Knowledge Economy

For the first time, beginning in 1990, creative quotient (CQ) scores declined in 300,000 children and adults; however, intelligence quotient scores steadily increased over the same time period. The findings startled business and academic communities (Bronson & Merryman, 2010). Interestingly, the IBM 2010 Global CEO Study reveals creativity as the most salient attribute for the success of future leaders (Carr, 2010). Navi Radjou, (IBM, 2010) Executive Director for the Centre for India and Global Business with the University of Cambridge agreed,

I have to know and identify how to unleash and harness the creativity in my global organization and also in my global ecosystem so that I can tap into the creativity and unleash that among my customers, my employees, and my partners. (IBM, 2010)
Radjou contends shifting from an antiquated leadership approach to a progressive leadership approach creates a successful business in today’s global economy (IBM, 2010).

According to Bassi and McMurrer (2005), three notable economic eras exist including Agrarian, Industrial, and Knowledge Economies. The Agrarian Era base was characterized as a global farming era (Bassi & McMurrer, 2005). World history demonstrates the growth of the Industrial Era eventually superseded the Agrarian Era by most of the labor force working in factories (Oshima, 1986). The Industrial Era capital included the physical capital of an organization recognized by buildings and equipment (Khan, 2008; Bassi & McMurrer, 2005). The standard of living rose for the majority of the population with an increase of economic growth (Khan, 2008). Organizations viewed employees as a cost rather than a competitive advantage (Bassi & McMurrer, 2005). Eventually, organizations realized the potential of human capital. Florida (2002) suggests in a knowledge economy the organization mindset focuses on the value of the human capital of the workforce as an asset and innovative thinking remains a valued business commodity in the knowledge-based economy. Florida (2002) acknowledges a knowledge-based economy with a foundation in education that supports innovative thinking.

A knowledge-based economy encompassing the industry, research, and development needs of a region as well as education supporting local businesses, translates into a thriving economy with an emphasis on the human capital of its workforce (Asia-Pacific Economic Cooperation [APEC], 2003; Organisation for Economic Co-Operation and Development [OECD], 1996). Knowledge remains a
fundamental factor in economic growth and employment opportunities (APEC, 2003; OECD, 1996). Rathegeber (2009), CEO of The Connecticut Business and Industry Association, states, “one of every four workers today is employed in a job category that did not even exist 40 years ago” (p. 42). Traditionally, the literature suggests ‘years of education’ as a leading indicator for knowledge-based economies (OECD, 1996).

Although still used today, ‘years of education’ does not appear as the ultimate gauge for a knowledge-related indicator; quality of teaching and return on investment for training serve as indicators to measure knowledge-based economies (OECD, 1996). In today’s economy, occupations directly relate to the education students acquire and the economy from which the occupation develops (Rathegeber, 2009). Indicators of a knowledge-based economy include research, education investment, formal and informal channels, employment of a highly skilled workforce, public-sector research, higher education, and knowledge-related indicators. The key drivers of an economy include knowledge and technology, workforce education, and training models as the infrastructure of economic architecture. Continuous learning and the agility to update and modify information into workforce competencies remain critical in handling information and using knowledge in a practitioner relationship (OECD, 1996).

Several frameworks explain knowledge-based economies. The most noted include the Organization for Economic Co-Operation and Development (OECD) framework, the Asia-Pacific Economic Cooperation (APEC) framework, and the World Bank framework (Leung, 2004). Developed in 1996, the OECD framework offers trends and indicators for a knowledge-based economy (Leung, 2004; OECD, 1996). Measuring the data derived from a knowledge-based economy sets-up the OECD framework (Leung,
This framework includes five indicators; one of which encompasses measuring knowledge and learning (Leung, 2004; OECD, 1996; Trewin, 2002). The OECD (1996) realizes the challenges related to quantifying knowledge. As of 2001, a modification to the model includes fostering innovation and investment in human capital as expansive elements to the framework (Leung, 2004).

The next framework noted in the research that explains knowledge-based economies is the APEC framework. APEC, established in 1989, touts the mission of respect for making the Asian and Pacific regions of the world economically a better place (APEC, 2003). The framework includes education and training as a high priority (APEC, 2003). The World Bank framework refers to knowledge workers’ availability. The Knowledge Assessment Scorecard, developed by the World Bank, consists of fourteen variables, and features five areas pivotal in creating a knowledge-based economy (Leung, 2004). The list includes education and innovation systems (Leung, 2004; Malhotra, 2003; Trewin, 2002). In a speech to the United Nations, the founder of the Knowledge Management Network, Yogesh Malhotra, Ph.D., states that countries wanting to access and evaluate knowledge-based systems need to use models to help determine accurate indicators (Malhotra, 2003). Table 2 compares the knowledge-based leading economy frameworks.
Table 2

Knowledge-Based Economy Indicators

<table>
<thead>
<tr>
<th>Framework</th>
<th>Description</th>
</tr>
</thead>
</table>
| OECD Framework                | • Importance of a stable & open macro-economic environment with effectively functioning markets  
|                               | • The diffusion of information and communication technology                   |
|                               | • Fostering innovation                                                      |
|                               | • Investing in human capital                                                |
|                               | • Stimulating firm creation                                                 |
| APEC Framework                | • Innovation and technological change pervasive and supported by an effective national innovation system |
|                               | • Human resources development pervasive                                     |
|                               | • An efficient infrastructure operates, in information and communication technology |
|                               | • The business environment supportive of enterprise and innovation          |
| The World Bank Framework      | • Overall performance of the economy                                       |
|                               | • Economic incentive and institutional regime                               |
|                               | • Education and human resources                                            |
|                               | • Innovation system                                                        |
|                               | • Information infrastructure                                               |

Among the different knowledge-based economy indicators, education and the human capital of the workforce serve as metrics for a knowledge-based economy. The three education indicators for a knowledge-based economy measure workforce education levels, training performance outcomes, and dedicated training dollars in an organization (Leung, 2004; Malhotra, 2003; OECD, 1996; Trewin, 2002).

Within the knowledge-based economy, Florida (2002) identifies a new economic class featuring education and the human capital of the workforce. The creative class demonstrates factors to consider when focusing on problem-solving and intuitive
thinking. Based on trends extracted from the economy, Florida explains and demonstrates creativity as a valued financial commodity in today’s business world. According to Florida (2002),

The creative class consists of people who add economic value through their creativity. It thus includes a great many knowledge workers, symbolic analysts, and professional and technical workers, but emphasizes their true role in the economy. My definition of class emphasizes the way people organize themselves into social groupings and collective identities based largely on their economic role. Their social and cultural preferences, consumption and buying habits, and their social identities all flow from this. (p. 68)

Florida (2002) divides the creative class into the super creative core and creative professionals. The super creative core group of people produces a creative process or design that is widely distributed throughout society. The super creative core group develops new products or processes by using the human intellect like a scientist when developing a new drug or a novelist when writing a new book (Florida, 2002). Creative professionals work in knowledge-based fields as problem solvers thinking dependently. Florida’s concept states a workforce of skilled and educated people create highly competitive communities, and a community wanting to improve economically needs to cater to the creative classes’ preferred urban lifestyle (Donegan, Drucker, Goldstein, Lowe, & Malizia, 2008; Florida, 2002). According to Florida (2002), the creative class makes up 35% of the workforce in leading cities. Knowledge-based employment expectations include growth year after year. Florida’s data reveals the importance of
creativity and innovation in a constantly changing world.

The economic economy classification describes the creative class. Creative individuals, drawn out of business, technology, and artistic cultures serve as super powers of economic growth. Economic planners utilize Florida’s model as a road map for future economic development in targeted areas (Donegan et al., 2008; Florida, 2002).

Researchers question the Florida model; economic planners using standard formulated models now adapt the ‘3 T’s’—talent, tolerance, and technology for economic planning (Donegan et al., 2008; Wilson & Keil, 2008). Donegan et al. (2008) compare the Florida scales of talent, tolerance, and technology to more traditional economic development theories, human capital, and industry structure. Donegan et al. (2008) confirm traditional methods of determining metropolitan job and income growth as better predictors of economic outcomes. The economy remains global, and the workforce sustains the essence of a knowledge-based society (TFFAI, 2006). However, as an economic planning initiative, Florida’s scales do not support statistically strong evidence of economic growth, but the scales do reveal the importance of self-knowledge to establish an organization’s diversity (Donegan et al., 2008). The literature demonstrates the important role creativity and innovation play in a knowledge-based economy. The next section discusses the value of creativity and innovation in the workplace.

Value of Innovation

Value and how value associates with creativity and innovation reflects the importance of growing a new idea. Value in creativity and innovation allows sustainable and practical innovations for success in organizations (Gereffi, Humphrey & Sturgeion, 2005; Ramirez, 1999; Stabell & Fjeldstad, 1998). Innovations adding value to a product,
process, or organization increases market share making the cost of an innovation quantifiable. Businesses spend resources on products that have potential benefits to the organization financially or increase commitment from the consumer (Gereffi et al., 2005; Ramirez, 1999; Stabell & Fjeldstad, 1998).

This section presents a review of defining value, value in the context of innovation, and innovation stakeholders. Researchers offer divergent meanings of value. A review of the literature lacks a consistent definition of value. Porter’s work popularized the term value chain analysis in the 1980s (as cited in Stabell & Fjeldstad, 1998). Porter (as cited in Stabell & Fjeldstad, 1998) believes value equals the amount that a consumer pays for a product or service (as cited in Ramirez, 1999). Other sources divide value into categories, including value to the consumer, the employee, and even the stakeholder (Hillman & Keim, 2001; Skarzynski & Gibson, 2008). Phillips and Phillips (2010) define value as monetary and non-monetary measures; however, other researchers determine value based on how products or services satisfy customers (Hillman & Keim, 2001; Phillips & Phillips, 2010; Ramirez, 1999; Skarzynski & Gibson, 2008). The perspective of value from the consumer determines successful outcomes. Without knowing to whom and in what way value occurs, an organization cannot measure value effectively (Hillman & Keim, 2001; Phillips & Phillips, 2010; Ramirez, 1999; Skarzynski & Gibson, 2008).

Value in the context of creativity and innovation yields various approaches. Kim and Mauborne (1999) explain how traditional organizations view business decisions based on conventional logic and that an organization utilizing value innovation logic creates a need, based on common consumer values. Value innovation provides consumers
with more of what they want and less of what they do not want. Virgin Atlantic, an international airline, utilizes an innovation logic approach to increase market share of business class consumers by providing the customer desired items. Virgin Atlantic’s approach includes reclining sleepers replacing seats throughout the plane and keeping ticket prices at a low cost while also offering free transportation to and from the airport (Kim & Mauborne, 1999).

Verloop (2004) divides the value of innovation into three domains: 1) the innovation domain; 2) the customer domain; 3) and the strategy domain. The three domains must overlap and align in order to achieve importance of innovation. Research reveals that concentrating on the value of innovation can propel a company from a follower in the industry to a high-growth profits company moving to the next level of innovation (Kim & Mauborne, 1999).

The final trend in value of innovation stems from the stakeholder. Organizations seek stakeholders to determine the value of products and services. Stakeholders include shareholders, management, customers, employees, and community. Assessing feedback from the stakeholder determines if a new idea will achieve success. A basic assessment administered to the stakeholder can reveal a strategic direction or road map on how to define success. The common stakeholders include the organization, employee, and customer (Hillman & Keim, 2001; Lin & Lin, 2006; Verloop, 2004).

The organization as a stakeholder determines the value of innovation. If a change fails to align with the current business model of an organization, the innovation will not add value to the organization or the customer (Silverstein, Samuel, & DeCarlo, 2009; Skarzynski & Gibson, 2008). For example, pharmaceutical manufacturers should
not develop rip-proof fabrics because a pharmaceutical manufacturer focuses on new
drugs, not fabric. From a strategic business perspective, the idea must align with the
original business strategy. Skarzynski & Gibson (2008) provide the example of
GameChanger instituted at Royal Dutch/Shell Company, the oil company.

GameChanger allows employees to share ideas for business improvements through an
online process. Employees submit new ideas online. The ideas must include new value to
the original business (Skarzynski & Gibson, 2008). The company invests time and
money in an employee’s idea relating to their strategic focus. When organizations
examine employee’s ideas, it illustrates employees as vital stakeholders.

Employees serve as key stakeholders in organizations. Lin and Lin (2006) study
the drivers and barriers to value creation among employees and consumers. Lin and Lin
(2006) confirm the findings of continually maintaining the importance of employee value
creation (Hillman & Keim, 2001). In contrast, Verloop (2004) does not include
employees playing a vital role in the value of innovations in the market. Employees
within an organization play a crucial role in customer perceptions of a product, therefore
helping to determine the value of the innovation (Verloop, 2004).

In addition to the organization and employees, the final stakeholder for innovation
includes the customer, which contributes to an essential element of financial reward. The
purchaser of the product holds the most value (Silverstein et al., 2009; Skarzynski &
value to the customer” (p. 6). Without the consumer buying the new and improved
product, research and development spent on innovation wastes time and money;
identifying the customer wants and needs plays a vital role in the development and
success of innovations (Silverstein et al., 2009).

In conclusion, the definition of value translates easily across various industries. Businesses help define value, the value of innovation, and the definition in the context of an organization. Value consists of financial, intangible, social, and environmental benefits (Silverstein et al., 2009; Skarzynski & Gibson, 2008; Verloop, 2004). Researchers help to establish the customer as the most important stakeholder in the discussion of value. Innovation lacks ability unless customer needs are satisfied. The next section explores how creativity and innovation function in the healthcare industry.

Innovations in Healthcare

Research demonstrates the importance of innovation in a knowledge economy and the value of innovation. The complexity of innovations existing in organizations requires more than employee adaptability (Malloch, 2010). The healthcare industry embraces change. Examples include pharmaceutical and biotechnology manufacturers producing life-altering innovative products (Burns, 2005). Innovations in healthcare provide patients improved and longer lives through technology, and advances in hospital models (Venkatesh, 2008).

The organizational model of a hospital represents one element of healthcare innovation. As noted by Crow and DeBourgh (2010), healthcare organizations (HCO) utilizing 20th century structures are not well-equipped for the complex and ever changing composition of today’s healthcare system. Christensen (2009) referred to the 20th century hospital system as a “solution shop”; a place where one can only receive a diagnosis for health (p. 75). HCOs wanting to add value to the community and stay productive and flexible in the business economy encourage innovative cultures, create
flattened organizational structures, and involve all healthcare professionals (doctors, nurses, administration) in patient care as part of a team providing the highest use of quality healthcare for patients at an affordable cost (Crow & DeBourgh, 2010). Two new hospital models of innovation include the evidence-based practice model (EBP) and the complex adaptive system model (Crow & DeBourgh, 2010; Melnyk, Fineout-Overholt, Stillwell, & Williamson, 2010).

To establish a hospital model of innovation, EBP accounts for developing quality patient outcomes with a standardized clinical decision making process (Melnyk et al., 2010). Unlike the solution shop noted by Christentensen (2009), the process of EBP involves more than a clinician providing a diagnosis. The EBP model provides healthcare professionals with evidence-based research encompassing patient preferences and clinical experience to develop innovative decision making for quality patient outcomes. The foundation of the EBP model involves the clinician, positive relationships, and interpretation of the patient needs (Melnyk et al., 2010).

The EBP design consists of seven steps, Step 0 - Step 6, beginning with fostering an atmosphere of asking questions and ending with communicating the results of the EBP. The model involves asking clinical questions like population, intervention, comparison, outcome, and time; a PICOT format. Melnyk et al. (2010) argue most of the answers to the clinical questions exist in medical textbooks and journals. However, the model thrives based on the confidence of the clinician regarding the clinical research, merging with the analytical synthesizing of the different variables from the patient, and the innovative decision-making process. The EBP model maintains clinical success and respect for the patient’s personal values. Using the EBP model requires healthcare
providers to think more innovatively during the clinical decision-making process. The model ensures that healthcare providers disseminate the outcomes of the EBP model, regardless if the results are favorable (Melnyk et al., 2010).

In contrast to the EBP hospital innovation model, Crow and DeBourgh (2010) present the complex adaptive system model. Where the EBP model focuses on a clinical decision-making procedure, the complex adaptive system model focuses on the organizational development process of the hospital. With the majority of hospitals operating under complex systems, the complex adaptive system model authenticates a course for contingency. Crow and DeBourgh (2010) contend complicated healthcare organizations (CHCO), whole systems shared governance (WSSG), and the diffusion of innovation (DOI) make up the complex adaptive healthcare organization (CAHCO).

Crow and DeBourgh (2010) report the CHCO organization aligns with an outdated 20th century management style. The method includes top-down leadership, physician superiority complex, and bureaucratic healthcare treatment. Implemented by nurses and doctors, healthcare treatment mandated for an injury receives influences from nontraditional methods. When adding the WSSG, the organization adds a decentralized and accountability-based system for all caregivers linked to the patient care process. The new model allows for the healthcare organization to share power among all clinicians serving as essential contributors to the patient care delivery. The final component of the complex adaptive system—the DOI—adds an adoption process of innovation that disseminates throughout the organization. With the collaboration of WSSG and DOI, Crow and DeBourgh (2010) suggest the system enhances the culture of the organization as a whole. Stakeholders join, based on content issues and not by department silos.
Encouraging innovative cultures in hospitals create the highest quality healthcare in organizations.

Hospitals remain necessary for society to function. Developing and adapting modern hospital styles remains necessary for hospitals to increase competitiveness. Providing quality healthcare to patients at an affordable cost translates into a competitive advantage (Christensen, 2009; Crow & DeBourgh, 2010; Melnyk et al., 2010). Adopting evidence-based practice in the diagnostics and treatment of care, and complex adaptive systems in the structure and culture of an organization, serve as new tools increasing healthcare innovation within the hospital setting.

Along with new hospital models of innovation, improved technologies exists as another innovation in healthcare (Venkatesh, 2008). Technology and healthcare remain synonymous with innovation. According to Venkatesh (2008), technologies in healthcare innovation are divided into three categories of diagnostic, treatment, and service.

One technology innovation in healthcare includes diagnostics. Fundamental in healthcare and technology, diagnostics enhances the process of treating patients. Websites expand access to information for patients and doctors researching symptoms. Patients can utilize online self-diagnosis tools. Although self-diagnosis does not establish answers for long-term treatment by having access to healthcare information, the patient can determine the necessity of an additional appointment with a doctor for further medical evaluation. Biomedical equipment like X-ray, computer tomography scan (CT scan), and ultrasound machines serve as invaluable tools when a doctor diagnoses a patient. Doctors now consider telecommunications, cell phones, and computers as prevalent healthcare innovations. Utilizing a cell phone or emailing a colleague connects
clinicians as they check diagnoses, resulting in effective collaborative efforts in the healthcare community (Venkatesh, 2008).

The second aspect in healthcare technology innovation provides advanced treatments for patients. Patients and physicians expect quality treatments. Quality of life and life span increases as a result of technologically advanced treatments (Burns, 2005). The pacemaker, a general medical device used in extending the life span of patients with heart conditions, began as a treatment innovation in healthcare (Venkatesh, 2008). Hospitals are enthusiastic users of technology innovation in the healthcare setting. Technology innovation relates to 20 to 40% of the cost of doing business in healthcare (Burns, 2005). When admitted to an Intensive Care Unit, patients are connected to technological devices. For example, blood pressure monitors and heart beat monitors assess a patient’s treatment and condition. Dialysis patients routinely use medical devices to increase the benefits of treatments. Treatment innovations help clinicians avoid human errors and provide quality patient care with positive outcomes (Venkatesh, 2008).

Along with diagnostics and treatments, technology innovation in healthcare provides innovative approaches used by administration and clinicians through customer service marketing. For example, a doctor’s office utilizes technology for the purpose of advertising products and services as a common marketing practice. With the evolution of the Internet, most doctors’ offices disseminate information from websites set-up for patients. The sites, if used correctly, afford the advertising representative vital information. The advertising representative can track users of the site, determine the time spent on different pages, and determine frequency of pages viewed. Healthcare
innovation using technology, builds marketing campaigns and targets services to consumers (Venkatesh, 2008).

Another side of service technology innovation addresses direct patient care. For example, the staff of the Nottingham City Council utilizes technology for dementia patients. A large number of patients misplace clothing items. The hospital developed an electronic button that can be hidden inside of the resident's clothing to identify the name, unit, and room number of the patient while maintaining the dignity of the patient. The innovation provides patients with a peace of mind when becoming confused or distressed about losing a piece of clothing. In another example, the staff of Musgrove Park Hospital, Taunton, and Somerset NHS Foundation Trust also use technology healthcare innovations. The employees developed an interactive electronic board for surgery schedules and information. On the board resides a list of patients waiting for surgery, including age, operation details, and wait times. At any time, an authorized person can add, adjust, or make changes to the list. The list can be viewed from different computers within the unit. The technology innovation assigns and analyzes the list and sorts the patients by time, operation, or surgery room. The innovations used for direct patient care add value to the patient’s experience (Fairbank, 2009).

Along with hospital model innovation and technology innovation, medical advances represent a variety of healthcare innovations. Without medical advances through medicines and therapies, life spans would not increase. Pharmaceuticals and biotechnology serve as principal sectors within medical advances in healthcare.

Pharmaceuticals, a category of medical advances, revolutionizes the way doctors and hospitals provide care. Between 1995 and 2002, spending in the pharmaceutical
industry doubled (Christensen, 2009). According to Burns (2005), “In 2003, the worldwide pharmaceutical sector was just shy of one-half trillion dollars in size” (p. 29). The business model for a pharmaceutical company entails high risk, multiple stakeholders, extensive development time, and trials. However, drug production remains central to modern healthcare. Natural herb treatments commonly used for healing a century ago are replaced with today’s prescription usage which prevails with drugs more powerful than herbs and with fewer side effects. The value in pharmaceutical innovations to the consumer includes potential for longevity of life and management of diseases (Burns, 2005).

In addition to pharmaceuticals, biotechnology serves as a medical improvement in healthcare innovation. Biotechnology began thirty years ago, based on deoxyribonucleic acid (DNA) research (Burns, 2005). Today, biotechnology includes “entrepreneurial companies using innovative technology in the research or development of medical therapeutics, diagnostics, research tools…” (p. 109). The biotechnology industry developed 196 products as of 2003 remaining young compared to other industry sectors. Examples of products produced in the biotechnology sector include drugs used for multiple sclerosis and anemia; both utilizing DNA technology (Burns, 2005).

The current literature illustrates how innovation in healthcare strengthens quality and longevity of life for many patients. Both pharmaceuticals and biotechnology are sectors increasingly utilizing innovations in healthcare through medical advances. With current biotechnology-pharmaceutical business alliances, innovation in healthcare reaches new levels (Burns, 2005). With healthcare innovation, hospital model innovation, technology innovation, and innovative medical advances, innovation in
healthcare establishes a marked improvement in quality of care. Another form of health innovation resides in a culture of innovation leadership. Leaders of innovation ensure enhancements for the entire organization (Porter-O’Grady & Malloch, 2009). Without a culture of innovation leadership, hospital models, healthcare technology, and medical advances lack efficiency or effectiveness. Healthcare leaders must support fresh and innovative ways of conducting business while also providing the highest patient care quality (Malloch, 2010; Porter-O’Grady & Malloch, 2009; Porter-O’Grady, 2010).

Culture of Innovation Leadership

The U.S. recently developed an Office of Innovation and Entrepreneurship within the Department of Commerce [DOC] (DOC, 2009). New business demands create an immediate need for organizations to compete in the global economy. With innovation needed across all industries and all parts of the world, a business culture that allows employees imagination’s to expand the exploration of new ideas fosters a culture of innovation leadership (Malloch, 2010). A culture of innovation leadership is defined as “the process of creating the context for innovation to occur; creating and implementing the roles, decision-making structures, physical space, partnerships, networks, and equipment that support innovative thinking and testing” (Malloch, 2010, p. 41). The literature consistently highlights the need for businesses to embrace a culture of innovation leadership for economic survival (Basadur, 1997; Florida & Goodnight, 2005). Many organizations lack the ability to move at the speed of change occurring in the current global economy (Basadur, 1997; Driver, 2001; Task Force on the Future of American Innovation [TFFAI], 2006). To achieve commercial success, leaders have a responsibility to train employees on the advantages of flexibility and adaptability (Driver,
Organizations require leaders to manage innovation and employees to provide intuitive thinking (Basadur, 1997; Florida & Goodnight, 2005; Grigorenko & Sternberg, 2001). Exploration helps to create a workforce that embodies adaptive functioning and contributes to economic success (Driver, 2001; Grigorenko & Sternberg, 2001).

The foundation of a culture of innovation leadership begins with an in-depth understanding of creativity. Controversy exists over the distinction between creativity and innovation. Basadur (1997) does not distinguish between the words creativity and innovation. He supports similar meanings and uses the terms interchangeably. Amabile, et al. (1996) defines creativity “as the production of novel and useful ideas in any domain” (p. 1155). Creativity is also defined as the act of generating ideas (Amabile et al., 1996). Creative action happens during the first part of the innovative process called idea generation (Scott & Bruce, 1994; Unsworth et al., 2005; West, 2002). A person or group determines the need for improvement, and then solves the problem using divergent thinking skills (Hunter, Bedell, & Mumford, 2007). Creativity serves as an essential component of innovation, a basic foundational step in the development of innovative ideas (Amabile et al., 1996; Silverstein et al. 2009). Innovation remains the success of the implementation of creative ideas within an organization (Amabile et al., 1996; Scott & Bruce, 1994; West, 2002). Without creativity, innovation would not exist. Silverstein et al. (2009) refers to creativity as the discovery part of the D4 Road Map model, which includes the steps (1) define, (2) discover, (3) develop, and (4) demonstrate. The discovery phase of the model builds on idea generation in which useful ideas develop. Models like the D4 Road Map and human intelligence theories provide a basis for understanding the importance of innovation from within the context of creativity.
A culture of innovation leadership inspires organizations to move towards a new way of doing business. Researchers note the key role creativity plays in innovation (Amabile et al., 1996). A recent study of 1,500 CEOs from 60 countries and 33 industries reveals creativity as the skill set for future success in the new global economy (Bronson & Merryman, 2010; Carr, 2010). Rafjou states that CEOs understand the need to foster creativity in organizations in order to tap into employees’ knowledge (IBM, 2011). Businesses today require a different leadership approach than in the last couple of decades. CEOs must continuously motivate and engage employees (IBM, 2010). Porter-O’Grady and Malloch (2009) state a culture of innovation leadership uses creativity to solve problems by leveraging innovation competencies. A culture of innovation leadership comprises fostering and managing an innovative culture and embracing the human capital of every employee, while tapping into human intellect (Amabile et al., 1996; Anderson & West, 1998; Grigorenko & Sternberg, 2001; Malloch, 2010; Porter-O’Grady & Malloch, 2009; Sternberg et al. 1996).

In developing a culture of prepared healthcare leaders, an organization must strengthen competencies in the culture. According to Malloch (2010), a culture of innovation leadership in healthcare includes nine competencies. Based on the findings of a community task force, the nine competencies address a lack of nursing graduates in Arizona State University’s leadership master’s program. Experienced leaders utilized an inductive process to determine innovation leadership in healthcare competencies and based on the competencies developed an innovative degree program to meet the needs of future healthcare systems (K. Malloch, personal communication, February 17, 2011). The majority of the nine competencies are based on business principles and transcend
into other industries (Amabile et al., 1996; Anderson & West, 1998). The competencies include 1) self-knowledge and competence, 2) synthesis, 3) formulation, 4) collaboration, 5) managing knowledge, 6) coaching, 7) essence of innovation, and 8) innovation knowledge (Malloch, 2010).

Self-knowledge and competence, synthesis, and formulation comprise three competencies within a culture of innovation leadership. Together, these three competencies support problem-solving intelligence or intuitive thinking of the workforce. Surel (2010) communicates the necessity of intuitive leaders in an organization and the importance of using their own thoughts, knowledge, and experiences to promote healthcare into the future. Christensen (2009) and Surel (2010) agree that utilizing self-knowledge, competence, synthesis, and formulation is essential while developing diagnoses for patients. Christensen (2009) calls the application of the concepts intuitive medicine. Intuition involves using the human intellect. Applied the same way as intuitive thinking, intuitive medicine manages the diagnostic part of healthcare (Christensen, 2009; Surel, 2010).

The Triarchic Theory of Human Intelligence supports problem-solving intellect competencies identified by Malloch (2010). The Triarchic Theory of Human Intelligence consists of three components—synthetic, analytic, and practical. The components work in the creative process to find the best solution. Sternberg (1988, 1999) suggests that the synthetic role of intelligence requires the user to develop high-quality ideas related to a creative opportunity. The more one analyzes ideas, the better the result. According to Sternberg (1988, 1999), apathy towards using the first solution that comes to mind to resolve an issue shows a disinterest in finding the best solution. Repeated scrutiny of the
idea leads to a breakdown of the idea, which results in a solution nearer to the root of the problem.

The analytic function of Stenberg’s Triarchic Theory indicates the basics of problem solving (Sternberg, 1988, 1999; Sternberg & Lubart, 1995). The first element of the analytic element includes the ability to understand the importance of one’s ideas. Questions one might ask include, does the idea have value and are there any weaknesses?

The second component includes a decision as to whether the idea constitutes pursuit (Sternberg & Lubart, 1995). An example of Triarchic Theory illustrates a young man in graduate school, having everything going for him in academia with an endless supply of useful ideas. However, he could not decide which ideas were worth pursuing. The graduate student showed considerable efforts in synthetic ability, but his analytic ability remained scarce.

The final stage of the Triarchic Theory of Human Intelligence includes a practical component, which translates into making the best ideas work and encompasses garnering support from other people. Many of the most innovative ideas clash with societal norms. Securing stakeholders to accept the idea introduces an important attribute. Persuading others by highlighting the importance and benefits of an idea helps to achieve constructive criticism (Sternberg, 1988, 1999; Sternberg & Lubart, 1995).

The triarchic theory of successful intelligence led to the development of the Sternberg Triarchic Abilities Test (STAT) (Grigorenko & Sternberg, 2001). STAT assesses the synthetic, analytical, and practical intelligence of how well participants adapt to surroundings (Sternberg, 2006; Grigorenko & Sternberg, 2001). The instrument utilizes multiple ways to determine the three separate abilities. Grigorenko and Sternberg
(2001) administered the STAT to men and women from a Russian city to determine intelligence relating to real-world application. The self-reported instrument was also administered to college students by Sternberg in 2006 in the formulation of enhancing the predictability of academic success by participants. The STAT supports themes emerging from the current literature review like utilizing self-knowledge, competence, synthesis, and formulation.

Malloch (2010) identifies additional culture of innovation leadership competencies supporting innovation management which include collaboration, managing knowledge, and coaching. Collaboration with partnerships and networks resembles selecting high performing teams and team encouragement. Anderson and West (1998) measures and validates team innovation and recognizes the importance of the climate of the team. In 1990, West (2002) developed a tool called the Team Climate Inventory (TCI), in which four elements occur in team innovation. The first characteristic identifies the group as having clarity and living the vision. Secondly, the group encourages an environment to openly discuss and share new ideas. The third climate factor enlists the accountability of the quality of the task within the individual and team. Finally, “expectation, approval and practical support of attempts to introduce new and improved ways of doing things” represents the last characteristic (Mathisen et al., 2008, p. 14). The widely-used model grounds group climate innovation. Anderson and West (1998) specifically validate the measure of TCI assessment with group climate innovation as well as provide a framework to guide organizations for other team climate applications (Anderson & West, 1998; Mathisen, Martinsen, & Einarsen, 2008). Along with teams
collaborating, team/peer encouragement focuses on another culture of innovation leadership competency.

A complementary idea to collaboration involves team/peer encouragement within an organization and the knowledge that partnerships and networks remain essential in developing innovation leaders. Using creative team sessions allows everyone the option to expand problem-solving ideas or improve systematic processes as a group (Scott & Bruce, 1994; West, 2002). For a team to think creatively, expressing opinions without fear of repercussion remains fundamentally important. In addition, a diversity of backgrounds and expertise enhances the creative process (Amabile, 1998; Scott & Bruce, 1994). The manager who creates the team ensures the creative teams’ functionality (Amabile, 1998; West, 2002).

Another innovation management competency includes managing knowledge. A requirement for employees to record creativity supports the managing knowledge competency (Unsworth et al., 2005). Recording creativity of an employee requires an organization to develop a creative requirement. Creative requirements are defined as “the perception that one is expected, or needs, to generate work-related ideas” (Unsworth et al., 2005, p. 542). In order to foster a creative culture, creativity serves as a part of a job requirement, thus helping to manage the process and outcomes (Unsworth et al., 2005). Hunter et al. (2002) conclude that a challenging job, reward structure, and motivations remain critical to foster a creative culture. Unsworth et al. (2005) state that an employee remains a significant factor, and indicates that the simple act of including a creative requirement in a job description engages employees to develop creativity. Similarly, Birdi’s (2007) research uncovers action plans as a way to increase creativity. Including
creativity as a point of discussion on an annual review or detailing the task in a job description serves as an example. Another example entails professional development training on the subject of creativity (Unsworth et al., 2005). Shalley (1991) suggests when an employee’s given specific goals or specific instructions to generate creative ideas, creative outputs increase. The goal reinforces the importance of organizational goals for the employee and forces individuals to focus on the task at hand.

In addition to the managing knowledge competency, coaching promotes a culture of innovation leadership. During the creative process, supervisory encouragement remains vital long before product development (Amabile, 1998). Several studies examine how leadership coaching influences a creative environment. Carmeli, Choen-Meitar, and Elizur (2007) study the effects of organizational identification, and how leadership can produce positive creative actions from staff. The study results determine that managers play a pivotal role in how employees view the company. When a positive leadership impression occurs, the possibility of producing creative behavior among employees increases (Carmeli et al., 2007). A study by Birdi (2007) confirms creative training alone does not provide an abundance of creative thought. Birdi’s research establishes support from management as the greatest predictor of a healthy, creative environment. In contrast, Unsworth et al. (2005), confirm “support for innovation” (p. 554) by the organization does not predict a creative environment, although an immediate supervisor’s attitude toward supporting creativity helps to predict creativity outcomes from employees. Unsworth et al. (2005) contradicts the idea by stating that organizations do not support innovative thinking. The immediate superior supports innovative thinking if he or she accesses resources and remains flexible. Collaboration, managing
knowledge, and coaching remain innovation management competencies supported by the leader–member exchange theory (LMX) theory.

The LMX supports innovation management. Basadur (1997) asserts that senior management must advocate the development of a creative culture. Dansereau et al (1975) indicate the importance of leadership exchanges as the Vertical Dyad Linkage Theory, also known as LMX Theory. The theory includes the process of linking employees to managers by influencing behaviors through interpersonal exchanges within the relationship (Dansereau et al., 1975; Deluga, 1998; Scott & Bruce, 1994).

Scott and Bruce (1994) indicate the LMX directly links the relationship between the employee and the supervisor; a correlation exists between supervisor support and innovative outcomes of the subordinate. The relationship between a manager and an employee demonstrates low-quality LMX when no freedom exists. However, when the manager provides the employee autonomy, and genuinely maintains a positive relationship, the LMX quality remains strong. Scott and Bruce (1994) also report a link with high-quality LMX and the culture of the organization. Scott and Bruce’s (1994) research suggests when a manager supports and advocates creativity and innovation, the employee feels the same way. In contrast, Unsworth et al. (2005) find leadership support for innovation lacks a role in creativity in the workplace, but supports the implementation of a creative job requirement for employees as a predictor of creativity.

Amabile et al. (1996) investigate a culture of innovation with employee autonomy. In a study assessing the work environment for creativity, the level of flexibility managers give to employees serve as a division of one of three components in Amabile’s model of creativity and innovation in organizations. The model emerges as
groundwork for KEYS, an assessment tool that helps quantify the work environment in establishing a culture of innovation and assessing the organizational influences on creativity. The KEYS scale intends to “assess perceptions of all of the work environment dimensions that have been suggested as important in empirical research and theory on creativity in organizations” (Amabile et al., 1996, p. 1155). At the time of the 1996 publication, the KEYS Scale fourth edition included 78 items gauging employees’ perceptions of the work environment and work performance of creativity and productivity. The research of Amabile and colleague’s reveals a difference in the amount of creativity existing in the organization depending on certain factors in an organization’s environment. Empowerment classifies as one of the factors. Some researchers agree that creativity fosters when individuals and teams have relatively high autonomy in the daily work environment and a sense of ownership and control over their own work and their own ideas (Amabile et al., 1996).

According to Malloch (2010), an organizational framework of innovation finalizes the last two competencies for a culture of innovation leadership by including essence of innovation and innovation knowledge. An organizational framework of innovation provides the framework for innovation that affords employees the ability to understand how innovation can help the organization and experience the process of innovation. Giving employees independence allows individuals the time to focus on developing ideas and process actions. Creative output increases as employee empowerment increases (Shalley, 1991). One way to create the organizational framework of innovation involves managing the essence of innovation by developing an infrastructure in the organization to efficiently manage organizational adaptability.
allowing for efficiency and flexibility of the innovation process to occur (Basadur, 1997). A challenge for organizations results from the lack of flexibility to change (Georgsdottir & Getz, 2004). Innovation productivity increases when the organization experiences adaptability (Georgsdottir & Getz, 2004). Malloch (2010) explains that the importance of producing effective innovation today results from the sudden economic changes developing within organizational structures. An example of an effective organizational framework of innovation illustrates by the work of SAS Institute (SAS).

SAS, an independent software company, appeared as number twenty on Fortune’s Annual List of 100 Best Companies to Work For (Florida & Goodnight, 2005). A high-performance organization, SAS fosters creativity and harnesses innovation. Management’s attitude of responsibility to satisfy employees builds around the culture of the organization. SAS recognizes that “95 percent of its assets drive out the front gate every evening” (p. 127). The mindset of SAS demonstrates an organization focused on compassion and accountability (Florida & Goodnight, 2005). Researchers support innovative climates in organizations by developing a climate focused scales.

Several strategies put into place at SAS enrich the work–life balance of the staff and help to manage innovation. As a convenience to employees, healthcare facilities located on-site help new mothers back to work in a timely manner after childbirth by paying two-thirds of the cost of day care (Florida & Goodnight, 2005). Other innovative practices include meetings prompted by staff or management as needed, instead of the sometimes unwarranted routine meetings in the workplace. In addition, flexibility of work schedules increase creativity, and workdays cease after eight hours to give the body and mind time for reenergizing. However, the most valued trait SAS managers acquire
includes earning the respect of employees. All managers maintain a degree of front-line work. A manager who served as a computer programmer prior to becoming a leader in the organization continues to keep skills sharp by programming a set number of hours per week as part of current job duties. SAS openly expects and reinforces a *walk-a-mile in your shoes* philosophy. A culture that recognizes the insights of creative employees sustains a refreshing change from standard results. SAS unlocks essential keys to managing creativity in an organization. With global competition rising, SAS enjoys an advantage by employing a more employee-focused leadership style (Florida & Goodnight, 2005).

Organizational climate and physical space contribute to an organizational framework of innovation. A study by Crespell and Hansen (2008) focus on key developments to manage creativity and innovation in the workplace. The research results validate a connection between work climate and innovativeness. The study utilizes a U.S. wood products company employing 100 people. The organization’s industry reflects an unconventional image of innovation; however, the example illustrates the need to manifest a culture of creativity and innovation within any industry. The researchers use both quantitative and qualitative methods with 70% of the employees responding to a 73-question survey and seven participants responding to open-ended questions during interviews. Several scales were modified in the study to measure various aspects of a culture’s creativeness. The scale assesses climate innovation based on the KEYS Scale by Amabile et al. (1996). Crespell & Hansen (2008) confirm organizational climate for innovation consists of six necessary factors. The factors include autonomy, openness to innovation, challenge, resources, supervisor encouragement, and team cohesion. With a
response rate of 15.1%, the study did not statistically validate the claims but researchers demonstrate insight into how to support and leverage an organization to achieve a higher level of innovativeness.

Organizational climate remains a staple within the work of The Siegel Scale of Support for Innovation (SSSI). Both The KEYS Scale and SSSI, reveal climate dimensions associated with innovation support in organizations (Amabile et al., 1996; Siegel & Kaemmerer, 1978). As potential research in assessing innovation support, Siegel and Kaemmerer (1978) describe the need to review similar organizations and compare and contrast an innovative culture and a non-innovative culture in various industries. Amabile et al. (1996) contends future research should explore blending the KEYS Scale in conjunction with other programs and varied industries.

The final competency of a culture of innovation leadership includes innovation knowledge. Malloch (2010) defines innovation knowledge as the ability to strategically understand innovation and the process within the organization. Researchers conclude the quality of innovation results from developing and refining tools and processes within an organization; new training and development establishes the flexibility needed to improve innovative techniques (Silverstein et al., 2009; Skarzynski & Gibson, 2008). Corporate innovation requires employees to understand the process to affect performance (Skarzynski & Gibson, 2008). When harnessed correctly employees abandon old habits and the human capital of the workforce drives change (Puccio, Murdock, & Mance, 2007). The intrinsic motivational theory helps to drive change made within the organizational framework of innovation.
The intrinsic motivational theory supports a culture of innovation leadership competency, essence of innovation, and innovation knowledge. Intrinsic motivation can assist organizations in the challenge to encourage employee empowerment within a job function (Deci, 1971; Thomas, 2002). Researchers continue to study and explore the theory often published in creativity and innovation journals (Amabile et al., 1996). A trend of intrinsic rewards rather than extrinsic rewards emerges in the literature. Researchers define intrinsic motivation as completing a task for the complete internal pleasure of performing the task (Deci, 1971; Thomas, 2002). In the business setting, engagement keeps employees personally challenged and stimulated (Sternberg, 1999). Intrinsic motivation develops from inside oneself. The ability to help others in need by making a difference stimulates the primary principle of intrinsic motivation in the workplace (Sternberg, 1999; Thomas, 2002).

Nurses and doctors enter the healthcare field to help people which serves as a great example of intrinsic motivation (Stubblefield, 2005). High salaries and commissions serve as conventional techniques to motivate employees (Thomas, 2002). Detailed procedures and a hierarchical organizational structure represent antiquated business models. Today’s current business model streamlines organizational structures to maintain a culture fluid with ideas. Thomas (2002) states intrinsic motivation and purposeful jobs require an increase in intellectual capital.

Thomas (2002) merges two widely-known intrinsic motivation models and creates one that encompasses new attributes. Deci (1971) publishes the intrinsic motivation model in the early 1970s for use primarily in education areas. The study notes the power of choice an employee has in a workplace situation creates an impact on the
work output (Thomas, 2002). For instance, Thomas reports positive outcomes when the subject was able to choose what job task to perform. In the 1980s, Hackman and Oldham (as cited in Thomas, 2002) develop a model commonly used within organizations showing a job directly correlates to the state of employee satisfaction.

Thomas (2002) expands existing intrinsic motivation models to include the impression of advancement, importance, and exclusive discretion. The study reports all jobs have a purpose beyond receiving a paycheck. The self-management process used to enhance intrinsic motivation in the workplace incorporates a series of steps. The steps include establishing the purpose, letting employees choose work tasks, giving the employee the capacity to perform the task, trusting employees with ownership in the quality of tasks, and trusting employees with completion of the task. To strengthen the self-management process, Thomas explores feedback from the data and concludes the importance given to an evaluation after task completion. Positive feedback empowers employees. However, negative feedback leads the process to a new learning analysis requiring a deeper look into the opportunity and making it successful. Human capital establishes a higher value for human resources. The learning process must empower the entire organization to promote the freedom to think within a culture (Thomas, 2002). The following example of a hospital encouraging a culture of innovation leadership describes the intrinsic motivation model.

An example of a healthcare organization practicing a culture of innovation leadership includes Baptist Health Care (BHC). Stubblefield, the Chief Operating Officer (CEO) of BHC in Pensacola, Florida has worked for BHC for over twenty-five years. The characteristics of a culture of innovation leadership include knowledge and
competence, managing knowledge, coaching, and essence of innovation. Having an uninspired workforce in 1995, the hospital reached an all-time low patient satisfaction score ranking in the 18th percentile. In a location with fierce competition, Stubblefield introduced drastic changes to the organization in order for the organization to remain viable. The changes include organizational and process innovations, not incremental changes (Stubblefield, 2005). The degree of changes represented radical changes within the organization; the changes added substantial value to patients and families of patients (HBR, 2003; Silverstein et al., 2009; Stubblefield, 2005). The impact of the new processes empowered employees to develop a culture of “WOW!” (Stubblefiled, 2005, p. xiv). As Stubblefield (2005) explains, WOW! acts as an acronym for “empowering our Workers to become Owners and Winners. That is our secret” (p. xiv). Stubblefield (2005) permits employees to take charge with new innovation competencies and intuitive thinking with a web-based system called Bright Ideas. Employees receive training and support on how to create a culture of innovation leadership. A radical approach from the traditional way of doing business, Stubblefield started the BHC transformation with front-line employees. Stubblefield knew that, in order to make change stick, everyone in the organization needed to support quality care for patients (Stubblefield, 2005).

Along with BHC, Studer (2003) of the Studer Group®, fosters a culture of innovation leadership qualities in healthcare organizations. The Studer Group® consulting agency specifically works with healthcare organizations to assist clients in providing service and operational excellence for the entire culture of the organization. The foundation of Studer’s process models derives from the foundations of American Airlines (C. Deao, personal communication, February 11, 2011). Studer (2003) perfected
process and tools to teach healthcare leaders across the country a systematic approach to create a culture of innovation leadership. Studer (2003) set out to create a culture of “fire starters” (p. 1); a fire starter keeps the flame burning in ancient civilizations. Fire starters serve in essential roles in the community because if not completed the community suffers. Along with implementing processes and procedures, Studer’s goal for clients involves increasing the hospital’s patient and employee satisfaction scores. Although referred to by different names, Studer includes culture of innovation leadership competencies to gain desired results from the workforce.

Processes illustrated by Stubblefield (2005) and Studer (2003) identify essential management concepts for leaders in the healthcare industry. Utilizing human capital, motivation, and social network concepts are a different approach to traditional training of healthcare leaders (Spaulding, Gamm, & Griffith, 2010). While reimbursement, quality, and safety improvement are important in the healthcare industry, little attention focuses on a human resources aspect of healthcare organizations (Spaulding et al., 2010; Stubblefield, 2005). The processes noted illustrate culture of innovation leadership competencies and the influence in the healthcare industry. Continuous examination of these concepts can potentially impact the healthcare organization.

Summary

The literature review provides information on creativity and innovation in the workplace. The knowledge economy serves as the foundation in which to build the workforce skill set to include innovation tools. With today’s global economy, a focus on the human capital of a workforce remains the foundation for a competitive advantage in an organization. Building on the value of innovation in a business culture provides
stakeholders with the necessary strategies to ensure success from new products and processes. Healthcare innovation demonstrates the affects innovation has on patient outcomes. Finally, a culture of innovation leadership shows a necessary need to leverage success from employees’ intellect, a leader’s role in managing innovation, and the necessary framework that innovation provides within an organization.

The current study builds on literature regarding creativity and innovation. The literature review proposes nine culture of innovation leadership competencies creating a culture of innovation leadership: self-knowledge and competence, synthesis, formulation, collaboration, managing knowledge, coaching, essence of innovation and innovation knowledge (Malloch, 2010). The research builds on literature regarding creativity and innovation from the work of Grigorenko and Sternberg (2001), Sternberg et al. (1996), Anderson and West (1998), and Amabile et al. (1996). The theoretical framework of the study includes triarchic theory (Sternberg, 1988, 1999; Sternberg & Lubart, 1995), leader member exchange theory (Dansereau et al., 1975; Scott & Bruce, 1994), and intrinsic motivation theory (Deci, 1971; Thomas, 2002). The basis for the study emerges from previous research by Amabile et al. (1996), Anderson and West (1998), Grigorenko and Sternberg (2001), Malloch (2010), and Sternberg et al. (1996) which repeats the importance of a culture of innovation leadership in organizations. Fostering and embracing the human capital of the workforce through innovation offers the healthcare industry new approaches to remain flexible and adaptable in today’s competitive marketplace. Comparing the employee’s perception of a culture of innovation leadership to extreme readmission rates of heart attack and heart failure patients in a hospital setting may reveal a correlation between the two groups. Stated foundational theories and
knowledge of management techniques, aid hospitals with higher readmission rates support the quest for innovative strategies to support low readmission rates.
CHAPTER III
METHODOLOGY

This chapter describes the research design and methodology used to study a culture of innovation leadership and its impact on human capital development in a healthcare setting. The chapter defines the population, the research variables and presents the research instrument. A discussion of the data collection and analysis is also included.

According to the U.S. Department of Health and Human Services, national rates for readmissions in heart attack and heart failure are measured and reported as better or worse than U.S. national readmission rates. The study addresses the following research objectives:

Research Objective 1: Determine if there is a difference in a culture of innovation leadership between high readmission rate hospitals and low readmission rate hospitals.

Research Objective 2: Determine if there is a difference in problem-solving intelligence between high readmission rate hospitals and low readmission rate hospitals.

Research Objective 3: Determine if there is a difference in innovation management between high readmission rate hospitals and low readmission rate hospitals.

Research Objective 4: Determine if there is a difference in an organizational framework of innovation between high readmission rate hospitals and low readmission rate hospitals.
Research Design

To determine if there is a perceived difference of a culture of innovation leadership between two groups of hospitals, the researcher utilized the nine competencies based on the work of Malloch (2010). This cross-sectional study used one survey to look at one point in time (Agresti & Finlay, 1997; FBO, 2011; Gall, Gall, & Borg, 2005), and addressed four research objectives. A self-administered survey delivered paper-based or online was utilized. The survey design provided an economical method of collecting data and a rapid turnaround time for data collection (Dillman, et al., 2000). The study compared two groups in order to assess a culture of innovation leadership between hospitals with higher than U.S. national rates in readmissions of heart attack and heart failure and hospitals with lower than U.S. national rates in readmissions of heart attack and heart failure. The next paragraph addresses the criteria for including specific hospital groups in the study.

The study specifically compared the difference between a culture of innovation leadership rankings of two groups: hospitals with better than U.S. national rates in readmissions of heart attack and heart failure and hospitals with worse than U.S. national rates in readmissions of heart attack and heart failure as measured by the U.S. Department of Health and Human Services. The decision to use the measures of readmission rates of heart attack and heart failure patients results from a review of mandated laws imposed on healthcare organizations by the U.S. government (AHA, 2010; Health Reform, 2010).

The research objectives evolved from nine culture of innovation leadership competencies. The competencies include self-knowledge and competence, synthesis,
formulation, collaboration, managing knowledge, coaching, essence of innovation, and innovation knowledge (Malloch, 2010). The competencies group into three main categories, problem-solving intelligence, innovation management, and organizational framework for innovation. Table 1 explains the relationship of each competency to the categories. These competencies relate to the two groups in the following ways. Based on the work of Malloch, a hospital with a high culture of innovation leadership is likely to have lower readmission rates and a hospital with a low culture of innovation leadership is likely to have higher readmission rates.

Population

In order to accomplish the goals of this study, a population of hospital employees was utilized. The researcher identified the population through the data.medicare.gov website. The website collects and provides publicly reported quality measures on various aspects of healthcare organizations (e.g., patient experiences, charges, inspections, and readmission rates). For the current study, the researcher reviewed reports on the website for readmission rates of hospitals for heart attack and heart failure, which covered all hospitals in the U.S. The researcher reviewed each hospital in the report to determine if a hospital met specific criteria for inclusion in the study. The study compared two different groups: (a) those with better rates than the U.S. national rate in readmission for heart attack and heart failure and (b) those with worse rates than the U.S. national rate in readmission for heart attack and heart failure.

To understand healthcare professional’s perspectives on the quality of care for patients, inclusion of multiple stakeholders of an organization were required for this study. By gathering data from key stakeholders (Amabile et al., 1996), the researcher
was able to gain a more complete understanding of an organization’s culture of innovation leadership. The ideal population for the present study would include management, doctors, nurses, and support staff of hospitals. However, in preliminary discussions with senior leaders at hospitals, concerns regarding “survey fatigue” and lost time on the job associated with surveying the entire organization led the researcher to limit survey participants to one cardiac related department which included people who worked directly with heart attack and heart failure patients as a more feasible plan for survey distribution (W. Bussell, personal communication, June 9, 2011; R. Hytoff, personal communication, June 8, 2011; S. Kolseth, personal communication, June 9, 2011; J Odorizzi, personal communication, June 9, 2011; V. Orr, personal communication, June 13, 2011).

The U.S. reports 5,795 hospitals in existence today (Table 3) (AHA, 2010). Resources limit inclusion of all hospitals in the current study. A total of 4,499 hospitals report readmission rate data on the data.medicare.gov website. The hospital population narrowed considerably once the designation of better than U.S. national rate and worse than U.S. national rate for hospital readmission rates were applied. The U.S. Department of Health and Human Services (HHS) addresses the statistical rigor of the calculations for the readmission rates on data.medicare.gov, the national database of publicly reported hospital measures (HHS, 2011). Nationally, interval estimates representing the upper and lower limit of readmission rates (better and worse than national rates measured by U.S. Department of Health and Human Services) are determined for each hospital. Interval estimates are determined by estimates of adjusted readmission rates from a hospital’s 30-day risk standardized readmission rates. Each hospital’s interval estimate is compared to
the national readmission rate. If a hospital’s interval estimate overlaps with the national rate, the performance is categorized as *no different than U.S. national rate*. However, if the entire estimate falls above or below the stated national rate, the hospital’s performance rate is categorized as “better than U.S. national rate” or “worse than U.S. national rate” (HHS, 2011). The “better and worse” groups indicate the upper and lower interval estimates.

The hospitals chosen for participation meet the criteria for *better* than U.S. national rates in readmissions of heart attack and heart failure and *worse* than U.S. national rates in readmissions of heart attack and heart failure. The Patient Protection and Affordable Care Act specifically focuses on the *worse* U.S. national rates for readmission in heart attack, heart failure, and pneumonia. The researcher omitted pneumonia data due to industry leader feedback associated with financial and time constraints associated with distribution of the survey (W. Bussell, personal communication, June 9, 2011; R. Hytoff, personal communication, June 8, 2011; S. Kolseth, personal communication, June 9, 2011; J Odorizzi, personal communication, June 9, 2011; V. Orr, personal communication, June 13, 2011). The number of hospitals demonstrating *better* than U.S. national rates in readmissions of heart attack and heart failure is 258, and the number of hospitals demonstrating *worse* than U.S. national rates in readmissions of heart attack and heart failure is 174. Therefore, by combining the two groups, a total of 432 hospitals were invited to ask employees to participate in the survey for the present study. The population of the present study focused only on departments related to heart attack and heart failure with clinical staff which *actively worked* with heart attack and heart failure patients. This allowed the survey to be distributed to a limited and more specialized
group of employees. The target survey participants included clinical staff *actively working* with heart attack and heart failure patients, where such clinical care made up more than 50% of their job responsibilities. Figure 2 depicts the criteria for selecting the population for the study.

![Criteria for Selecting Population](image)

*Figure 2.* The criteria for selecting the population.

**Survey Instrument**

The researcher designed a 36-question self-report survey instrument to determine the difference between the *better and worse* groups, and employee perceptions of a culture of innovation leadership. The survey instrument assessed four categories relating to each of the research objectives. These four categories contain nine competencies as key constructs (Malloch, 2010). Table 3 provides a description of each competency. The
survey instrument is based on the previous work of Amabile et al. (1996), Anderson and West (1998), Grigorenko and Sternberg (2001), and Sternberg et al. (1996).

Table 3

*Malloch's Innovation leadership competencies*

<table>
<thead>
<tr>
<th>Malloch (2010) Innovation Leadership Competencies</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-Knowledge &amp; Competence</strong></td>
<td>The analytical processing of one’s own personal strengths and weaknesses.</td>
</tr>
<tr>
<td><strong>Synthesis</strong></td>
<td>The ability of an individual to take given information and manage the concepts within an organization in a creative fashion.</td>
</tr>
<tr>
<td><strong>Formulation</strong></td>
<td>The ability to take information and creatively integrate it into the organizational environment.</td>
</tr>
<tr>
<td><strong>Collaboration</strong></td>
<td>Working as a group toward a common goal.</td>
</tr>
<tr>
<td><strong>Managing Knowledge</strong></td>
<td>The ability to create and generate knowledge to effectively support a system that fosters creativity and innovation from their employees.</td>
</tr>
<tr>
<td><strong>Coaching</strong></td>
<td>A way to encourage the use of innovation tools by supporting and reinforcing the value of innovation.</td>
</tr>
<tr>
<td><strong>Essence of Innovation</strong></td>
<td>The understanding of the innovation concept within a process, innovation tools, and the dynamics innovation can create within an organization.</td>
</tr>
<tr>
<td><strong>Innovation Knowledge</strong></td>
<td>The ability to strategically understand innovation and the process within the organization.</td>
</tr>
</tbody>
</table>

(Malloch, 2010)

Previous research helped the researcher design questions to assess the nine competencies. Foundational studies in the area of creativity and innovation support the
survey instrument design for the present study. The studies confirm that surveys are
useful instruments when comparing similar organizations and workforces and when used
successfully in combination with other methods when focusing on building the research
of creativity and innovation in the workplace (Amabile et al., 1996; Siegel & Karmmerer,
1978).

Two instruments serve as the foundation for the current study’s survey. The
KEYS instrument assesses a work environment and the organizational influences on
creativity (Amabile et al., 1996). The KEYS scale, therefore, gauges the work
environment and work performance of creativity and productivity. Used in many business
settings, the survey supports the concepts of a culture of innovation leadership and
innovation management (Amabile et al., 1996). Anderson and West (1998) developed the
Team Climate Inventory (TCI) to serve as a development tool for teams. The TCI survey
assesses a team climate for innovation within a healthcare setting through the use of a
four-factor theory that includes vision, participative safety, task orientation, and support
for innovation. The TCI survey offers a source of valuable information for the current
study because it examines teams and how they work in an organization to support
innovation (Anderson & West, 1998).

A scale allows participants to rank the degree of similarity on the importance of
each question (Fink, 2003; Stevens, 1946). Ranking scales can range from four, five, or
seven points (Fink, 2003) and response options include frequency, intensity, and
comparison (Stevens, 1946). Research suggests placing the negative response choice
first, while measuring perceptions of social attitudes helps to ensure an unbiased response
from the participant (Fink, 2003). The distribution of responses in a four-point scale
ensures the participant chooses positive or negatively between the significance of each construct (Fink, 2003). Amabile et al. (1996) chose a four-point Likert Scale for the KEYS instrument, an assessment tool that helps quantify the work environment in establishing a culture of innovation and assessing the organizational influences on creativity. In the KEYS instrument, Amabile and colleagues chose the four-point Likert scale format because they did not want a midpoint response; rather, they wanted participants to report a positive or a negative perception (Fink, 2003).

A five-point Likert scale allows participants to report a level of satisfaction with frequency (similar) responses (Fink, 2003). The frequency response choices for the present study are 1=never, 2=almost never, 3=sometimes, 4=often, and 5=always. The data from the survey created an interval scale of measurement discussed in the data analysis procedures section of this chapter. The researcher chose the five-point Likert scale for two reasons. First, a five-point scale is familiar in survey research (Huck, 2008). A majority of survey research allows for a midpoint option. Second, the researcher wants the midpoint response rate data as part of the findings. Midpoint response rates can indicate a valuable message from survey participants. See Appendix A for survey. Table 4 through Table 7 explains the relationship of the survey questions to the research objectives.

All 36 questions on the survey instrument helped to aid in answering RO1 (Table 4). RO1 compared organizations and the employee’s perception of a culture of innovation leadership. A culture of innovation leadership is composed of the competencies self-knowledge, competence, synthesis, formulation, collaboration, managing knowledge, coaching, essence of innovation, and innovation knowledge.
### Table 4

*Analysis of Survey Instrument Question Map for Research Objective 1*

<table>
<thead>
<tr>
<th>Research Objective</th>
<th>Innovation Competency</th>
<th>Survey Question</th>
<th>Specific Survey Question</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>RO1: Determine if there is a difference in a culture of innovation leadership between high readmission rate hospitals and low readmission rate hospitals.</td>
<td>Self-Knowledge &amp; Competence Synthesis</td>
<td>Q 1</td>
<td>My job description addresses how the role of innovative problem solving will benefit the organization.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td>Formulation Collaboratio n Managing Knowledge Coaching Essence of Innovation Knowledge</td>
<td>Q 2</td>
<td>My organization encourages innovative problem solving from employees.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td>Q 3</td>
<td>Q 4</td>
<td>I get timely feedback from my supervisor or leader on possible ideas I have developed for work related problems.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td>Q 5</td>
<td>Q 6</td>
<td>When I have innovative ideas, my organization has a formal process available for me to submit the ideas.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td>Q 7</td>
<td>Q 8</td>
<td>I have taken a training class on innovative problem solving offered by my organization.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td>Q 9</td>
<td></td>
<td>My organization has a formal process in place to seek ideas and innovative solutions from employees.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td>Q 10</td>
<td></td>
<td>When faced with a work related problem, I come up with multiple ideas.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td>Q 11</td>
<td></td>
<td>My organization values the knowledge of employees by actively documenting each</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td>Research Objective</td>
<td>Innovation Leadership Competency</td>
<td>Survey Question</td>
<td>Specific Survey Question</td>
<td>Scale</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>My supervisor or leader gives me timely feedback on possible ideas I have developed for work related problems.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>When working as a group, the team asks for input from everyone to solve work related problems.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>When solving work related problems my supervisor listens to my input.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>New knowledge and skills I develop on the job are actively documented by my organization.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The success of my organization depends on innovative thinking from employees.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>I come up with multiple ideas when faced with a work related problem.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The team asks for input from everyone when working as a group to solve work related problems.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>When I determine how my innovative solutions will function within our organization. I present the</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
</tbody>
</table>
Table 4 (continued).

<table>
<thead>
<tr>
<th>Research Objective</th>
<th>Innovation Leadership Competency</th>
<th>Survey Question</th>
<th>Specific Survey Question</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>solution to my supervisor(s).</td>
<td></td>
</tr>
<tr>
<td>Q 17</td>
<td></td>
<td></td>
<td>My organization has developed a formal process for employees to submit innovative ideas..</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td>Q 18</td>
<td></td>
<td></td>
<td>My organization supplies employees with a formal problem solving process to support innovation.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td>Q 19</td>
<td></td>
<td></td>
<td>My immediate supervisor encourages me to use innovative processes within my job function at work.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td>Q 20</td>
<td></td>
<td></td>
<td>To develop better solutions in the organization y department works as a team.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td>Q 21</td>
<td></td>
<td></td>
<td>By actively documenting each employee’s unique skills like certifications and bilingual, my organization values the knowledge of employees. For example, CPR and the ability to speak multiple languages.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td>Q 22</td>
<td></td>
<td></td>
<td>Having employees who are innovative thinkers plays a vital role in the success of my organization.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td>Q 23</td>
<td></td>
<td></td>
<td>To seek ideas and innovative solutions from employees my organization has a formal</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
</tbody>
</table>
Table 4 (continued).

<table>
<thead>
<tr>
<th>Research Objective</th>
<th>Innovation Leadership Competency</th>
<th>Survey Question</th>
<th>Specific Survey Question</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>process in place.</td>
<td></td>
</tr>
<tr>
<td>Q 24</td>
<td>My supervisor listens to my</td>
<td>Likert Agreement</td>
<td>My supervisor listens to my input on solving work related problems.</td>
<td>Scale (1-5)</td>
</tr>
<tr>
<td>Q 25</td>
<td>Training on the process of</td>
<td>Likert Agreement</td>
<td>Training on the process of creative idea generation is provided to employees in my organization.</td>
<td>Scale (1-5)</td>
</tr>
<tr>
<td>Q 26</td>
<td>The role of innovative problem</td>
<td>Likert Agreement</td>
<td>The role of innovative problem solving and how it will benefit the organization is addressed in my job description.</td>
<td>Scale (1-5)</td>
</tr>
<tr>
<td>Q 27</td>
<td>I am encouraged to use</td>
<td>Likert Agreement</td>
<td>I am encouraged to use innovative processes within my job function at work by my immediate supervisor.</td>
<td>Scale (1-5)</td>
</tr>
<tr>
<td>Q 28</td>
<td>In my organization, I have</td>
<td>Likert Agreement</td>
<td>In my organization, I have taken a training class on innovative problem solving.</td>
<td>Scale (1-5)</td>
</tr>
<tr>
<td>Q 29</td>
<td>I consider all aspects of how</td>
<td>Likert Agreement</td>
<td>I consider all aspects of how the idea will impact the organization or customer when I come up with potential solutions to work related problems.</td>
<td>Scale (1-5)</td>
</tr>
<tr>
<td>Q30</td>
<td>I regularly present to my</td>
<td>Likert Agreement</td>
<td>I regularly present to my supervisor(s) how my innovative solutions will function within our</td>
<td>Scale (1-5)</td>
</tr>
</tbody>
</table>
Six questions address RO2 by assessing an employee’s perception of problem-solving intelligence (Table 5). Of these six questions, question 7 and question 14 provided the employee’s opinion of self-knowledge and competence within the problem-solving intelligence. Question 29 and question 33 provided the employee’s opinion of
synthesis within problem-solving intelligence. Finally, question 16 and question 30 provided the employee’s opinion of formulation within problem-solving intelligence.

Table 5

*Analysis of Survey Instrument Question Map for Research Objective 2*

<table>
<thead>
<tr>
<th>Research Objective</th>
<th>Innovation Leadership Competency</th>
<th>Survey Question</th>
<th>Specific Survey Question</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>RO2: Determine if there is a difference in problem-solving intelligence between high readmission rate hospitals and low readmission rate hospitals.</td>
<td>Self-Knowledge &amp; Competence</td>
<td>Q 14</td>
<td>I come up with multiple ideas when faced with a work related problem.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td>Synthesis</td>
<td>Q 7</td>
<td>When faced with a work related problem, I come up with multiple ideas.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 33</td>
<td>When I come up with potential solutions to work related problems, I consider all aspects of how the idea will impact the organization or customer.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 29</td>
<td>I consider all aspects of how the idea will impact the organization or customer when I come up with potential solutions to work related problems.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td>Formulation</td>
<td>Q 30</td>
<td>I present to my supervisor(s) how my innovative solutions will function within our organization.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 16</td>
<td>When I determine how my innovative solutions will function within our organization, I present the solution to my supervisor(s).</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
</tbody>
</table>
Sixteen questions address RO3 by assessing an employee’s perception of innovation management (Table 7). Question 10, question 15, question 20, and question 32 provided the employee’s perception of collaboration within innovation management. Question 8, question 12, question 21, question 26, question 35, and question 36 provided the employee’s perception of managing knowledge within innovation management. Finally, question 3, question 9, question 11, question 19, question 24, and question 27 provided the employee’s perception of coaching within innovation management.

Table 6

*Analysis of Survey Instrument Question Map for Research Objective 3*

<table>
<thead>
<tr>
<th>Research Objective</th>
<th>Innovation Leadership Competency</th>
<th>Survey Question</th>
<th>Specific Survey Question</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>RO2: Determine if there is a difference in innovation management between high readmission rate hospitals and low readmission rate hospitals.</td>
<td>Collaboration Q 10</td>
<td>When working as a group, the team asks for input from everyone to solve work related problems.</td>
<td>Likert Agreement Scale (1-5)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 15</td>
<td>The team asks for input from everyone when working as a group to solve work related problems.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 32</td>
<td>My department works as a team to develop better solutions in the organization.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 20</td>
<td>To develop better solutions in the organization my department works as a team.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td>Managing Knowledge</td>
<td>Q 8</td>
<td>My organization values the knowledge of employees by actively documenting each.</td>
<td>Likert Agreement Scale (1-5)</td>
<td></td>
</tr>
</tbody>
</table>
Table 6 (continued).

<table>
<thead>
<tr>
<th>Research Objective</th>
<th>Innovation Leadership</th>
<th>Survey Question</th>
<th>Specific Survey Question</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>employee’s unique skills. For example, CPR and the ability to speak multiple languages.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 21</td>
<td>By actively documenting each employee’s unique skills like certifications and bilingual, my organization values the knowledge of employees. For example, CPR and the ability to speak multiple languages.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 1</td>
<td>My job description addresses how the role of innovative solving will benefit the organization.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 26</td>
<td>The role of innovative problem solving and how it will benefit the organization is addressed in my job descriptions.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 35</td>
<td>My organization actively documents new knowledge and skills I develop on the job.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 12</td>
<td>New knowledge and skills I develop on the job are actively documented by my organization.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td>Coaching</td>
<td></td>
<td>Q 24</td>
<td>My supervisor listens to my input on solving work related problems.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 11</td>
<td>When solving work-related</td>
<td>Likert</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 6 (continued).

<table>
<thead>
<tr>
<th>Research Objective</th>
<th>Innovation Leadership Competency</th>
<th>Survey Question</th>
<th>Specific Survey Question</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Problems my supervisor listens to my input.</td>
<td>Agreement Scale (1-5)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>My supervisor or leader gives me timely feedback on possible ideas I have developed for work-related problems.</td>
<td>Likert Agreement Scale (1-5)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>I get timely feedback on possible ideas I have developed for work-related problems by my supervisor or leader.</td>
<td>Likert Agreement Scale (1-5)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>My immediate supervisor encourages me to use innovative processes within my job function at work.</td>
<td>Likert Agreement Scale (1-5)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>I am encouraged to use innovative processes within my job function at work by my immediate supervisor.</td>
<td>Likert Agreement Scale (1-5)</td>
<td></td>
</tr>
</tbody>
</table>

For RO4, in the organizational framework of innovation category within the survey instrument, twelve questions assess the employee’s perception (Table 7). Of the twelve questions, question 4, question 6, question 13, question 17, question 18, question 22, question 23, and question 31 provided the employee’s perception of essence of innovation within an organizational framework of innovation. Question 5, question 25,
question 28, and question 34 provided the employee’s perception of managing knowledge within an organizational framework of innovation.

Table 7

*Analysis of Survey Instrument Question Map for Research Objective 4*

<table>
<thead>
<tr>
<th>Research Objective</th>
<th>Innovation Leadership Competency</th>
<th>Survey Question</th>
<th>Specific Survey Question</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>RO4: Determine if there is a difference in an organizational framework of innovation between high readmission rate hospitals and low readmission rate hospitals.</td>
<td>Essence of Innovation</td>
<td>Q 6</td>
<td>My organization has a formal process in place to seek ideas and innovation solutions from employees.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 23</td>
<td>To seek ideas and innovative solutions from employees my organization has a formal process in place.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 17</td>
<td>My organization has developed a formal process for employees to submit innovative ideas.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 4</td>
<td>When I have innovative ideas, my organization has a formal process available for me to submit the ideas.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 18</td>
<td>My organization supplies employees with a formal problem solving process to support innovation.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 31</td>
<td>A formal problem solving process supporting innovation is supplied by my organization.</td>
<td>Likert Agreement Scale (1-5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 22</td>
<td>Having employees who are innovative thinkers plays a</td>
<td>Likert Agreement</td>
</tr>
</tbody>
</table>
Table 7 (continued).

<table>
<thead>
<tr>
<th>Research Objective</th>
<th>Innovation Leadership Competency</th>
<th>Survey Question</th>
<th>Specific Survey Question</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q 13</td>
<td>Innovation Knowledge</td>
<td>Q 13</td>
<td>The success of my organization depends on innovative thinking from employees.</td>
<td>Scale (1-5)</td>
</tr>
<tr>
<td>Q 34</td>
<td></td>
<td>My organization trains employees on the process of creative idea generation.</td>
<td>Likert Agreement Scale (1-5)</td>
<td></td>
</tr>
<tr>
<td>Q 25</td>
<td></td>
<td>Training on the process of creative idea generation is provided to employees in my organization.</td>
<td>Likert Agreement Scale (1-5)</td>
<td></td>
</tr>
<tr>
<td>Q 5</td>
<td></td>
<td>I have taken a training class on innovative problem solving offered by my organization.</td>
<td>Likert Agreement Scale (1-5)</td>
<td></td>
</tr>
<tr>
<td>Q 28</td>
<td></td>
<td>In my organization, I have taken a training class on innovative problem solving.</td>
<td>Likert Agreement Scale (1-5)</td>
<td></td>
</tr>
</tbody>
</table>

Instrumentation Validity and Reliability

Important considerations in developing an original survey instrument include the validity and reliability of the instrument. Validity is when the survey instrument measures information the survey intends to measure (Litwin, 2003). Content validity is appropriate for the purpose of the current study because it utilizes a cost effective and manageable way of determining validity. Since content validity requires asking subject
matter experts to review the instrument (Litwin, 2003), a group of experts in the field of healthcare management and leadership assessed the instrument for content validity. The weakness with this method is the information given to the researcher are objective opinions only; this information is not derived by a scientific methodological measures (Huck, 2008; Litwin, 2003; Price & Mueller, 1986).

Reliability determines the consistency of a measure on an instrument. When developing a new instrument, verifying the internal consistency helps to confirm reliability (Litwin, 2003; Price & Mueller, 1986). The current study used alternate-form reliability which allows the researcher to reword a question in order to measure the same variable (Litwin, 2003).

Internal and External Validity

Addressing concerns about potential threats to internal and external validity helps researchers prepare for possible challenges to research results and helps to explain relationships between different variables within the study. One internal validity threat for the current study is selection validity (Bloom, 2011; Martella, Nelson & Marcharnd-Martella, 1999; Wofford, 2011). The participants in the survey were chosen by members of the hospital administration or by the hospital liaison for the study. The selection threat was discussed during initial stages of communication with each hospital liaison and repeated in the final communication piece. Communicating with each hospital liaison regarding the criteria for specific clinical staff needed for the current study helped to adhere to the study population guidelines. Another concern with internal validity lies in the conditions in which the participants must make use of the instrument (Weiner, 2011). For example, the environment in which the clinical staff members must take the survey
could involve numerous disruptions due to the stressful conditions common to hospitals. Such disruptions could become a threat to internal validity.

The population itself can be considered as a threat to external validity to the study. Addressing factors that impact external validity increases the value of the research results and makes it more likely that practical applications can be made from the study (Martella et al., 1999). The current study gathered the data from specific hospital staff, i.e., the clinical staff “actively working” with heart attack and heart failure patients, and generalizes the results to the entire hospital employee population. To achieve general results across a population, multiple work groups in the hospital should be included. The current study invited a specific group of employees from all hospitals within the population meeting specific criteria to participate in the study. Although multiple hospitals, a total of 432 hospitals throughout the U.S., were invited to participate, the current study only generalized the findings to the clinical staff actively working with heart attack and heart failure patients.

Data Collection Administration

In addition to increasing a research study’s credibility through internal and external validity, a survey must also be administered and data collected in a credible way. The survey was distributed to hospitals demonstrating better than U.S. national rates in readmissions of heart attack and heart failure and worse than U.S. national rates in readmissions of heart attack and heart failure reported by the U.S. Department of Health and Human Services. The hospital list generated from the Data.Medicare.Gov (2011) website reveals 285 hospitals better than U.S. national rates in readmissions of heart attack and heart failure and 174 hospitals with worse than U.S. national rates in
readmissions of heart attack and heart failure. Initial contact with each hospital consisted of contacting the Chief Executive Officer (CEO) and Vice President of Human Resources, the two individuals with authority to provide approvals for participation in the study. The decision to contact the CEO emerged because the CEO symbolizes the top decision maker in an organization. The Vice President of Human Resources was included because the study focused on employee perceptions. The Human Resources Director could serve as a liaison between the organization and the researcher. First, an initial email or phone call introduced the key stakeholders to the purpose of the study and the idea of distributing the survey in their organizations. Each stakeholder received a package including: (1) introduction letter (Appendix B) with information about the cost savings of lowering readmission rates; (2) copy of the survey (Appendix A); (3) data collection plan including five individual communication pieces and dates for distribution (Appendix C, Appendix D, Appendix E, Appendix F, & Appendix G); and (4) approval letter from The University of Southern Mississippi’s Institutional Review Board (Appendix H). Along with the importance of contacting key stakeholders for approvals to participate in the study, a plan to help increase response rates of individual participants was essential to the success of the research.

The strategies to increase response rates were modified from the work of Dillman et al. (2009). The researchers suggest multiple contacts to increase response rates. The contacts include (1) prenotice letter, (2) the invitation to participate with the survey instrument, (3) a thank you postcard, (4) a replacement survey, and (5) a final contact. For participants without an email address, the survey was distributed in the above stated order by the appointed hospital liaison. This person was determined by hospital
leadership after agreeing to participate in the survey. For participants with an email address, the prenotice letter was sent electronically to the organization’s email list of participants meeting the criteria of clinical staff working with cardiac patients. Emailing a URL to participants inviting them to take the survey via the computer concluded the second step in the distribution of the survey process. A thank you postcard was distributed electronically into a thank you email to the staff. A replacement survey was distributed electronically via email. Finally, the last contact included an email with a message of a “last chance” to access the survey online. Appendix C, Appendix D, Appendix E, Appendix F, and Appendix G represent email survey contacts. Dillman et al. (2009) illustrate introducing a survey in a variety of ways and that adding an incentive increases the response rate. Table 8 illustrates the timeline for the study.

Table 8

Modification of Dillman, Smyth, and Christian’s Method

<table>
<thead>
<tr>
<th>Dillman’s (2010) Method</th>
<th>Modifications</th>
<th>Date Sent</th>
<th>Appendix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prenotice Letter</td>
<td>Prenotice Email</td>
<td>Week 1</td>
<td>C</td>
</tr>
<tr>
<td>Questionnaire Mailing</td>
<td>Questionnaire Online Link Email</td>
<td>Week 1</td>
<td>D</td>
</tr>
<tr>
<td>Thank You Postcard</td>
<td>Thank You Email</td>
<td>Week 2</td>
<td>E</td>
</tr>
<tr>
<td>Replacement Questionnaire</td>
<td>Replacement Questionnaire Email</td>
<td>Week 3</td>
<td>F</td>
</tr>
<tr>
<td>Final Contact</td>
<td>Final Contact Survey Email</td>
<td>Week 4</td>
<td>G</td>
</tr>
</tbody>
</table>

An incentive of a ten-dollar pre-paid Visa card for the first 25 participants to complete the survey and the survey URL link was mentioned within each communication to the participants. Incentives are increasingly used in research to motivate survey participation (Dillman et al., 2009). Some researchers take into consideration available venues to the population of participants. For example, common applications include an incentive to coffee shops or restaurants. However, the current study included a total of 432 hospitals. Knowledge of accessibility to particular vendors of the population with local businesses created a restraint for distribution of this type of incentive. Participants are able to use a pre-paid Visa card in most businesses, making it an attractive incentive for all participants. Once the participant completed the survey, a prompt alerted the participant to include their name and hospital in consideration for the incentive. The first 25 participants that completed the prompt accurately received the Visa card sent to their hospital liaison and in turn the liaison distributed the incentive to the participant. A handwritten thank you note was sent to all participants eligible for the incentive.

The researcher utilized Dillman et al. (2009) method of five contacts. Table 8 represents the five contacts to increase response rates with participants. Hospital liaisons such as the Human Resources Director helped determine if email or paper based surveys were most appropriate for employees at their hospital.

The online survey instrument was available to participants through the online program Survey Monkey. Participants with an email address received email communications from the liaison through the organization’s email server. The data collected through Survey Monkey was exported to an Excel spreadsheet for analysis. The
researcher used the Statistical Program for the Social Sciences (SPSS) to analyze the data.

Contacts to employees without email addresses were provided the same information as those with email addresses except the participants were presented with a printed copy through inter-office mail and not an email. A paper-based survey instrument was distributed by the hospital liaison to the portion of the population without email access. The participants returned the paper-based surveys confidentially by sealing them in a manila envelope supplied by the researcher and routed to the hospital liaison through the interoffice mail system. As the paper-based surveys were returned to the researcher via the liaison, the data was manually entered into the Survey Monkey program. This step was included as the survey program contains SPSS integration options, which the researcher utilized to ultimately have all data in a uniform electronic format for ease of analysis. Once data was transferred into the SPSS program, the researcher proceeded with data analysis. All paper-based surveys were locked in a file cabinet in the office of the researcher until final disposition of the surveys which were accomplished through shredding. Data analysis files were stored on the researcher’s computer.

Data Analysis Procedures

The researcher used demographics statistics and an independent t-test to compare two independent groups. First, the data was analyzed beginning with an examination of demographics statistics by using a chi-square test to provide information about the frequencies of the data of the population (Field, 2005; Gall et al., 2005; Hittleman & Simon, 2006; Martella et al., 1999). Then the researcher compared the two independent
groups through the use of a t-test. Table 9 represents a data analysis map. Descriptive statistics in quantitative research describes the research using numbers and helps to gain insight into the group comparison.

Table 9

*Data Analysis Map*

<table>
<thead>
<tr>
<th>Research Objective</th>
<th>Variables Against Readmission Rates of <em>better and worse</em> than U.S. National Rates</th>
<th>Survey Question</th>
<th>Statistical Test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RO1</strong>: Determine if there is a difference in a culture of innovation leadership between high readmission rate hospitals and low readmission rate hospitals.</td>
<td>Self-Knowledge &amp; Competence, Synthesis, Formulation, Collaboration, Managing, Knowledge</td>
<td>Q 1, Q 2, Q 3, Q 4, Q 5, Q 6, Q 7</td>
<td>Descriptive Statistics and T-Test</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 8, Q 9, Q 10, Q 11, Q 12, Q 13, Q 14, Q 15, Q 16, Q 17, Q 18, Q 19, Q 20, Q 21, Q 22, Q 23, Q 24, Q 25</td>
<td></td>
</tr>
</tbody>
</table>
Table 9 (continued).

<table>
<thead>
<tr>
<th>Research Objective</th>
<th>Variables Against Readmission Rates of <em>better and worse</em> than U.S. National Rates</th>
<th>Survey Question</th>
<th>Statistical Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>RO2: Determine if there is a difference in problem-solving intelligence between high readmission rate hospitals and low readmission rate hospitals.</td>
<td>Self-Knowledge &amp; Competence</td>
<td>Q 26</td>
<td>Descriptive Statistics and T-Test</td>
</tr>
<tr>
<td></td>
<td>Synthesis</td>
<td>Q 27</td>
<td>Q 28</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 30</td>
<td>Q 31</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 33</td>
<td>Q 34</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 36</td>
<td>Q 7</td>
</tr>
<tr>
<td>RO3: Determine if there is a difference in innovation management between high readmission rate hospitals and low readmission rate hospitals.</td>
<td>Collaboration</td>
<td>Q 10</td>
<td>Q 15</td>
</tr>
<tr>
<td></td>
<td>Managing Knowledge</td>
<td>Q 15</td>
<td>Q 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 1</td>
<td>Q 8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 21</td>
<td>Q 26</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 12</td>
<td>Q 24</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 9 (continued).

<table>
<thead>
<tr>
<th>Research Objective</th>
<th>Variables Against Readmission Rates of better and worse than U.S. National Rates</th>
<th>Survey Question</th>
<th>Statistical Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>RO4: Determine if there is a difference in an organizational framework of innovation between high readmission rate hospitals and low readmission rate hospitals.</td>
<td>Essence of Innovation</td>
<td>Q 6</td>
<td>Descriptive Statistics and T-Test</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 23</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 17</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 18</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 31</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 22</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 13</td>
<td></td>
</tr>
<tr>
<td>Innovation Knowledge</td>
<td></td>
<td>Q 34</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 25</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q 28</td>
<td></td>
</tr>
</tbody>
</table>

Summary

In summary, Chapter III describes the research design developed for the study. A quantitative approach was used to assess a culture of innovation leadership within organizations. The self-administered researcher-designed survey can have practical implications for hospitals across the U.S. in how they innovate organizational structures.

The population of the study included hospitals that are noted better or worse than the U.S. national rate for readmission rates in heart attack and heart failure reported by
the U.S. Department of Health and Human Services. The specific employees from the hospitals invited to participate in the study included clinical staff *actively working* with heart attack and heart failure patients.
CHAPTER IV

RESULTS

Introduction

This chapter presents the results of the study. The U.S. Department of Health and Human Services measures national readmission rates of heart attack and heart failure by reporting *better or worse* than U.S. national readmission rate results. The purpose of the study is to determine if a perceived difference exists between the two groups from nine culture of innovation leadership competencies. The study compares three different competency groups: problem-solving intelligence, innovation management, and organizational framework of innovation between hospitals with higher than U.S. national rates in readmissions of heart attack and heart failure and hospitals with lower than U.S. national rates in readmissions of heart attack and heart failure.

Data was collected from a total of 115 *better* hospital participants and 29 *worse* hospital participants within the U.S. The participants were asked to answer a 36-question self-reported survey instrument used to determine the difference between the *better or worse* group and employee perceptions of a culture of innovation leadership. The survey instrument assesses three categories relating to each of the study’s research objectives. The three categories contain nine competencies as key constructs (Malloch, 2010). The data was translated into scores for nine competencies and used to determine differences between “better and worse” hospitals. The survey included questions regarding general demographic characteristics, such as gender, job function, level in the organization, education and years of service.
Demographic Data

Frequency and percentage distribution information regarding the demographic characteristics of the study population is shown in Table 10. Out of the 115 participants in the better hospitals, the majority was female (n = 99; 86.1%), working as clinical staff (n = 71; 61.7%) and receive an hourly employee wage (n = 74; 64.3%) in the organization. A plurality of respondents holds bachelor’s degrees (n = 47; 40.9%) and indicates employment of zero to five years (n = 39; 33.9%). For the worse hospital group, out of the 29 participants, the majority was female (n = 27; 93.1%) working as clinical staff (n = 18; 62.1%), and receive an hourly employee wage (n = 16; 55.2%). Over 41 percent of the 29 participants hold a bachelor’s degree and have worked with the organization for six to ten years (n = 12; 41.4%).

A chi-square analysis examined if differences exist between the demographics of the two groups, better and worse, regarding a culture of innovation leadership in healthcare. A chi-square (\( \chi^2 \)) test was chosen because it provides information about the frequencies of the data of the population rather than its mean, like the independent sample t-test (Field, 2005; Gall et al., 2005; Martella et al., 1999). In Table 11, the chi-square test shows there is a significant difference in the gender makeup between the two groups of employees as illustrated by the calculated chi-square value of 81.000 which is greater than \( \chi^2 \) tabulated value 3.841. The p value is 0.000 which is less than 0.05, hence, there is a statistically significant difference between gender in the better and worse groups. Job function is also statistically significantly different as the \( x^2 \) calculated value 111.944 is greater than the \( x^2 \) tabulated value 7.815. The p value is 0.000 which is less than 0.05. Level in organization, education, and years of service are statistically
significantly different between the two groups as the $x^2$ calculated values 170.671, 134.352, and 26.278 are greater than $x^2$ tabulated values of 9.488, 12.592, and 9.488.

The p values of all three variables are 0.000 which is less than 0.05; hence, the demographic factors are different for the better and worse groups.

Table 10

Demographic Statistics of Participants

<table>
<thead>
<tr>
<th></th>
<th>Better Hospital Group</th>
<th>Worse Hospital Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>16.0</td>
<td>13.9</td>
</tr>
<tr>
<td>Female</td>
<td>99.0</td>
<td>86.1</td>
</tr>
<tr>
<td>Total</td>
<td>115.0</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Job Function</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administration</td>
<td>18.0</td>
<td>15.7</td>
</tr>
<tr>
<td>Clinical Staff</td>
<td>71.0</td>
<td>61.7</td>
</tr>
<tr>
<td>Support Staff</td>
<td>5.0</td>
<td>4.3</td>
</tr>
<tr>
<td>Others</td>
<td>21.0</td>
<td>18.3</td>
</tr>
<tr>
<td>Total</td>
<td>115.0</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Level in Organization</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Executive</td>
<td>4.0</td>
<td>3.5</td>
</tr>
<tr>
<td>Manager</td>
<td>10.0</td>
<td>8.7</td>
</tr>
<tr>
<td>Supervisor</td>
<td>5.0</td>
<td>4.3</td>
</tr>
<tr>
<td>Hourly Employee</td>
<td>74.0</td>
<td>64.3</td>
</tr>
<tr>
<td>Others</td>
<td>21.0</td>
<td>18.3</td>
</tr>
<tr>
<td>Missing System</td>
<td>1.0</td>
<td>0.9</td>
</tr>
<tr>
<td>Total</td>
<td>115.0</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School</td>
<td>4.0</td>
<td>3.5</td>
</tr>
<tr>
<td>Certification</td>
<td>4.0</td>
<td>3.5</td>
</tr>
<tr>
<td>Associate</td>
<td>24.0</td>
<td>20.9</td>
</tr>
<tr>
<td>Bachelor</td>
<td>47.0</td>
<td>40.9</td>
</tr>
<tr>
<td>Master</td>
<td>24.0</td>
<td>20.9</td>
</tr>
<tr>
<td>Doctorate</td>
<td>2.0</td>
<td>1.7</td>
</tr>
<tr>
<td>Others</td>
<td>8.0</td>
<td>7.0</td>
</tr>
<tr>
<td>Missing System</td>
<td>2.0</td>
<td>1.7</td>
</tr>
</tbody>
</table>
Table 10 (continued).

<table>
<thead>
<tr>
<th>Years of Service</th>
<th>Better Hospital Group</th>
<th>Worse Hospital Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent</td>
</tr>
<tr>
<td>Total</td>
<td>115.0</td>
<td>100.0</td>
</tr>
<tr>
<td>0 to 5 Years</td>
<td>39.0</td>
<td>33.9</td>
</tr>
<tr>
<td>6 to 10 Years</td>
<td>21.0</td>
<td>18.3</td>
</tr>
<tr>
<td>11 to 15 Years</td>
<td>17.0</td>
<td>14.8</td>
</tr>
<tr>
<td>16 to 20 Years</td>
<td>6.0</td>
<td>5.2</td>
</tr>
<tr>
<td>Over 20 Years</td>
<td>32.0</td>
<td>27.8</td>
</tr>
<tr>
<td>Total</td>
<td>115.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 11

*Chi Square Analysis for Demographics*

<table>
<thead>
<tr>
<th></th>
<th>Gender</th>
<th>Job Function</th>
<th>Level</th>
<th>Education</th>
<th>Yrs In Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Square</td>
<td>81.000a</td>
<td>111.944b</td>
<td>170.671c</td>
<td>134.352d</td>
<td>26.278e</td>
</tr>
<tr>
<td>df</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Asymp. Sig.</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>

The Cronbach’s alpha was conducted to determine if the survey questions are reliable and valid. Table 12 presents the Cronbach’s alpha test for reliability. The survey questions are reliable if Cronbach’s alpha value exceeds the requirement of 0.70 (Gall et al., 2005). The Cronbach’s alpha test measures the internal consistency of the scale used for questions in a survey. It assesses whether similar results are likely to occur. The reliability of Cronbach’s alpha value for the data set in this study is 0.958 which means the scale used in the questionnaire is 95.8% reliable and the internal consistency is
95.8%. The scale used in the questionnaire will likely produce consistent results in multiple trials.

Table 12

*Cronbach's Alpha Test for Reliability*

<table>
<thead>
<tr>
<th>Study Instrument</th>
<th>Cronbach's Alpha</th>
<th>No. Of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>36-Question Self Reported Instrument</td>
<td>0.958</td>
<td>72</td>
</tr>
</tbody>
</table>

Independent samples t-test were conducted to determine if there is a difference in perceptions between the two groups, the researcher compared the nine culture of innovation leadership competencies (RO1) and the three different competency subgroups: problem-solving intelligence (RO2) innovation management (RO3), and organizational framework of innovation (RO4) between hospitals with higher than U.S. national rates in readmissions of heart attack and heart failure and hospitals with lower than U.S. national rates in readmissions of heart attack and heart failure. The study determines if there is a statistically significant difference in the perception of participants from two groups regarding a culture of innovation leadership competencies.

The survey instrument for the research included an interval scale of measurement used to rank employee perceptions of a culture of innovation leadership. According to Stevens (1946), an interval scale of measurement represents specific distances between the numbers but not an absolute zero (Agresti & Finlay, 1997; Hittleman & Simon, 2006; Martella et al., 1999). Interval data requires statistical procedures referred to as parametric statistics which include specific assumptions. The parametric statistical assumptions include a normal distribution curve, equal intervals, and equal variances (Agresti & Finlay, 1997; Hittleman & Simon, 2006; Martella et al., 1999). Statistically
significance to results (predictions made from the data) from parametric statistics produce more compelling results than nonparametric statistics (Martella et al., 1999).

The descriptive statistics collected include the mean, mode, and standard deviation for the nine culture of innovation leadership competencies. These measures of central tendency and measures of variability were used to run the analysis for the t-test. An independent t-test is the statistical test conducted to compare two independent groups (Gall et al., 2005 & Martella et al., 1999). Based on the four research objectives of the current research, the researcher determined the difference between a culture of innovation leadership between high readmission rate hospitals and low readmission rate hospitals. The t-test illustrated the difference between two groups perception’s of the nine culture of innovation leadership competencies collectively (RO1) and compares the three different competency groups: problem-solving intelligence (RO2), innovation management (RO3), and organizational framework of innovation (RO4). The SPSS software program was used to help compare the two groups. Specifically, each survey participant represented a data set. Questions under each of the nine individual competencies were aggregated (mean scores added together) to determine the perception of a culture of innovation leadership between both of the hospital groups for each research objective.

Results of the Analysis

**RO 1: Determine if there is a difference in a culture of innovation leadership between high readmission rate hospitals and low readmission rate hospitals.**

The first research objective examines the difference in the participants’ perception of a culture of innovation leadership between hospitals with higher than U.S. national rates in readmissions of heart attack and heart failure and hospitals with lower than U.S. national rates in readmissions of heart attack and heart failure as measured by the U.S.
Department of Health and Human Services. The mean score of the participants in the self-reported survey indicate the significance of the variables for the culture of innovation leadership in U.S. hospitals. The mean scores are reflected in Table 13. The higher mean value from the worse group of U.S hospitals indicates that the group perceives competencies of a culture of innovation leadership exist and have a stronger perception than the better group of U.S. hospitals.

Table 13

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culture of Innovation</td>
<td>Better</td>
<td>115</td>
<td>2.6376</td>
<td>1.51316</td>
</tr>
<tr>
<td></td>
<td>Worse</td>
<td>29</td>
<td>3.1128</td>
<td>.95083</td>
</tr>
</tbody>
</table>

Perceptions of a culture of innovation leadership in Table 14 shows the independent samples t-test between the better and worse hospital groups. The independent samples t-test illustrates the homogeneity of the variances across the groups of independent variables. According to the results of the Levene’s test, equal variance should not be assumed between the two groups, better or worse since the significance level is .001, which is less than 0.05 (Field, 2005; Gall et al., 2005). The p value of .039 indicates the differences were statistically significant (Field, 2005; Gall et al., 2005). The scores of the worse hospital group (M = 3.1128) were significantly higher than the scores of the better hospital group (M = 2.6376). The higher mean value from the worse group of U.S hospitals indicates that the group has a stronger perception of a culture of
innovation leadership competencies. Thus, based on this study’s data, a significant difference exists in the perception of a culture of innovation leadership between hospitals with higher and lower than U.S. national rates in readmission of heart attack and heart failure; $t (68.339) = 2.102, p = 0.039$. The worse hospital group perceives a stronger existence of a culture of innovation leadership competencies than the better hospital group.

Table 14

*Independent Samples t-test of a Culture of Innovation Leadership*

<table>
<thead>
<tr>
<th>Culture of Innovation Leadership</th>
<th>Levene's Test</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Equal variances assumed</td>
<td>10.631</td>
<td>.001</td>
</tr>
<tr>
<td>Unequal variances</td>
<td>2.102</td>
<td>.039</td>
</tr>
</tbody>
</table>

RO 2: *Determine if there is a difference in problem solving intelligence between high readmission rate hospitals and low readmission rate hospitals.*

The second research objective examines the difference in the participants’ perception of problem solving intelligence between hospitals with higher than U.S. national rates in readmissions of heart attack and heart failure and hospitals with lower than U.S. national rates in readmissions of heart attack and heart failure as measured by the U.S. Department of Health and Human Services. Table 15 illustrates the mean scores in problem-solving intelligence between hospitals with higher than U.S. national rates in
readmissions of heart attack and heart failure and hospitals with lower than U.S. national rates in readmissions of heart attack and heart failure. The higher mean value from the worse group of U.S hospitals indicates that the group perceives competencies of problem-solving intelligence exist and have a stronger perception than the better group of U.S. hospitals.

Table 15

*Group Statistics for Problem-Solving Intelligence*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Knowledge &amp; Competence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Better</td>
<td>115</td>
<td>2.9609</td>
<td>1.60338</td>
<td>.14952</td>
</tr>
<tr>
<td>Worse</td>
<td>29</td>
<td>3.4310</td>
<td>1.17050</td>
<td>.21736</td>
</tr>
<tr>
<td>Synthesis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Better</td>
<td>115</td>
<td>2.5696</td>
<td>1.90208</td>
<td>.17737</td>
</tr>
<tr>
<td>Worse</td>
<td>29</td>
<td>2.7931</td>
<td>1.40482</td>
<td>.26087</td>
</tr>
<tr>
<td>Formulation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Better</td>
<td>115</td>
<td>2.5652</td>
<td>1.66560</td>
<td>.15532</td>
</tr>
<tr>
<td>Worse</td>
<td>29</td>
<td>2.9310</td>
<td>1.13958</td>
<td>.21161</td>
</tr>
</tbody>
</table>

Perceptions of a culture of innovation leadership in Table 16 shows the independent samples t-test between the “better and worse” hospital groups. The independent samples t-test checks for the homogeneity of the variances across the groups of independent variables. According to the results of the Levene’s test, equal variance should not be assumed between the two groups with the competencies of synthesis and formulation since the significance level is 0.000 and 0.002, which is less than 0.05 (Field, 2005; Gall et al., 2005). The p value .554 and .168 indicates the differences were not statistically significant (Field, 2005; Gall et al., 2005). Thus, based on the current data, no significant difference exists in the perception of synthesis and formulation
competencies between hospitals with higher and lower than U.S. national rates in readmission of heart attack and heart failure; synthesis: $t (142) = -.593, p = 0.554$ and formulation: $t (61.882) = 1.394, p = 0.168$. Conversely, the Levene’s test indicates, self-knowledge and competence has equal variances across the two groups because the significance level is .067 which is greater than 0.05. The $p$ value 0.141 assumes no statistically significant difference between the two groups because it is greater than 0.05; $t (142) = 1.481, p = 0.067$ (Field, 2005; Gall et al., 2005). The results suggest that perception of self-knowledge and competence is not different between the two groups.

The results of the analysis for research objective two indicates that perceptions of problem-solving intelligence competencies is not significantly different between the two groups.

Table 16

*Independent Samples t-test of Problem-Solving Intelligence*

<table>
<thead>
<tr>
<th></th>
<th>Levene's Test</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$F$</td>
<td>$t$</td>
</tr>
<tr>
<td><strong>Self Knowledge &amp; Competence</strong></td>
<td>Equal variances assumed</td>
<td>3.409</td>
</tr>
<tr>
<td></td>
<td>Unequal variances</td>
<td>-</td>
</tr>
<tr>
<td><strong>Synthesis</strong></td>
<td>Equal variances assumed</td>
<td>13.355</td>
</tr>
<tr>
<td></td>
<td>Unequal variances</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>
Table 16 (continued).

<table>
<thead>
<tr>
<th>Formulation</th>
<th>Levene's Test</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Equal variances assumed</td>
<td>9.813</td>
<td>.002</td>
</tr>
<tr>
<td>Unequal variances</td>
<td>1.394</td>
<td>61.882</td>
</tr>
</tbody>
</table>

**RO 3:** Determine if there is a difference of innovation management between high readmission rate hospitals and low readmission rate hospitals.

The third research objective examines if there is a difference in the participants’ perception of innovation management between hospitals with higher than U.S. national rates in readmissions of heart attack and heart failure and hospitals with lower than U.S. national rates in readmissions of heart attack and heart failure as measured by the U.S. Department of Health and Human Services. Table 17 illustrates the mean scores for perceptions of innovation management between hospitals with higher than U.S. national rates in readmissions of heart attack and heart failure and hospitals with lower than U.S. national rates in readmissions of heart attack and heart failure. The higher mean value from the *worse* group of U.S hospitals indicates that the group perceives competencies of innovation management exist and have a stronger perception than the *better* group of U.S. hospital.
Table 17

*Group Statistics of Innovation Management*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Collaboration</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Better</td>
<td>115</td>
<td>2.9087</td>
<td>1.68889</td>
<td>.15749</td>
</tr>
<tr>
<td>Worse</td>
<td>29</td>
<td>3.0345</td>
<td>1.15288</td>
<td>.21408</td>
</tr>
<tr>
<td><strong>Managing Knowledge</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Better</td>
<td>115</td>
<td>2.5907</td>
<td>1.60462</td>
<td>.14963</td>
</tr>
<tr>
<td>Worse</td>
<td>29</td>
<td>3.3272</td>
<td>1.16818</td>
<td>.21693</td>
</tr>
<tr>
<td><strong>Coaching</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Better</td>
<td>115</td>
<td>2.9116</td>
<td>1.63944</td>
<td>.15288</td>
</tr>
<tr>
<td>Worse</td>
<td>29</td>
<td>3.2126</td>
<td>.95421</td>
<td>.17719</td>
</tr>
</tbody>
</table>

Perception of a culture of innovation leadership in Table 18 indicates the independent samples t-test between the “better and worse” hospital groups. The independent samples t-test illustrates the homogeneity of the variance across the independent variables. According to the results of the Levene’s test, equal variances should not be assumed between the two groups with any of the competencies in the innovation management measures since the significance level is 0.005 for collaboration, 0.002 for managing knowledge and 0.000 for coaching, less than 0.05 (Field, 2005; Gall et al., 2005). The p value of the two competencies, collaboration 0.638; t (62.043) = .473, p = 0.638 and coaching 0.202; t (74.995) = 1.286, p = 0.202 indicate the differences were not statistically significant (Field, 2005; Gall et al., 2005). The p value of the managing knowledge competency is less than 0.05; t (57.771) = 2.795, p = 0.007 and indicates there is a statistically significant difference between the two groups. Thus, based on the current data, managing knowledge was the only competency in the innovation management measures that was significantly higher in the worse hospitals.
Table 18

Independent Samples t-test of Innovation Management

<table>
<thead>
<tr>
<th></th>
<th>Levene's Test</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Collaboration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equal variances</td>
<td>8.018</td>
<td>.005</td>
</tr>
<tr>
<td>Unequal variances</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Managing Knowledge</td>
<td>9.494</td>
<td>.002</td>
</tr>
<tr>
<td>Equal variances</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coaching</td>
<td>13.502</td>
<td>.000</td>
</tr>
<tr>
<td>Unequal variances</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

RO 4: Determine if there is a difference in an organizational framework of innovation leadership between high readmission rate hospitals and low readmission rate hospitals.

The fourth research objective examines the difference in the participants’ perception of organizational framework of innovation leadership between hospitals with higher than U.S. national rates in readmissions of heart attack and heart failure and hospitals with lower than U.S. national rates in readmissions of heart attack and heart failure as measured by the U.S. Department of Health and Human Services. Table 19 depicts the differences in an organizational framework of innovation between hospitals with higher than U.S. national rates in readmissions of heart attack and heart failure and
hospitals with lower than U.S. national rates in readmissions of heart attack and heart failure. The higher mean value from the worse group of U.S hospitals indicates that the group has a stronger perception of the existence of an organizational framework of innovation competencies than the better group of U.S. hospitals.

Table 19

*Group Statistics of Organizational Framework of Innovation*

<table>
<thead>
<tr>
<th></th>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essence of Innovation</td>
<td>Better</td>
<td>115</td>
<td>2.6007</td>
<td>1.58160</td>
<td>.14749</td>
</tr>
<tr>
<td></td>
<td>Worse</td>
<td>29</td>
<td>3.2543</td>
<td>.96679</td>
<td>.17953</td>
</tr>
<tr>
<td>Innovation Knowledge</td>
<td>Better</td>
<td>115</td>
<td>1.7804</td>
<td>1.43008</td>
<td>.13336</td>
</tr>
<tr>
<td></td>
<td>Worse</td>
<td>29</td>
<td>3.1724</td>
<td>1.02666</td>
<td>.19065</td>
</tr>
</tbody>
</table>

Perceptions of a culture of innovation leadership in Table 20 shows the independent samples t-test between the better and worse hospital groups. The independent samples t-test indicates the homogeneity of the variance across the groups of independent variables. According to the results of the Levene’s test, equal variances should not be assumed between the two groups for both competencies since the significance level is 0.000 and 0.004 which is less than 0.05 (Field, 2005; Gall et al., 2005). The p value 0.006 and 0.000 assumes there is a statistically significant difference between the two groups (Field, 2005; Gall et al., 2005). Thus, based on the current data there is a significant difference participants’ perception that an organizational framework of innovation exists between hospitals with higher and lower than U.S. national rates in readmission of heart attack and heart failure; essence of innovation: t (70.644) = 2.813, p
= 0.006 and innovation knowledge: \( t(58.654) = 5.983, p = 0.000 \). This research objective indicates participants’ perception from the \textit{worse} group of an organizational framework of innovation competencies are significantly higher than the \textit{better} group.

Table 20

\textit{Independent Samples t-test of Organizational Framework of Innovation}

<table>
<thead>
<tr>
<th></th>
<th>Levene's Test</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Essence of Innovation</td>
<td>15.458</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>2.813</td>
<td>.006</td>
</tr>
<tr>
<td>Innovation Knowledge</td>
<td>8.746</td>
<td>.004</td>
</tr>
<tr>
<td></td>
<td>5.983</td>
<td>.000</td>
</tr>
</tbody>
</table>

\textbf{Summary}

This chapter summarized the statistical results of the study. The chi-square analyses indicate that the two groups are significantly different in terms of gender, job function, level in organization, education, and years of service. An independent samples t-test compares the perception of a culture of innovation leadership competencies in the two groups; hospitals with higher than U.S. national rates in readmissions of heart attack and heart failure and hospitals with lower than U.S. national rates in readmissions of heart attack and heart failure measured by the U.S. Department of Health and Human
Services. The results of the study’s independent samples t-test, indicate the worse hospital group perceived their organizations to have stronger competencies of a culture of innovation leadership than the better group. In the problem-solving intelligence category, none of the competencies had significant differences for either the better or worse groups as perceived by the participants of the study. In the innovation management competency category the worse hospital group perceived managing knowledge as statistically significantly different when comparing the two groups. In examining the competencies of the organizational framework of innovation, the worse hospital group perceived both essence of innovation and innovation knowledge to have statistically significant differences when comparing the two groups. Chapter V will discuss the implications of the results of the study and provide recommendations for future research.
CHAPTER V
DISCUSSION

Summary

Creativity and innovation ranked as the top ten critical issues relating to performance improvement in the world’s top companies (Davis, 2011). While creativity scores in children and adults have shown a trend of decline (Bronson & Merryman, 2010), leadership structures in complex business environments require an adaptive and responsive workforce (Driver, 2001; Hitt & Ireland, 2002). Cultivating creativity and innovation in employees and organizational processes add a competitive advantage for businesses (Amabile, 1996; Amabile et al., 1996; Driver, 2001; Hitt & Ireland, 2002).

The purpose of this study determines the perceptions of a culture of innovation leadership competencies at high-performing and low-performing organizations and adds to the lack of research in the area. Studies show leveraging the workforce of an organization adds to the value ensuring a competitive advantage for future growth and opportunities (Amabile, 1996; Amabile et al., 1996; Driver, 2001; Hitt & Ireland, 2002). Malloch (2010) utilizes nine competencies to illustrate how an organization can maintain a competitive advantage within the healthcare industry. The Centers for Medicare and Medicaid Services created a new readmission policy that will impose financial penalties on hospitals that do not maintain a level of quality. The study’s methodology compared two hospital groups in order to assess a culture of innovation leadership between hospitals with higher than U.S. national rates in readmissions of heart attack and heart failure and hospitals with lower than U.S. national rates in readmissions of heart attack and heart failure measured by the U.S. Department of Health and Human Services.
Conclusions and Discussion

The first research objective examines if there is a difference in a culture of innovation leadership between the better and worse hospitals measured by their readmission rates. Based on the results, there is a statistically significant difference in perception of a culture of innovation between the groups. The worse hospital group reported a higher mean than the better hospital group. The results indicated employees’ perception in hospitals with higher than U.S. national rates in readmission of heart attack and heart failure perceived a greater culture of innovation leadership exists within their organizations. This finding is contrary to previous research indicating that cultivating creativity and innovation in employees and organizational processes add a competitive advantage for businesses (Amabile, 1996; Amabile et al., 1996; Driver, 2001; Hitt & Ireland, 2002).

The second research objective examines if there is a difference in problem-solving intelligence between high readmission rate hospitals and low readmission rate hospitals. None of the problem solving intelligence competencies were statistically significant between the two groups. This indicates no difference in perceptions from the participants answering questions regarding the competencies of self-knowledge and competence, synthesis and formulation. These skills sets are an essential foundation to any organization because they ensure employees can make effective and efficient decisions. The descriptive analyses of the innovation leadership competencies indicate that the mean scores of self-knowledge and competence, synthesis and formulation were higher in the worse group. The results indicate there is not a statistically significant difference between the better and worse hospital groups for these competencies.
Interestingly, the problem-solving intelligence category includes skill sets emphasized in the literature as important in the 21st century workforce (Malloch, 2010).

The third research objective examines if there is a statistically significant difference of innovation management competencies between high readmission rate hospitals and low readmission rate hospitals. The results indicated employees in hospitals with higher than U.S. national rates in readmission of heart attack and heart failure perceived the managing knowledge competency. The worse hospital group had a statistically significant higher perception than the better hospital groups for managing knowledge but not the other two competencies, collaboration and coaching. Malloch (2010) indicates the importance of the innovation management competency category as key to creating a culture of innovation leadership. Other researchers acknowledge creativity and innovation as a significant shift in the way organizations view these skill sets relating to competitive advantage in businesses (Amabile, 1996; Amabile et al., 1996; Driver, 2001; Hitt & Ireland, 2002).

The fourth research objective examines if there is a difference in an organizational framework of innovation between high readmission rate hospitals and low readmission rate hospitals. The results indicate employees’ in hospitals with higher than U.S. national rates in readmission of heart attack and heart failure perceived the organizational framework of the innovation competencies exist in their hospitals. The worse hospital group had a statistically significant difference in perception for both competencies within this category, essence of innovation and innovation knowledge than the better hospital group. The mean score of the worse group was higher than the mean score of the better group. According to the results, the organizational framework of innovation
competencies is statistically significant in the worse group of hospitals whose readmission rate is higher than the national readmission rates of U.S.

Finding #1

The characteristics from the sample contain results essential to the overall conclusions of the study. The descriptive statistics conclude that demographic data have a statistically significant relationship. A chi-square test was administered to determine if a significant difference exists with the perception of “better and worse” hospital groups participating in the study which resulted in a positive statistically significant difference for all demographic characteristics between the two groups. More participants in the better group participated in the study than in the worse group. The proportional difference among the demographic characteristics may affect the results of the research.

The better hospital group had less experienced employees complete the survey; the group did not indicate a perception of innovation leadership competencies in their organization. This contradicts previous research that states a culture of innovation leadership creates a competitive advantage for businesses (Amabile, 1996; Amabile et al., 1996; Driver, 2001; Hitt & Ireland, 2002). The better hospital group findings could be a cause of newer employees lacking familiarity with the company to provide a critical overview. In addition, the worse hospital group participants in the study were management employees with more experience. Managers and executives could have responded more agreeably to survey questions which could have resulted in more positive outcomes. The worse group reported a stronger perception of innovation leadership in their organization.
Conclusion #1

A number of threats to the internal and external validity in the study could have caused the outcomes. The more a researcher plans for validity, the more accurate inferences can be made from the results. The first internal validity threat to the study is low statistical power validity. The low number of participants in the study can create a false conclusions (Shadish, Cook, & Campbell, 2002). Hospitals have varying numbers of employees meeting the criteria for study participation. Therefore, it is not reasonable for the researcher to claim a definitive number of participants for a statistically significant effect size. However, research illustrates that increasing the statistical power of the two groups, securing an optimal number of participants, will help to make accurate inferences from the results (Shadish et al., 2002).

The researcher recommends future samples meeting a 95% confidence level by increasing the number of participants. A possible 432 hospitals met the study’s criteria for inclusion, 258 were in the better group and 174 were in the worse group. A low number participated. Out of 258 hospitals, three participated in the better group and out of 174 hospitals, two participated in the worse group. Many hospitals denied participation in the current study because survey fatigue was a concern of administration for their employees. Upon analysis of the five participating hospitals, the better group had a potential response of 133 participants and 115 participated (86%) and the worse group had a potential response of 44 participants and 29 participated (66%). Twenty-nine participants from the worse group reflect only 26% of 115 participants from the better group. The two groups are not equal in size according to the number of hospitals and potential respondents.
Another threat to the internal validity of the study is selection. The sample is a vital element to the study (Gall et al., 2005; Martella et al., 1999; Shadish et al., 2002) and the study shows the sample of both groups have different demographic characteristics. When response rate is low, it does not give the researcher a true perception of nonrespondents. Without surveying the nonrespondents, the researcher does not know how different the responses are because there is not a good representation of a balanced sample. Shadish et al. (2002) report that minimizing sample bias creates a more representative sample of the population.

The researcher recommends ensuring a more balanced sample size of the demographic characteristics in future studies to minimize this threat. The sample representation of demographic characteristics of the two groups report different perceptions. The demographic characteristics of the better hospital group reported less experienced employees completing the survey while the worse group had more managers and executives respond to the survey. Future research should have a balance of the demographic categories to ensure the comparability of the groups. By including more participants that are similar in demographic characteristics, results could help researchers to develop clear outcomes based on a balanced demographic sample.

The final threat to internal validity is construct validity which refers to generalizability of the findings. This is a study about psychological constructs of perception (Huck, 2008; Martella et al., 1999; Shadish et al., 2002). The participants were asked to rank their perceptions using a five-point Likert scale. Perception is part of ones personality and the survey research did not provide a clear definition of the construct. Researchers explain that construct validity cannot be determined by a single study;
strength comes from an instrument when replicated within several studies or the result of using another measure in addition to a survey. Having a clear understanding of what the instrument is measuring helps to define a positive or negative correlation while gaining a deeper understanding of the population.

Utilizing different methodologies for this study are recommended for future research to help strengthen the construct validity. Drawing from different research methods could increase the understanding of the study. A qualitative study could help to gain a more humanistic understanding of the perceived culture of innovation leadership. Qualitative research includes documents, interviews, visual texts, and observations. The researchers interpret the documents and capture the perspectives of other humans. The instruments used for that collection in qualitative research is more flexible and semi-structured. Open-ended questions are used in this research method. Qualitative methods analyze and describe the relationship between variables. However, subjectivity is a major concern of qualitative research.

A longitudinal study could help the researcher gain greater access into the culture of hospitals by building greater insights and intimate relationships between the workforce and the complex environment that fosters an innovative culture. Identifying trends across time could add to the depth of understanding of a culture of innovation leadership.

Learning over an extended amount of time about specific processes and tools within an organization would benefit the research adding to the body of knowledge of innovation leadership.

By using qualitative techniques with quantitative techniques researchers could bridge the gap of knowledge for the current study with mixed methods. A combination
of qualitative and quantitative measures would provide a more complete picture of an organization’s innovation leadership. Combining survey data with one-on-one interviews and focus groups would help to define best practices that would add to the research in this area. Incorporating interviews from top managers about best practices of a culture of innovation leadership with participant survey data would help to increase the understanding of the organizational framework of innovation of both better and worse groups of hospitals.

The external threat to validity is the interaction of the causal relationships with units. External validity assist researchers in generalizing the findings to different times, places, or populations (Gall et al., 2005; Martella et al., 1999; Shadish et al., 2002). The researcher wants to make sure that outside of the study that the results can be generalizable to a broader group. One way to ensure results can be generalized is simulate the study in other industries.

This study can aid researchers in focusing on the competencies of a culture of innovation leadership by deploying the study in other industries. The study indicates the challenge of obtaining participation from hospitals. It is recommended to replicate the survey in another industry with a defined measurable outcome within any specific industry. For example, the Florida school system measures each school based on Florida’s Comprehensive Assessment Test (FCAT) scores. The FCAT scores could be used to define measurable outcomes that can be used to help the researcher provide the necessary parameters to define two groups and compare a low performing and a high performing group. Opportunities for replication will allow the researcher to achieve reliable results between two groups that can provide better interpretations regarding a
culture of innovation leadership.

Conclusion #2

With the current state of healthcare reform and the competitive environment of the economy, healthcare is changing. The Patient Protection and Affordable Care Act and Healthcare and Education Reconciliation Act of 2010 cause regulation to the healthcare systems (American Hospital Association [AHA], 2010; Health Reform, 2010). Financial incentives used for hospitals are established as an enhanced performance measure to improve the quality of care within healthcare reform (AHA, 2010; Centers for Medicare and Medicaid Services [CMS], 2007). As a result of the U.S. government’s healthcare reform bills, a negative financial impact on hospitals are caused from higher than normal readmission rates of specific illnesses. Hospitals are making innovative changes to adapt to the pressure and need to remain flexible within the industry (Malloch, 2010; Porter-O’Grady & Malloch, 2009). The current results from the study represent a culture of innovative leadership in healthcare exists within the worse hospital group.

The researcher should be open to the possibilities of a non-statistical reason for the results of the data. The worse group has a higher perception of a culture of innovation leadership which are contradictory to the literature review. According to the literature, the better hospital group should have a higher perception of a culture of innovation leadership. However, knowing that the pending government mandates of financial penalties will take affect in 2013, the worse hospital group could have been proactively focused on tools and processes to improve readmission rates. All U.S. hospitals have known about the new penalties for readmission rates since 2010. It is
understandable that improvements have already been created and deployed within the worse hospital groups foreseeing the realities of financial burdens.

Conclusion

The current research determines a culture of innovation leadership competencies perceived by employees at high-performing and low-performing organizations in healthcare. The study is built on the creativity and innovation literature and a theoretical foundation. Human capital is a key component for organizations today in the current marketplace (Echols, 2008; Fitz-Enz, 2009; Hitt & Ireland, 2002). The study helps organizations remain viable in the marketplace and specifically helps to show healthcare organizations how to leverage their workforce while facing potential threats of financial penalties from newly enacted healthcare laws (AHA, 2010; Hospital Compare, 2011; Health Reform, 2010). To maximize resources means fostering the ability to tap into the human capital of the workforce by assessing a culture of innovation leadership. The research indicates challenges and opportunities for organizations.

Porter-O’Grady & Malloch (2009) state the importance of innovation leadership competencies in order for hospitals to sustain competitive environments and to successfully foster and support new innovative changes that help to deliver quality healthcare services to customers. If a system is not sustainable and does not create innovative conditions conducive towards creative capacities, there is limited growth and organizations will not be able to clarify solutions within complex organizational environments. Research reveals healthcare leaders continually need new and innovative processes to effectively provide quality patient care (Malloch, 2010; Porter-O’Grady, 2010). With literature to support the importance of a culture of innovation leadership in
healthcare as evidenced by the 2013 government mandates of imposing penalties with readmission rates, a culture of innovation leadership may assist the organization to remain competitive within the healthcare industry.
## APPENDIX A

### SURVEY INSTRUMENT

#### CULTURE SURVEY

Circle your level of agreement with one (1) being the never, two (2) almost never, three (3) sometimes, four (4) often, and five (5) always.

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Almost Never</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. My job description addresses how the role of innovative problems solving will benefit the organization.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. My organization encourages innovative suggestions from employees.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I get timely feedback from my supervisor or leader on possible ideas I have developed for work related problems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. When I have innovative ideas, my organization has a formal process available for me to submit the ideas.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I have taken a training class on innovative problem solving offered by my organization.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. My organization has a formal process in place to seek ideas and innovative solutions from employees.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. When faced with a work related problem, I come up with multiple ideas.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. My organization values the knowledge of employees by actively documenting each employee’s unique skills. For example, CPR and the ability to speak multiple languages.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. My supervisor or leader gives me timely feedback on possible ideas I have developed for work related problems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. When working as a group, the team asks for input from everyone to solve work related problems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Never</td>
<td>Almost Never</td>
<td>Sometimes</td>
<td>Often</td>
<td>Always</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-------</td>
<td>--------------</td>
<td>-----------</td>
<td>-------</td>
<td>--------</td>
</tr>
<tr>
<td>11. When solving work related problems my supervisor listens to my input.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. New knowledge and skills I develop on the job are actively documented by my organization.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. The success of my organization depends on innovative thinking from employees.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. I come up with multiple ideas when faced with a work related problem.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. The team asks for input from everyone when working as a group to solve work related problems.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. When I determine how my innovative solutions will function within our organization, I present the solution to my supervisor(s).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. My organization has developed a formal process for employees to submit innovative ideas.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18. My organization supplies employees with a formal problem solving process to support innovation.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19. My immediate supervisor encourages me to use innovative processes within my job function at work.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20. To develop better solutions in the organization my department works as a team.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>21. By actively documenting each employee’s unique skills like certifications and bilingual, my organization values the knowledge of employees. For example, CPR and the ability to speak multiple languages.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>22. Having employees who are innovative thinkers plays a vital role in the success of my organization.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>23. To seek ideas and innovative solutions from employees, my organization has a formal process in place.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Question</td>
<td>Never</td>
<td>Almost</td>
<td>Never</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------</td>
<td>--------</td>
<td>-------</td>
<td>-----------</td>
<td>-------</td>
</tr>
<tr>
<td>24. My supervisor listens to my input on solving work related problems.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>25. Training on the process of creative idea generation is provided to employees in my organization.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>26. The role of innovative problem solving and how it will benefit the organization is addressed in my job description.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>27. I am encouraged to use innovative processes within my job function at work by my immediate supervisor.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>28. In my organization, I have taken a training class on the innovative problem solving.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>29. I consider all aspects of how the idea will impact the organization or customer when I come up with potential solutions to work related problems.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>30. I present to my supervisor(s) how my innovative solutions will function within our organization.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>31. A formal problem solving process supporting innovation is supplied by my organization.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>32. My department works as a team to develop better solutions in the organization.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>33. When I come up with potential solutions to work related problems, I consider all aspects of how the idea will impact the organization or customer.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>34. My organization trains employees on the process of creative idea generation.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>35. My organization actively documents new knowledge and skills I develop on the job.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>36. Innovative problem solving is encouraged from employees in my organization.</td>
<td>1</td>
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</tbody>
</table>
October 7, 2011

Ms. Lisa Zankman
Human Resource Director
Beth Israel Deaconess Medical Center
330 Brookline Ave
Boston, MA  02215
Re: Doctoral Candidate Survey

Hello Ms. Zankman,

Give me a chance to survey your clinical staff that actively care for heart attack and heart failure patients and I’ll give you strategies to potentially lower your readmission rates. I am a doctoral candidate at The University of Southern Mississippi conducting research on assessing a culture of innovation leadership in health care settings. I am studying the relationship between a culture of innovation leadership and readmission rates in hospitals. I need a select few of your employees to participate in a confidential and anonymous ten-minute online or paper-based, 36-question survey during the winter of 2011.

I am asking for your commitment to allow me to ask a handful of hospital employees to participate. Your support is crucial to identify strategies to handle rapidly changing healthcare mandates and helping find ways to increase adaptability in the workplace.

For participating you will receive:

• New strategies to potentially lower your readmission rates.
• New strategies to help avoid fines and save the hospital money.
• New strategies to improve communication between the patient, the hospital, and the employees.
• A copy of the final research report.
• A customized organizational profile based on your employee perceptions data.

I would like to report your participation agreement to my dissertation committee by September 1, 2011. I look forward to working with you and am extremely hopeful of your agreement to participate. This important research depends on your participation. I am available for additional questions at the contact information below. Thank you for your time and your consideration. Remember, the survey will only involve a small number of employees, those that actively care for heart attack and heart failure patients.

Sincerely,

Cheryl Kirby
Ph.D. Candidate at The University of Southern Mississippi
Voice: 850.602.1854
Email: cheryl.kirby@eagles.usm.edu
Subject Title: A Human Capital Development Survey Needs YOU!

Hello NAME,

In a few days you will receive a survey from Cheryl Kirby, a doctoral student in Human Capital Development at The University of Southern Mississippi. The proposed study addresses the lack of research in the area of culture of innovation leadership. The competitive environment of the economy fuels changes in the healthcare industry and this has lead to healthcare re-inventing itself in order to survive in the current state of healthcare reform. The perception of encouragement for a culture of innovation leadership has been identified as a key to the future of success in organizations. The first 25 participants will receive a $10 Visa gift card and all participants will receive a copy of the survey results.

Your participation in this research is completely voluntary and the researcher guarantees the confidentiality of the data. The Institutional Review Board (IRB) from The University of Southern Mississippi has approved the research. If you have any questions concerning the research from the perspective of human rights, you may contact the Chair of the Institutional Review Board at The University of Southern Mississippi, PO BOX 5147, Hattiesburg, MS, 39406, (601) 266-6820. You have been authorized to complete this survey during working hours.

Should you have any questions about this research or how it is being conducted, please feel free to contact Cheryl Kirby at: cheryl.kirby@eagles.usm.edu or 850.602.1854.

Survey Link: http://www.surveylink.com

Thank you in advance for your participation.

Sincerely,

Cheryl Kirby  
Ph.D. Candidate at The University of Southern Mississippi  
Voice: 850.602.1854  
Email: cheryl.kirby@eagles.usm.edu
Subject Title: The Human Capital Development Survey!

Hello Mr. or Mrs. XXX,

My name is Cheryl Kirby. I am a doctoral candidate in Human Capital Development at The University of Southern Mississippi.

The research is a part of a doctoral dissertation that is designed to assess a culture of innovation leadership in an organization and the impact it has on the workforce. Your participation in this survey signifies that you have read this email message before clicking on the survey link below. By completing the survey, you agree to participate in baseline information so that decisions can be made regarding a culture of innovation leadership in the workplace and the impact it has on the workforce.

The Institutional Review Board (IRB) from The University of Southern Mississippi has approved the research. If you have any questions concerning the research from the perspective of human rights, you may contact the Chair of the Institutional Review Board at The University of Southern Mississippi, PO BOX 5147, Hattiesburg, MS, 39406, (601) 266-6820. You have been authorized by your organization to complete this survey during working hours.

By completing the survey you agree to participate in this research. You have read and understand the information written above and you understand that participation is voluntary. If you choose to refuse or withdrawal from participating, you will not be penalized in any way. The first 25 participants will receive a $10 Visa gift card and all participants will receive a copy of the survey results.

The researcher guarantees the confidentiality of the data. The data will be analyzed and aggregated to provide a general assessment to your hospital. You will not receive any compensation for participation. The survey takes about 10 minutes and you have until May 5, 2011 to participate in the survey.

Thank you in advance for your consideration and participation. Your input is crucial to the success of the project. Should you have any questions about this research or how it is being conducted, please feel free to contact Cheryl Kirby at: cheryl.kirby@eagles.usm.edu or 850.602.1854.

Survey Link: http://www.surveylink.com

Sincerely,

Cheryl Kirby
Ph.D. Candidate at The University of Southern Mississippi
Voice: 850.602.1854
Email: cheryl.kirby@eagles.usm.edu
APPENDIX E

THE SURVEY THANK YOU EMAIL

Subject Title: Thank You for Participating in The Human Capital Development Survey!

Hello XXX,

I would like to thank everyone involved who has taken the time to fill out the survey assessing a culture of innovation leadership and the impact it has on the workforce. If you have not filled out the 10-minute survey, you still have time. I have attached the link below. The first 25 participants will receive a $10 Visa gift card and all participants will receive a copy of the survey results.

By completing the survey you agree to participate in this research. You have read and understand the information written above and you understand that participation is voluntary. If you choose to refuse or withdrawal from participating, you will not be penalized in any way.

The Institutional Review Board (IRB) from The University of Southern Mississippi has approved the research. If you have any questions concerning the research from the perspective of human rights, you may contact the Chair of the Institutional Review Board at The University of Southern Mississippi, PO BOX 5147, Hattiesburg, MS, 39406, (601) 266-6820. You have been authorized to complete this survey during working hours.

Should you have any questions about this research or how it is being conducted, please feel free to contact Cheryl Kirby at: cheryl.kirby@eagles.usm.edu or 850.602.1854.

Survey Link: http://www.surveylink.com

Sincerely,

Cheryl Kirby
Ph.D. Candidate at The University of Southern Mississippi
Voice: 850.602.1854
Email: cheryl.kirby@eagles.usm.edu
APPENDIX F

THE REPLACEMENT SURVEY EMAIL

Subject Title: There is still time left to take a culture of innovation leadership survey!

Hello XXX,

Five weeks ago, I sent you communication that explains the research I am conducting on innovation leadership in the workplace. Thank you to everyone who completed the survey! If you haven’t, you still have time. It only takes 10 minutes and you are authorized by your facility to take the survey during work hours.

By completing the survey you agree to participate in this research. You have read and understand the information written above and you understand that participation is voluntary. If you choose to refuse or withdrawal from participating, you will not be penalized in any way. The first 25 participants will receive a $10 Visa gift card and all participants will receive a copy of the survey results.

The Institutional Review Board (IRB) from The University of Southern Mississippi has approved the research. If you have any questions concerning the research from the perspective of human rights, you may contact the Chair of the Institutional Review Board at The University of Southern Mississippi, PO BOX 5147, Hattiesburg, MS, 39406, (601) 266-6820.

Should you have any questions about this research or how it is being conducted, please feel free to contact Cheryl Kirby at: cheryl.kirby@eagles.usm.edu or 850.602.1854.

Survey Link: http://www.surveylink.com

Sincerely,

Cheryl Kirby
Ph.D. Candidate at The University of Southern Mississippi
Voice: 850.602.1854
Email: cheryl.kirby@eagles.usm.edu
APPENDIX G

THE FINAL CONTACT EMAIL

Subject Title: You only have one week left!

Hello XXX,

Your input is crucial to the success of the culture of innovation leadership survey! The availability of the survey is coming to a close and if you haven’t done so already, I encourage you to fill out the survey on a culture of innovation leadership. In order for maximized participation, I am writing to you one last time. Thank you to those who have already filled out the survey. If you have not, I would like to encourage you to make an impact of the data collected by providing your feedback. The survey only takes 10 minutes and you have been authorized to complete the survey during work hours. The first 25 participants will receive a $10 Visa gift card and all participants will receive a copy of the survey results.

Keep in mind, by completing the survey you agree to participate in this research. You have read and understand the information written above and you understand that participation is voluntary. If you choose to refuse or withdrawal from participating, you will not be penalized in any way.

The Institutional Review Board (IRB) from The University of Southern Mississippi has approved the research. If you have any questions concerning the research from the perspective of human rights, you may contact the Chair of the Institutional Review Board at The University of Southern Mississippi, PO BOX 5147, Hattiesburg, MS, 39406, (601) 266-6820.

The data being collected will provide much needed feedback in the research area of human capital development and creativity and innovation in the workplace. Should you have any questions about this research or how it is being conducted, please feel free to contact Cheryl Kirby at: cheryl.kirby@eagles.usm.edu or 850.602.1854.

Survey Link: http://www.surveylink.com

Sincerely,

Cheryl Kirby
Ph.D. Candidate at The University of Southern Mississippi
Voice: 850.602.1854
Email: cheryl.kirby@eagles.usm.edu
APPENDIX H

IRB COMMITTEE ACTION

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.

Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 11102701
PROJECT TITLE: Assessing a Culture of Innovation Leadership on the Human Capital in Healthcare

PROJECT TYPE: Dissertation
RESEARCHER(S): Cheryl Kirby
COLLEGE/DIVISION: College of Science & Technology
DEPARTMENT: Economic and Workforce Development
FUNDING AGENCY: N/A
IRB COMMITTEE ACTION: Expedited Review Approval
PERIOD OF PROJECT APPROVAL: 11/07/2011 to 11/06/2012

Lawrence A. Hosman, Ph.D.
Institutional Review Board Chair
REFERENCES


