Spring 5-18-2023

Exploring and Identifying Healthcare Leaders Competencies Required for Effective Decision Making in a High Velocity Environment to Achieve Sustainability Under the Regulatory Compliance Tenets of the Patient Protection Affordable Care Act

Sylvester Foote
sylvester.foote@student.shu.edu

“Exploring and Identifying Healthcare Leaders Competencies Required for Effective Decision Making in a High Velocity Environment to Achieve Sustainability Under the Regulatory Compliance Tenets of the Patient Protection Affordable Care Act.”

By

Sylvester Foote

Dissertation Committee:

Deborah A. DeLuca, M.S., JD (Chair)

Genevieve Zipp, PT, EdD, FNAP

Terrence F. Cahill, Ed.D., LFACHE

Glen Beamer, Ph.D.

Submitted in partial fulfillment of the requirement for the degree of

Doctor of Philosophy in Health Sciences

Seton Hall University, 2023

Health and Medical Sciences

APPROVAL FOR SUCCESSFUL DEFENSE

Sylvester Foote has successfully defended and made the required modifications to the text of the doctoral dissertation for the Ph.D.
during this Spring, 2023

DISSERTATION COMMITTEE

Deborah A. Deluca, M.S., JD

Mentor Date

Genevieve Zipp, PT, EdD, FNAP

Committee Member Date

Terence F. Cahill, EdD, LFACHE

Committee Member Date

Glen Beamer, Ph.D.

Committee Member Date

ACKNOWLEDGMENTS

There are many heroes to whom I am most grateful for their support and assistance throughout this journey towards the completion of this Ph.D., which consisted of many detours, flat tires, and numerous abrupt braking along the way.

To my dissertation committee members, Dr. Zipp, Dr. Cahill, and Dr. Beamer, your support and guidance will always be the highlight of this process. Thank you for everything you have done to make this possible and for sharing your knowledge and insights with me.

Dr. Deluca, my Chair, my Class Professor, my Advisor, my Life Coach, my Mentor, and my dear Friend, you are the most amazing Professor any student could ever meet. This journey from day one has always consisted of two participants: you, and me. Thanks for teaching me how to look at the world differently by using scientific methods and always looking at the bigger picture. This research would not have been possible had it not been for your knowledge, persistence, tenacity, and confidence in me, even when I doubted myself.

To my dad, Austin Foote, thanks for that motivational and ever therapeutic "kick" to finish what I started when I wanted to quit. Your stern saying, "just get it done!" echoes in my head even after its completion. Thanks Dad, I love you!

My dearest friends who supported me during this turbulent journey, Dr. Coleen Kumar, Dr. Denyse Addison, Winston Pilgrim, Keyan Jordan and Carol Caraway. Your friendship is priceless.

Christina Collado, thanks for always supplying free IT services. Pamela Foote, my stepmom, thanks for being Editor-In-Chief, and to my Hackensack Family, Dr. Claudia Douglas,

and Cole McCoy thanks for holding my hand through the HMH-IRB process, the statistical analysis and for providing Oxygen when I couldn’t breathe.

Last, but not least, I would like to thank my Delphi Panelist for volunteering their time to provide advice and feedback, which enabled the creation and validity of my survey instrument.

Dedication

This dissertation research is in memory of my loving Mother, Gwendolyn Doreen Matthews, whose value for Higher Education led me to this path. Despite her physical absence, there has never been a moment when her support, love and motivation were not felt or heard, especially when I would fall along the way, her words of encouragement were enough to pick me up and keep me going.

Mom, you remain the love of my life, and my foundation. From whichever direction you are looking, do know that this Ph.D. is for you!

ABSTRACT

"Exploring and Identifying Healthcare Leaders Competencies Required for Effective Decision Making in a High Velocity Environment to Achieve Sustainability Under the Regulatory Compliance Tenets of the Patient Protection Affordable Care Act."

Sylvester Foote

Seton Hall University, 2023

Dissertation Chair: Dr. Deborah DeLuca, JD., MS.

Background and Purpose of the Study: Healthcare organizations face challenges in efficiently accommodating increased participant demands with limited resources and capacity. The modern reimbursement environment prioritized the maximization of operational efficiency and the reduction of unnecessary cost (i.e., waste) while maintaining or improving quality. As healthcare organizations adapt, significant pressures are placed on leaders to make difficult operational and budgetary decisions (Hamrock, et al., 2013).

As healthcare goes through this transformation within its high velocity environment defined as environments in which there is rapid and discontinuous change in demand, competitors, technology and /or regulations, such that information is often inaccurate, unavailable, or obsolete (Bourgeois & Eisenhardt, 1988). It leaves to question, "How do healthcare executives make decisions? In addition, what competencies are now required in this high velocity environment to make such decisions which will yield positive outcomes, being sustainability of their Institutions.

The purpose of this study is threefold; the first is to create a measurement tool which identifies the healthcare competencies required by healthcare leaders in a high velocity environment to

achieve sustainability, using the Delphi Technique. Secondly, to then assess the reliability and construct validity of the new tool in the population of interest using Cronbach's Alpha and Exploratory Factor Analysis and third, to use the new tool in the population to identify, understand and measure the projected health care leadership competencies required by healthcare leaders to make effective decisions in a high velocity yielding organizational stability.

Method: This study utilized a mixed methods of both quantitative and qualitative methodology with a descriptive, exploratory, cross-sectional, and correlational research design to look at decision making by healthcare leaders with five competencies being leadership, knowledge of healthcare environment, communication and relationship management, professionalism, and business skills and knowledge.

Optional open-ended questions were asked with every survey question to provide some contextual meaning, hence enabling the Primary Investigator to identify themes. A sample size of 231 healthcare leaders were attained for this study.

Results: The High Velocity Decision Making survey tool reliability had a Cronbach alpha of 0.834, being a "good" internal consistency, George and Mallery (2010). The exploratory factor analysis yields a KMO value of 0.875 being "meritorious" Tabacchrick and Fiddel (2001).

Conclusion: The research shows that there is no correlation between the acquisition of the constructs to sustainability in the organization and there are no significant differences between the middle managers/leaders and senior/executive leaders decision making in a high velocity environment. However, there is a positive correlation between the constructs and decision making in a high velocity environment and there is a significant contribution of the constructs between both middle management and senior leaders decision making in a high velocity

environment, while the competency of knowledge of the environment had the highest impact on decision-making in a high velocity environment.

Keywords: high velocity environment, competency, decision-making, sustainability, regulatory compliance, Patient Protection Affordable Care Act.

TABLE OF CONTENTS

CHAPTER 2

CHAPTER 3

CHAPTER 4

LIST OF TABLES

LIST OF FIGURES

Chapter 1

Introduction

Problem Statement

With the constant increase in prices for employment, technology, pharmaceuticals, energy, and the cost factors needed to stay within the regulatory compliance to keep institutions' "doors open," renders it tremendously difficult to make decisions that will contribute to the financial sustainability of most healthcare institutions. Healthcare leaders must possess a certain level of competency to function in this rapid paced environment which is being termed as a High Velocity Environment (Snowden & Boone, 2007).

As with every business, one wrong decision could break you; hence the goal of sustaining financial productivity is key for the longevity of all healthcare organizations, every individual to whom it gainfully employs, and quality of care service lines being delivered. Simply put, no margin = no mission.

Significance

As stated previously, it is difficult to sustain the financial stability of a healthcare institution with the constant increase in prices for employment, technology, pharmaceuticals, energy, along with the cost factors needed to stay within the regulatory compliance required to keep institutions functioning successfully. Healthcare leaders must possess certain competencies, as they are constantly pushed to make decisions that will yield organizational sustainability in a high velocity environment under the regulatory compliance tenets of the Patient Protection and Affordable Care Act (PPACA).

There is little evidence in the literature and no measurement tool to determine the competencies a leader is required to possess to make such decisions in a highly evolving environment.

Purpose of the Study

The purpose of the study is threefold:

1. To develop a measurement tool called "The High Velocity Decision Making (HVDM)" survey tool using the Delphi survey technique (Hasson et al., 2000). Establishing Face and Content validity.
2. To test the reliability of the HVDM survey tool in the population of interest using Cronbach's Alpha on all respondents thus establishing internal consistency reliability of the instrument tool (Cohen, 1988) and Exploratory Factor Analysis (EFA) to establish construct validity for each domain question to identify the factors and ensure that there is a relationship between the identified factors (Tabachnick & Fiddell, 2001).
3. To use The HVDM survey tool in the population to identify, understand and measure the projected healthcare leadership competencies required by healthcare leaders to make effective decisions in high velocity yielding organizational sustainability.

Variables

According to American College of HealthCare Executives (2017), there are five competencies relevant to management and leadership which are required for tasks typically performed, regardless of work setting or years of experience. For any institution to achieve sustainability in a constantly evolving environment, it is **assumed** that these competencies listed below needs to be utilized:

1. Communication and relationship management
2. Professionalism
3. Leadership
4. Knowledge of the healthcare environment
5. Business skills and knowledge

These five variables/required competencies for decision making will be the five domains which will be researched to see which of these competencies is required by healthcare leaders for decision making in a high velocity environment to achieve sustainability of the organization.

Research Questions

RQ1a: Does the acquisition of Communication as a competency influence the sustainability of the organization?

RQ1b: Does the acquisition of Professionalism as a competency, influence the sustainability of the organization?

RQ1c: Does the acquisition of Business Skills as a competency influence the sustainability of the organization?

RQ1d: Does the acquisition of Perceived Knowledge of the Environment as a competency influence the sustainability of the organization?

RQ1e: Does the acquisition of Leadership as a competency influence the sustainability of the Organization?

RQ2a: Is there a relationship between Communication and making effective decisions in a high velocity environment?

RQ2b: Is there a relationship between Professionalism and making effective decisions in a high velocity environment?

RQ2c: Is there a relationship between Healthcare Business Skills and making effective decisions in a high velocity environment?

RQ2d: Is there a relationship between the perceived Knowledge of the Environment and making effective decisions in a high velocity environment?

RQ2e: Is there a relationship between leadership and making effective decisions in a high velocity environment?

RQ3a: Where a positive relationship has been identified, what is the difference of the level of Communication with decision-making?

RQ3b: Where a positive relationship has been identified, what is the difference of the level of Professionalism with decision-making?

RQ3c: Where a positive relationship has been identified, what is the difference between the level of Business Skills and decision-making?

RQ3d: Where a positive relationship has been identified, what is the difference between the level of perceived Knowledge of Environment with decision-making?

RQ3e: Where a positive relationship has been identified, the difference will be assessed to identify the difference between the level of Leadership with decision-making?

RQ4: Is there a difference between the middle level managers/leaders and senior/executive leaders in decision making in a high velocity environment?

RQ5: What are the relative contributions of each of the 5 competencies on the middle level management and senior/executive leaders' decision making in a high velocity environment.

Research Hypothesis

H1a: There is a relationship between Communication and organization sustainability such that, the higher the score of communication the higher the competency for decision-making in a high velocity environment.

H1b: There is a relationship between Professionalism and organization sustainability such that, the higher the score of Professionalism then the higher the competency for decision-making in a high velocity environment.

H1c: There is a relationship between Business Skills and organization sustainability such that, the higher the score of Business Skills then the higher the competency for decision-making in a high velocity environment.

H1d: There is a relationship between Perceived Knowledge of the Environment and organization sustainability such that, the higher the score of perceived Knowledge of the Environment then the higher the competency for decision-making in a high velocity environment.

H1e: There is a relationship between Leadership and organization sustainability such that, the higher the score of Leadership then the higher the competency for decision-making in a high velocity environment.

H2a: There is a positive relationship between a leader's Communication and effective decision making in a high velocity environment.

H2b: There is a positive relationship between a leader's Professionalism and effective decision making in a high velocity environment.

H2c: There is a positive relationship between a leader's Business Skill and effective decision making in a high velocity environment.

H2d: There is a positive relationship between a leader's knowledge of healthcare environment and effective decision making in a high velocity environment.

H2e: There is a positive relationship between a leader's leadership and effective decision making in a high velocity environment.

H3a: There is a significant difference in the level of Communication with making decisions in a high velocity environment.

H3b: There is a significant difference in the level of Professionalism with making decisions in a high velocity environment.

H3c: There is a significant difference in the level of Business Skills with making decisions in a high velocity environment.

H3d: There is a significant difference in the level of perceived Knowledge of Environment with making decisions in a high velocity environment.

H3e: There is a significant difference in the level of Leadership with making decisions in a high velocity environment.

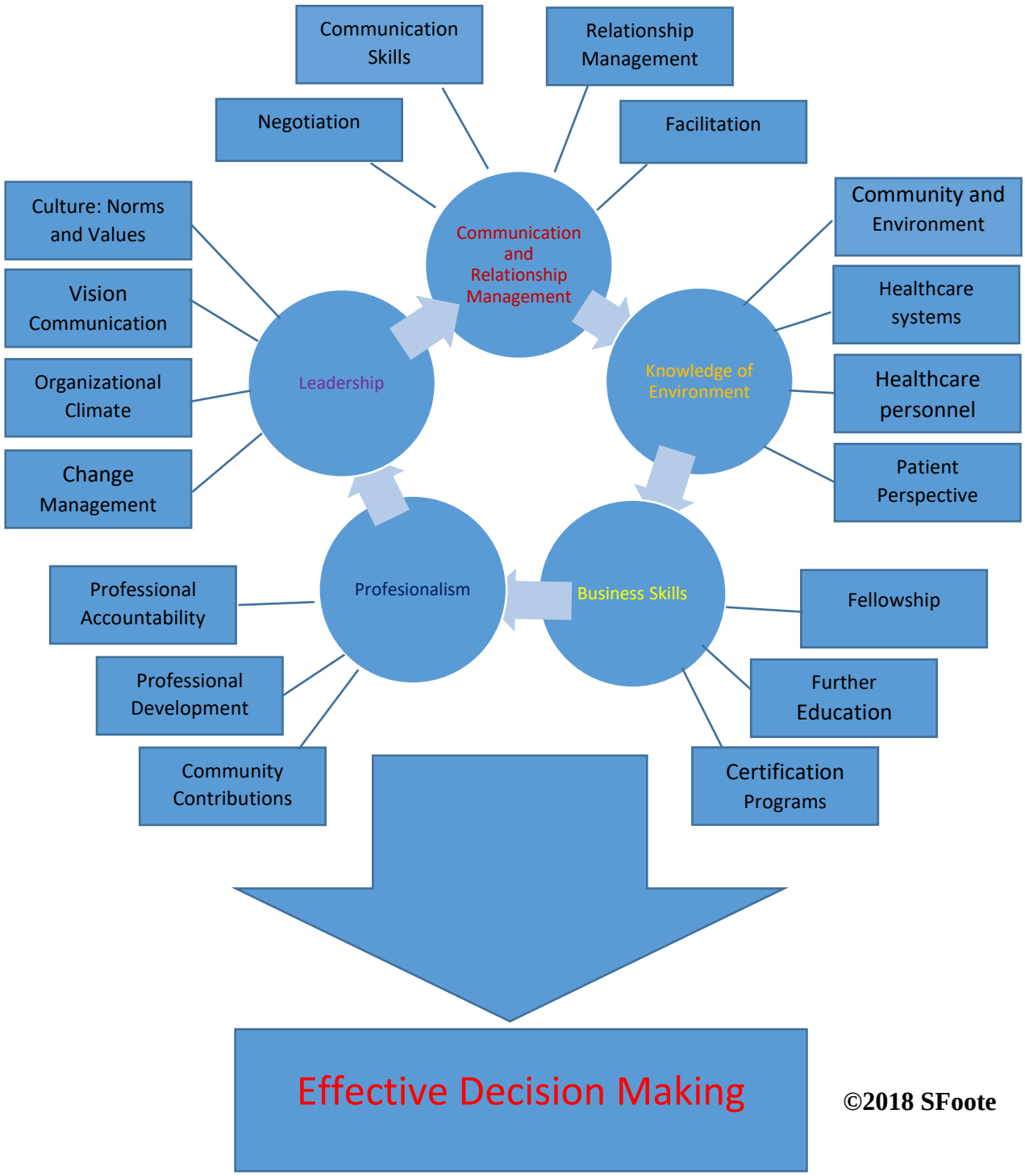
H4: There is a difference between the middle level management/ leaders and senior/executive leaders in decision making in a high velocity environment.

H5: There is a significant relevant contribution of each of the 5 competencies between the middle level management/leaders and senior/executive leaders in decision making in a high velocity environment.

Conceptual Framework and operational Definitions

Figure 1

Initial Conceptual Framework-Composition of HDVM© Survey Tool



©2018 SFoote

Note. The conceptual framework featuring the 5 constructs with its sub-constructs which was used to create questions for the survey measurement tool.

The conceptual framework that will frame the study is the Health Leadership Assessment Competency Model from the American College of Healthcare Executive. (ACHE), 2017. The competency model is comprised of a subset relevant to management and leadership tasks typically performed regardless of work setting or years of experience and identifies the gaps in skills necessary for optimizing performance and being utilized by healthcare leaders in a high velocity environment to make effective decisions. Decision making is defined as a task that is undertaken through organizing processes that are cognitive but also social/cultural, political, and emotional, and in which the social construction of leadership and context are inseparable individual and collective undertakings (Fulop & Mark, 2013).

The competencies are categorized into five critical domains, and each consist of its pertinent sub-constructs as shown in Figure 1, and are listed as follows with its operational definitions:

1. Communication and relationship management:

the ability to communicate clearly and concisely with internal and external customers, establish and maintain relations and facilitate constructive interactions with individuals and groups (ACHE, 2017).

Within the critical domain are three subsets as follows:

a. Relationship management:

In the management of organizations effectiveness is achieved when organizations attain their goals, but goals must be appropriate in relation to the organization's environment. If not,

strategic constituencies within that environment will keep it from achieving its goals and, ultimately, its mission. The healthier the relationships determine the effectiveness of the public relations function with the organization (Stroh & Jaatinen, 2001).

b. Communication skills

To achieve clear and open communication, healthcare professionals can apply several techniques to help break down communication barriers. When applied consistently, these techniques can go a long way toward resolving differences related to managing a diverse staff and providing service to a multicultural customer base.

Several communication techniques can be applied by those who work in healthcare settings to improve cross-cultural communications with patients or staff. These techniques include:

Writing down, in simple English, the arrangements that have been agreed upon: A written document will enable the individual to have the message translated by English-speaking family members or friends without admitting to a lack of understanding.

Watching for nonverbal signs of a lack of understanding: Constant nodding of the head and smiling, as well as laughing self-consciously, can be clues that the message was not understood.

Accepting responsibility for a lack of understanding: Such an acknowledgment encourages individuals to ask questions, sparing them potential embarrassment. Watching for vague responses such as, "I think I understand," or "I'm sure I can figure it out." Tentativeness often can be interpreted as, "I do not understand, but do not want to come right out and say so"(Thiederman, 2003).

c. Facilitation and negotiation skills

Negotiation occurs at, and across, all levels and types of organizations. Negotiations may involve a formal process, as in the case where individuals and groups negotiate for contracts or for the resolution of grievances. In a broader sense, however, negotiation is concerned with individuals' attempts to acquire organizational privileges and resources. These privileges and resources are not always tangible or distributed equitably in organizations. Negotiating is a fundamental skill that must be acquired by any individual seeking to occupy a position of power, status, and responsibility. As greater numbers of women advance into upper-level positions in organizations it is increasingly important to understand how gender impacts the behaviors, processes, and outcomes of negotiation (Stuhlmacher & Walters, 1999).

2. Leadership: the ability to inspire individual and organizational excellence, create a shared vision and successfully manage change to attain the organization's strategic ends and successful performance, sustainability (ACHE, 2017).

a. Leadership skills and behavior

Leadership is essential to meeting the 21st century challenges of Effective American healthcare (Dwyer, 2010). The industry is experiencing a leadership gap that can in part be filled by focusing on the most effective forms of leadership which many believe can be found within the tenets of transformational leadership (Luthans et al., 2007). Based on this, this study will limit its leadership skills and behavior to the leadership style of transformational leadership, as it best fits the requirements of a leader in a high velocity environment.

b. Organizational climate and culture

Organization culture is usually created through a vision by an individual who has a vision, goals, beliefs, and assumptions about how things should be (Schein, 2004). Such beliefs are imposed on selecting individuals based on the similarity of their thoughts and values. What it does is produce compliance in the followers to do what the leader asks of them (Schein, 2004). If the resulting behavior leads to success-in other words, the group accomplishes its task, and the members feel good about their relationships to each other - the founder's beliefs and values will be reinforced and be recognized as shared (Banutu-Gomez, 2011).

c. Communicating vision

The leader’s ability to powerfully articulate a compelling and viable vision is critical for initiating organizational change by enhancing followers' openness toward change, collective efficacy to radically transform the status quo, and trust in the leader's vision. In short, the effectiveness of a leader's visionary behavior may be viewed, in part, as the magnitude of organizational changes that are facilitated in the organization (Banutu-Gomez, 2011).

d. Managing change

According to O’Reilly and Caldwell (1991), there are six tactics that can be used by change agents in dealing with change resistance:

Education and Communication -Through communication with employees, change agents can help them see the logic of a change through education.

Participation - Before changes are implemented, engagement of individuals (particularly those most resistant), may encourage participation in the decision-making process.

Facilitation and Support - Change agents can offer numerous supportive efforts to reduce change resistance in organizations. When citizens' fear and anxiety are high, the organization must practice reconciliation to facilitate adjustment in a positive democratic process.

Negotiation - This is another way for the change agent to deal with potential resistance to change, which can be done through the exchange of something of value for a lessening of the resistance. For example, release time for participation in the project.

Manipulation and Cooptation - Manipulation refers to covert influence attempts. Twisting facts to make them appear more attractive, withholding undesirable information, and creating false rumors to get citizens to accept a change are examples of manipulation. Cooptation is a form of both manipulation and participation. It seeks to "buy off" the leaders of a resistance group by giving them a key role in the change decision. The leaders' advice is sought, not to seek a better decision, but to get their endorsement.

3. Professionalism: the ability to align personal and organizational conduct with ethical and professional standards that include a responsibility to the patient and community, a service orientation, and a commitment to lifelong learning and improvement (ACHE, 2017)

a. Personal and professional accountability

Accountability is defined as the implicit or explicit expectation that one may be called on to justify one's beliefs, feelings, and actions to others (DeCremer & Dijk, 2009). Accountability in health care, Ezekiel and Linda Emanuel characterize accountability as the procedure and process by which one party provides a justification and is held responsible for its actions by another party who has an interest in the action (DeCremer & Dijk, 2009). The authors classify the sites of accountability (physicians, physician organizations, hospitals, managed care plans, and so on),

the domains of accountability (competence, legal and ethical conduct, financial performance, access, public health, and community benefit), and the procedures of accountability (evaluation of adherence to specific criteria and dissemination of information about the evaluation), (DeCremer & Dijk, 2009).

b. Professional development and lifelong learning

Professional development refers to a constant commitment to maintain one's knowledge and skill base. An institutional culture that encourages professional development must be created.

Culture is the sum of the beliefs and values that shape an organization (Nelson, 2006). Culture can dictate how work is completed. An organization's culture that values professional development is essential (Bally, 2007). For a health care institution to create a culture of professional development, all stakeholders must agree that such a culture has value. Also, an infrastructure must be created to support this culture. Professional development in the hospital setting assumes a partnership between the institution and the individual that promotes lifelong learning. Professional development activities can enhance knowledge and ensure that skills and abilities remain current and relevant. Effective professional development activities are self-motivating and valued by individuals (Cooper, 2009).

c. Contributions to the community and profession

Each of these leaders, in his or her own way, is making substantial contributions to the evolution of the entire industry, to this goal of greater professionalization. A persistent debate among planners - and, increasingly, on Capitol Hill - is how to turn the industry into a formally recognized profession with the kind of clout, credentials and protections afforded to the medical and legal fields. The answer to that question will come only over time (Marsh, 2012).

4. Knowledge of the healthcare environment: the understanding of the healthcare system and the environment in which healthcare managers and providers function (ACHE, 2017).

a. Healthcare systems and organizations

Healthcare organizations in the United States participate in a variety of forms of organizational integration, a phenomenon that began in the 1970s. In recent years, however, the level of integration among many of them has significantly intensified. The most extensively integrated organizations are integrated delivery systems (IDSs) (also referred to interchangeably as organized delivery systems or integrated delivery networks in the emerging literature on this subject). Each of these highly integrated systems or networks of interconnected healthcare organizations distinguishes itself by the fact that it "provides or arranges to provide a coordinated continuum of services to a defined population and is willing to be held clinically and fiscally accountable for the outcomes and the health status of the population served" (Shortell et al. 1996, p. 7).

b. Healthcare personnel

The combined pressures of a shrinking work force, an aging population, changing social attitudes toward work, financial constraints, and public perception of healthcare have contributed to a growing personnel problem for healthcare organizations across the country. In fact, decreasing job satisfaction among healthcare employees has them headed for the doors in search of nonhospital jobs that can offer flexible hours, more opportunities, equal or better pay, and less stress. Without enough personnel, healthcare organizations will not be able to meet the needs of their communities. And the need for healthcare services will continue to grow as the Baby Boomers age (Wolfe, 2001).

c. The patient’s perspective

A patient perspective based on a grounded theory study (Wilde et al., 1993): The model stipulates that patients' perceptions of what constitutes quality of care are formed by their encounters with an existing care structure and by their systems of norms, expectations, and experiences.

d. The community and the environment

Assessing the health of a community is an essential public health core function, and perhaps the most important component of community health planning (Lewis, 2006). Research has shown that the social environment is important in fostering and strengthening overall community action for health. Community assessments are used to identify and prioritize resources and to guide community health planning. Identifying need is also necessary to target and maximize services within the community (Lewis, 2006).

5. Business skills and knowledge: the ability to apply business principles, including systems thinking, to the healthcare environment (ACHE, 2017). There are 8 business skills identified which is required to be used in a healthcare environment and they are:

a. General management

b. financial management

c. Human resources management

d. Organizational dynamics and governance

e. Strategic planning and marketing

f. Information management

g. Risk management

h. Quality improvement

Theoretical Framework:

Three theories were adopted in the theoretical framework which were used to guide the creation of the survey tool. Figure 2, shown below explains the three theories being used and the relevance of the theoretical framework to decision making by healthcare leaders in a high velocity environment. The three featured theories are:

1. Cynefin Framework, by Snowden and Boone (2007): This theory is used to make decisions in a high velocity environment and the actions required by the leader in each domain. In this framework, there are five domains of which each domain requires different actions by the decision maker as shown in figure 2. Effective leaders learn to shift their decision-making styles to match changing business environments. The domains being Simple, Complicated, Complex and Chaotic, and disorder. However, the disorder domain makes it difficult to recognize when one is in a high velocity environment and who else might be there. The way out of this domain as multiple perspectives competes for prominence; leaders need to breakdown the situation into its constituent parts and assign each to one of the other four realms.

   This theory works very well with this research as it confirms the fact that healthcare is presently going through an era of high velocity which is evident by the need to make fast decisions and identify the constant changes which the system is going through.
2. Value Based Leadership theory by Kauffman Hall (2012): This theory highlights the competencies that boards and executives must have to lead a Value -Driven organization.

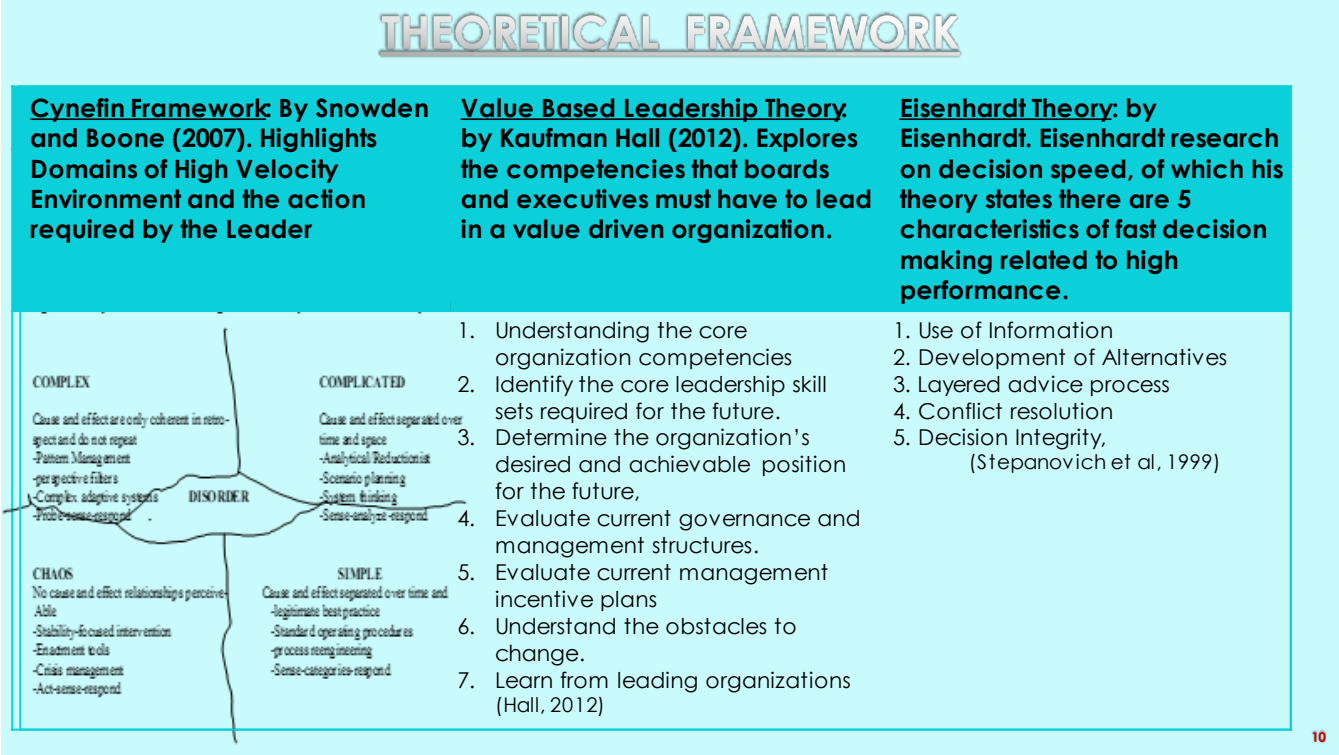
This theory names seven competencies shown in figure 2. According to Hall (2012), for any institution to sustain in a value-based practice these competencies must be achieved by the healthcare leadership.

3. Eisenhardt Theory according to Stepanovich et al, (1999), is based on decision making speed and highlights the five characteristics of fast decision making related to high performance in a high velocity. The five characteristics are shown in figure 2.

The theories when combined with the Conceptual Framework provided the framework which was used in the creation of the survey questions in the High Velocity Decision Making tool and is revisited later in Chapter 5, under the Post Conceptual Framework.

Figure 2

Theoretical framework



Note. Comparison table of the three-theorist used to guide and frame the conceptual framework for the research study**.**

Chapter 2

Literature Review

Healthcare organizations face challenges in efficiently accommodating increased patient demands with limited resources and capacity. The modern reimbursement environment prioritized the maximization of operational efficiency and the reduction of unnecessary cost (i.e., waste) while maintaining or improving quality. As healthcare organizations adapt, significant pressures are placed on leaders to make difficult operational and budgetary decisions (Hamrock, 2013).

According to Sultz and Young (1997), healthcare is undergoing a revolution. Healthcare reform is occurring as market driven not policy driven, a phenomenon of which the result has been a surge of healthcare facilities and services mergers and acquisition, new programs, new names and new roles that signal the onset of fundamental change throughout the system (Sultz &Young, 1997). With the public inundated with the confusing alphabet soup of PPOs, HMOs, and DRGs, doctors have formed networks, and hospitals are competing for participants with clinics springing up in shopping plazas (Sultz & Young, 1997). With such constant changes, it is evident that healthcare is in an environment which consists of a high velocity. Bourgeos and Eisenhardt (1998), defined a high velocity environment as an environment where there is rapid and discontinuous change in demand, competitors, technology, and regulations, such that information is often inaccurate, unavailable or obsolete. With these constant changes, instability, and unpredictability, it is

evident that healthcare leaders are being challenged with decision making under the regulatory tenets of the Participant Protection and Affordable Care Act (PPACA). Regulatory compliance tenets are defined as multiple rules, such as specification, policies, standards, or laws to which the organization must conform and comply (Advisory Board Research and Analyst (ARBA), 2016).

Decision making is a task that is undertaken through organizing process that are cognitive, but also social/cultural, political, and emotional, and in which the social construction of leadership and context are inseparable from the individual and collective undertakings (Fulop & Mark, 2013). Based upon these definitions of decision making and high velocity environment, a high velocity decision making is therefore an organized process using cognition, social and personal values in a rapid and constantly changing/evolving environment which is unorganized, unknown, and chaotic to achieve a task/goal. As such pertinent decisions needs to be made in this high velocity environment, it would be most interesting to know what competencies are being used by the healthcare leaders for decision making in this high velocity environment to achieve sustainability of the organization. Competencies are defined as a set of demonstrable characteristics and skills that enable and improve the efficiency of performance of a job (ACHE, 2017).

In March of 2010, Congress passed a comprehensive healthcare reform bill, the Participant Protection and Affordable Care Act, otherwise known as the "ACA or Obama Care." This law reshapes the way health care is delivered and financed by transitioning providers from a volume-based fee-for-service healthcare systems toward a value-based care healthcare systems, through a series of innovative programs, regulations, fees, and subsidies (ABRA, 2016). This modern reimbursement environment prioritized the maximization of operational efficiency and

reduction of unnecessary cost (i.e., waste) while maintaining or improving quality. Leaders of hospitals and insurance companies have faced great challenges based on the implementation of the ACA and the market shift momentum to a more value-based health care model (Osborne, 2014). This challenge generates difficulties in creating decision making to yield sustainability of the organization. Sustainability is defined as the long-term and future ability to fulfil the mission of service; to comply with ever changing national, state, and local regulations; and to maintain good operating margins (Clayag, 2013).

This method of value-based care for health care delivery follows the tenets for the Patient Protection and Affordable Care Act which, for the purpose of this research is the law of focus for the regulatory compliance of healthcare. The PPACA tenets are as follows:

1. To achieve better population health,
2. To lower capita cost, and
3. To elevate the patient experience (Advisory Board Research and Analyst, 2016).

The PPACA tenets are most important to the American Healthcare system as it will address the cost, quality, and access problems in the current US Health care system. The rapid growing health cost has strained the abilities of individuals, government, and employers to finance routine coverage, while health care costs continue to escalate, millions uninsured and underinsured lack access to preventative care. Although the ACA's regulatory requirements will add short-term costs, the Congressional Budget Office (CBO) projects that the law's payment and coverage changes will lead to lower Medicare spending in the long term (ABRA, 2016).

In 2014, American taxpayers were funding greater than 20 percent more federal government healthcare spending per capita than other developed foreign countries. In the US, 18 percent of the gross domestic product is now devoted to healthcare; free healthcare is a universal benefit for those over 65 years of age via Medicare, and there are similar programs for the non-

working poor and chronically ill people via Medicaid, whilst the ACA is subsidizing access to healthcare for uninsured working citizens and college students (Cochrane, 2014).

According to Mahon and Flowers (2006), the USA spent the most money on health expenditures per Capita, an amount being $7,290, while being rated last for the quality of care, access, efficiency, equity, and life span in comparison to other developed countries being Australia, Canada. Germany, Netherlands, New Zealand, and United Kingdom. This report card adds more demands on healthcare leaders, as it highlights areas for improvement along with cost reduction.

With the constant raising of prices for employment, technology, pharmaceuticals, energy, and the cost facts required to stay within the regulatory compliance in order to keep institutions' doors open, it is most difficult to make decisions which will contribute to the financial sustainability of most healthcare institutions because of so many multiple variables or criteria. As more people are now entitled to healthcare services, the bill may not always be covered by the insurance carriers and may be either consumed by the institutions' unmanageable debt or placed into collections. This results in a loss of revenue for healthcare institutions. As an example, in 2014, 52% of overdue debt on credit reports was due to medical bills, and one in five Americans had medical debt on their credit record, impacting their ability to get a mortgage or buy a car (Rosenthal, 2017).

The ACA works using a series of incentives, taxes, and payment programs to emphasize payment for quality outcomes and the elimination of unnecessary spending. It also attempts to provide access to insurance for more Americans. The ACA payment initiative offers bonuses and penalties to hospitals based on their ability to improve quality and reduce the cost of care. This includes mandatory quality programs which make a portion of hospitals' Medicare payments

contingent on clinical quality. Examples of such programs include value-based purchasing, the hospital readmission reduction program (RRP), and the hospital acquired conditions reduction program (HAC). The law also experiments with voluntary payment programs that attempt to align the incentives of providers and payers such as bundled payments and shared savings (ABRA, 2016). Payments and delivery innovation come together in one of the law's key provisions; the creation of accountable care organizations (ACO) under the Medicare shared savings programs (MSSP), (ABRA, 2016). Medical shared savings programs ACO's are formed by the union of one or more providers or healthcare institutions with Medicare. The providers are assigned a population of Medicare beneficiaries, and are responsible for managing the care, cost, and quality of those beneficiaries. While they continue to receive payments for each procedure they perform (known as fee-for-service), these ACO's also receive a shared savings bonus based on how effectively they can limit total cost and meet quality metrics. Meanwhile, the ACO model's clinical and financial potential has led many hospitals and physician groups to form private ACO with commercial insurers (ARBA, 2016). Hence, losing their autonomy. Yet this model of operating does not decrease the federal annual healthcare expenditure.

While transforming standards for healthcare payment and quality, the ACA also attempts to expand the number of Americans who have access to insurance. Through the Medicaid expansion, federal money is extended to states to expand Medicaid eligibility to cover individuals and families with incomes up to 138% of the poverty line, a proposal about half of state governments have accepted. In addition, the law contains employer and individual mandates - backed up with fines - to encourage the purchase of insurance. Eligible individuals will be allowed to purchase their insurance through health insurance exchanges, also known as Marketplaces selecting from private insurance plans (ABRA, 2016). This method has increased access to health care for many who could not afford it.

Table I

ACA tenets with key features to ACA Summary

Tenets	Key Features of the ACA
Payment/Quality	-Bundled Payments for Care Improvement -Shared Savings -Value Based Purchasing -Readmission Reduction Program -Hospital-Acquired Condition Reduction
Delivery	-Accountable Care Organizations
Coverage	-Medicaid Expansion -Health Insurance Exchanges

Note. The three key tenets of the PPACA with the main features of each tenet.

Clinically, the ACA makes providers more financially reasonable for the cost and quality of care provided and encourages better coordination among providers. Hospitals face the dual challenge of making their episodic healthcare more efficient within their institutional walls and investing in the long-term health of the entire community (ARBA, 2016). This means that providers must invest in primary care and chronic disease efforts. Providers will need to continue to provide high quality care, while also reinvesting in the basics of preventative health.

Financially, the shift to risk-based payment makes revenue contingent on value. Relying solely on fee-for-service payments is an increasingly unattractive strategy. The law uses a mixture of cost reductions such as $415 billion in cuts to Medicare payments over the next decade and revenue increases to fund the various tenants of the law (ARBA, 2016).

Operationally, the ACA relies on the Health and Human services (HHS) to monitor and regulate the implementation of the ACA's many initiatives. Hospital administrators will need to overhaul their systems and protocols to effectively record and report the appropriate data to appropriate government agencies (ARBA, 2016). To successfully manage patient health, providers will need to collect, synthesize, and act on patient information beyond what is needed. Providers will need to perform the perplexing task of segmenting patients based on risk, and ensuring they receive the appropriate care. With all being said, it is therefore evident that health care providers and leaders are being challenged to do more with less resources for the community based on the ACA tenants.

Decision making for leaders in an era of a high velocity environment under the ACA tenets.

High velocity environments are defined as environments in which there is a rapid and discontinuous change in demand, competitors, technology and slash or regulations, such that information is often inaccurate, unavailable, or obsolete (Bourgeois & Eisenhardt, 1988). The passage of the Patient Protection and Affordable Care Act PP ACA, also referred to as Affordable Health Care Act or ACA has created uncertainty for the future of the nation’s healthcare delivery system (Kaufman, 2011). Due to this nature of constant change and the daily evolution of healthcare, healthcare leaders need to keep up with these constantly growing demands.

The Cynefin framework - provides a leadership framework for decision making, which allows executives to see things from a new viewpoint, assimilate complex concepts, and address

real world problems and opportunities (Snowden & Boone, 2007). In this approach, leaders learn to define the framework with examples from their own organization's history and scenarios of its probable future, thus enhancing communication and helping executives rapidly understand the context in which they are (Snowden & Boone, 2007).

As the requirements of the Affordable Care Act came into focus and a myriad of challenges, including the protracted recovery of the US economy, sicker and older patient populations, inadequate facilities, and equipment, skyrocketing healthcare costs, shrinking reimbursement rates and a growing outcry for better outcomes and more accessible care questioned the ability of many health care organizations to sustain their operations, many stand-alone providers began to seek long-term answers. These factors accelerated, even catalyzed the current wave of consolidations (Clayag, 2013). These complexities during the high velocity of healthcare systems in a value-based practice era create decision making challenges for healthcare leaders.

As health care organizations are moving from an informal process of considering the triple bottom line elements (i.e., energy use reduction, appropriate hazardous and non-hazardous waste disposal and implementing sustainable changes in operating room supply chain management which could exceed $5.4 billion over five years) in their daily business to a much more structured and measurement oriented approach, with targets and a commitment to continuous improvement (Block, 2016)., it is evident that one size practice does not fit all. The traditional method of making decisions based on reflection of the past similarities, or fact-based management where the leader's job is to sense, categorize and respond using delegation and best practices (Snowden & Boone, 2007) hence knowing of the solutions to the problems is no longer that simple or linear.

In today's healthcare environment, leaders need to determine the prevailing operative context so they can make the appropriate decisions. According to Snowden and Boone 2007, the Cynefin framework sorts the issues facing leaders into four contexts or domains defined by the nature of the relationship between cause and effect, distinguishing 2 domains within an ordered world in which cause, and effects are a discernible set (complex and chaotic) world, cause and effect are not discernible and past patterns of action will not provide present or future solutions. The four domains of simple, complicated, complex, and chaotic require leaders to diagnose situations and to act in contextually right ways, which may also involve movement across one domain to another. However, a fifth domain of disorder sits at the center point of the four others and applies when information is unclear. Which of the other four context is predominant, presuming that the leader's communication is mutually understood and accepted in the other domains determines this. This framework is meant to provide leaders with both a way of understanding and leading in contextually appropriate ways through a description of the four domains and the leader's role within it (Fulop & Mark, 2013). Decisions need to be made in a complex and chaotic context characterized by flux and unpredictability, no right answers, unknown unknowns, high turbulence, no clear cause and effect, many decisions to make and no time to think, high tension and pattern-based leadership. The leaders' job is to probe, act, sense and respond, increase levels of interaction and communication, look for what works instead of seeking right answers, take immediate action to reestablish order, then sense where stability is present and where it is absent and then respond by working to transform the situation from chaos to complexity, with identification of emerging patterns can both help prevent future crises and discern new opportunities (Snowden & Boone. 2007). The task at hand will be achieving these tasks as mentioned, while yielding compliance to the ACA regulations and achieving sustainability for the institution.

Decision Making in High-Velocity Environment Impact on sustainability of the Institution, "No Margin – No Mission"

The Affordable Care Act (ACA) is an accumulation of all the past healthcare issues. The results of the ACA have created more challenges and deepened the leadership issues regarding coverage expansion, quality enhancement of healthcare, costs lowering, and accountability of insurance companies (Osborne, 2014). Leaders of hospital and insurance companies have faced great challenges based on the implementation of the ACA and the market shifts momentum to a more value-based healthcare model (Osborne, 2014). In the transition from a traditional healthcare system being fee-for service to a value-based healthcare system, patients have experienced deductibles and copayments changes from $20 copay and $2500 deductibles (Baicker & Goldman, 2011). Deductible amounts must be reached before insurance payments will cover any expenses, which causes economic strain on families who have extensive health care needs (Corlette et al., 2013). Adding to the challenges is the problem of funding on both federal and state levels. Funding has been reduced for health care services for low-income families (Corlette et al., 2013). Hence, each healthcare leader is challenged to make decisions which will best satisfy adhering to the regulatory tenets of the ACA to provide value-based healthcare with no funding and higher costs yet adhering to their institutions' financial budgets and attaining the annual financial goals to achieve sustainability for the institution.

The Patient Protection and Affordable Care Act (PPACA) is transforming the health care market. The transformation requires health system leaders and health finance scholars to re-examine hospitals' capital budgeting practices in the context of new delivery models. According to Writer and Song (2013), the Affordable Care organization (ACO) is one of the key strategies being evaluated under health reform for their potential to achieve the triple aim of better health, better health care access and lower costs. ACO's create formal structures designed to integrate

and coordinate care access to a range of providers and settings. In an ACO, participating providers usually primary and specialty care physicians and hospitals accept responsibility for the cost and quality of care provided to a defined patient population. Payers, in turn, partner with the providers to create incentives that encourage delivery of high-quality care at a lower cost than under traditional fee-for-service reimbursement arrangements.

The process of identifying and approving projects may need to be adapted. Whereas, a hospital could previously focus on services it provided, new payment arrangements under the ACO will require cooperation among many disparate, possible independent organizations (Altman, 2012). As a result, hospitals must reorient themselves away from being doctors' workshops, towards more strategic partnership with physicians, providers, and medical staff in primary, specialty, and post-acute care (Reiter & Song, 2013). Hospital leaders will have to form and design ACO governance, a new interdisciplinary accountable care team and allocation of decision-making authority. The level of integration in community health systems designs is associated with greater capital efficiency and higher returns on invested capital. Such coordinated decision making may be particularly important for smaller ACOs facing capital constraints, as internal capital markets have been shown to improve firm performance (Stein, 1997).

The restructuring of capital budgeting process involves classifying projects by service line, or in relation to the strategic plan. Broader classifications have included operational type projects (i.e., Replacement of existing equipment, maintenance of plants, etc.) and strategic projects (i.e., long term projects focused on expansion, new surface lines and growth). Achieving success in ACOs will require substantial investments in information technology (IT). This may include as much as 30% of capital budgets to meet regulatory standards. IT investments are often cited as the largest capital deployment outside new hospital construction for a healthcare system,

yet many health systems view IT investment as an operational project. Hospitals and health systems must shift this view of IT investment and treat it as a strategic allocation. Health systems that do not have IT or cannot allocate sufficient capital to IT investment will be at a significant disadvantage in terms of ability to join and or succeed as a member of an ACO (Supra et al., 2006).

A change in basic assumptions will be required to redefine what constitutes "strategic" spending with respect to investments aimed to improve efficiency. Achieving better outcomes at lower cost within ACOs will involve an increased focus on patient centered medical homes and effective primary care (Starfield et al., 2005). The high fixed costs associated with hospital care mean that real savings will only be achieved by avoiding inpatient expansion and slowing investments in new capital assets (Reiter & Song, 2013). As presented by the literature review, financial health care management is undergoing a transition of change due to healthcare reform. This arena has also entered a high velocity environment of unknown-unknown as described by the Cynefin framework thus, placing healthcare leaders in a conundrum with decision making.

The Ecology of Evolving Healthcare to achieve Sustainability

As the requirement of the Affordable Care Act came into focus and as myriad challenges including the protracted recovery of the US economy, sicker and older patient populations, inadequate facilities and equipment, skyrocketing healthcare costs, shrinking reimbursement rates and a growing outcry for better outcomes and more accessible care. This questions the ability of many health care organizations to sustain their operations, many standalone providers began to seek long-term answers. These factors accelerated and even catalyzed the current wave of consolidations in the past ten years, hundreds of organizations have engaged in mergers, acquisitions or affiliations, devoting hundreds of thousands and even millions of dollars to those

arrangements (Clayag, 2013). According to the latest figures from the research firm Irving Levine Associates, there were sixty mergers and acquisitions in 2008. The number dropped to 52 in 2009, likely reflecting the nationwide impact of the Great Recession. By 2010 and 2011 the years of the ACA introduction, the number climbed to 72 and 90, respectively. The final total for 2012 increased to 100.

The issue which promotes the consumption of smaller facilities, medical practices and community hospitals by larger institutions stem from the challenges that healthcare leaders face as they need to make critical decisions as the ACA rewards the efficient use of resources, reduction in costs, coordination of care and better outcomes. Often, unaffiliated providers do not have the infrastructure (technological and otherwise), human resources or capital needed to participate in ACA's provisions, such as the ACO models and other Medicare/Medicaid initiatives that rely heavily on electronic medical records and IT (Clayag, 2013).

Another challenge is that of negotiation power. Hospitals, doctor’s offices, and clinics are not the only ones forming large systems. Insurance companies are also consolidating, forming larger single insurance systems which serve an environment where they are providers. During contract negotiations, this gives the insurance company more bargaining power compared to that of the fragmented providers (Zuckerman, 2014). It is imperative that healthcare decision makers see consolidation as one viable strategy for competing in today's environment. The benefits of a merger, an acquisition or an affiliation are innumerable. Organizations should drive toward real, tangible benefits. These includes reduced costs, increased cost competitiveness, capital cost avoidance, access to capital, quality improvement, access to scarce personnel and expensive technologies, expanded services, revenue enhancements and population management (Zuckerman, 2014).

The ultimate benefit of consolidation is sustainability; the long term and future ability to fulfill the mission of service, to comply with ever changing national, state, and local regulations, and to maintain good operating margins. Although consolidation comes with no guarantees of success, it often is associated with a high rate of termination or failure to complete. Even when a deal closes, it is difficult to ascertain its longevity in an environment with constant uncertainty (Clayag, 2013). According to Zuckerman (2014) the most important thing for leaders to keep in mind is the maintenance of the mission. You can get the most for your community if you have negotiation leverage. However, if you're on a fiscal Cliff or financial decline, you will have less leverage, if you are not in distress or significant decline, there is a sense that you can put it off and think you are OK, but then you may not be as attractive when you have no leverage.

Healthcare sustainability is fast becoming a critical area in healthcare delivery. Understanding and implementing the triple bottom line of economic prosperity, environmental stewardship and social responsibility and merging it with the triple aim of healthcare for populations, the patient experience and value-based skill will be critical for physician executives as they navigate their organizations through the challenge of healthcare delivery transformation (Block, 2016).

Missing Gaps Identified from Literature Review

Based on the Literature review, the following gaps in the literature were identified and needs to be further researched:

1. There is no measurement tool to assess whether an institution is ready to facilitate a transformation to a high velocity environment.

2. There is no measurement tool to identify which healthcare competencies are being used by healthcare leaders in this high velocity environment for decision making to yield sustainability for their organizations.
3. Little is known if the regulatory compliance of the PPACA will yield sustainability of healthcare organizations.
4. Little is known if the PPACA was eliminated, would a high velocity environment in healthcare still exist.
5. Little is known about Decision-Making by Healthcare leaders in Healthcare Organizations.

Based upon curiosity and interest to contribute to the body of knowledge, this research will focus on Gap #2: "There is no measurement tool to identify which healthcare competencies are being used by healthcare leaders in this high velocity environment for decision making to yield sustainability for their organizations."

Chapter 3

METHODOLOGY

Introduction

The purpose of this study was threefold: The first was to create a measurement tool which identified the healthcare competencies required by healthcare leaders in a high velocity environment to achieve sustainability. This goal of construct and context validity was achieved using the Delphi survey technique (Hasson et al., 2000). This instrument entitled, "the High Velocity Decision Making tool" assessed the five key constructs discussed in the literature, which are required for decision making.

Secondly, the HDVM tool's reliability was established by using Cronbach's Alpha on the first 60-90 samples of the population, to establish internal consistency reliability of the instrument (Cohen, 1988). Also, Exploratory Factor Analysis (EFA) was used to establish Construct Validity for each Domain question to identify the factors and ensure that there was a relationship between the identified factors (Tabachnick & Fidell, 2001).

The third purpose was to use the newly created validated and reliable tool in the population by participants who fits the inclusion criteria to identify the healthcare leadership competencies required for decision making and understand the relationships, if any, between the healthcare competencies and making effective decisions in high velocity environment to achieve sustainability. Conclusion of data collection yielded the process of data analysis which will be discussed herein.

Research Design

This dissertation study which focused on the newly created survey tool called the High Velocity Decision Making tool (HVDM tool) was non-experimental because there were no controls for my population Survey. It was descriptive – regarding study population characteristics and analysis of descriptive research questions, as it looked at relationships between variables. The study was exploratory because it involved examining a phenomenon of interest and exploring its dimensions, it was correlational –as it looked to see if variables were related (causality cannot be assumed). It was modified mixed methods using qualitative and quantitative research approaches, and it was cross-sectional - as it was being tested at one point in time.

HVDM© Survey Instrument Development: Delphi Methodology

The Delphi is a group facilitation technique which seeks to obtain at least 80% consensus through expert opinions from a set of questions posed to a group consisting of at least five experts who are representatives from within the field of study population of interest (Hasson et al, 2000). The goal was to establish validity of the tool and to forecast whether the proposed questions were appropriate for eventual implementation into a survey used within a sample of the population. Each panelist reviewed the face, and content validity and identified any items that did not conform to focus, brevity, and clarity.

This Delphi study involved 6 experts. The selection of the experts involved purposive sampling, and were selected for a specific purpose, to apply their knowledge to a certain purpose. Approval by the dissertation - research committee was sought and granted for the 6 experts. In addition, approval from the Seton Hall University Institutional Review Board (IRB) as shown in Appendix A. The panelist package shown in Appendix B features both the invitation to be a

panel member and the inclusion criteria. The individual panelists were selected based upon their level of knowledge and experience in the field of decision-making, survey research, healthcare leadership and high velocity environments. The composition of the expert panel consisted of a Senior VP of Quality and Patient Safety, a CMO of Population Health, a chief Research Officer of EBP, a Chief Nursing Officer, a VP of Community Engagement and Philanthropy, and a Healthcare Law Attorney and Professor.

Assessing Validity

Validity was assessed through a series of three rounds interspersed controlled feedback. The process used sought to gain the most reliable consensus from the group of experts. A minimum of 80% consensus must be achieved in each round to consider the process complete (Hasson et al, 2000). This was achieved through a survey worksheet which was created for the expert reviewers, in which they were asked if each variable/question measures the concept and if it was clear or not. Round one survey worksheet was sent and completed by all expert panelists of the Delphi as illustrated below in Table II.

Table II

Delphi 3 rounds series of Survey Worksheet outcomes.

Round 1 Outcomes	**Round 2 Outcomes**	**Round 3 Outcomes**
-First package consisted of 66 questions. -Experts were asked to assess each question: . Does it Measure concept? . Is it clear? . Is it double-barreled? . Is it biased through socially desirable response? - Optional response to comment on overall question	-Based upon the critique received from round 1, the rationale given for expulsion was presented -A newly developed proposed question was presented as a possibility -or the choice to leave question as is originally	-A tally was taken of all questions being subjected to revision or elimination as considered by the experts -If 80% of consensus was not met for the critiqued question, then that question was eliminated from the survey.

2023©SFoote

Note. The three rounds process with the Delphi panelist showing what was asked and the outcomes of each round.

Content validity was used to estimate how much a measure stands for every single element of a construct (Alreck & Settle, 2004) and was established through the survey worksheet illustrated in Table II. Construct Validity was proven through Cronbach's Alpha Factor Analysis. Cronbach's Alpha factor Analysis was used to assess i.e., how well the HVDM measured the variables under study, in other words, the reliability of the survey tool (Cronbach,1951). Exploratory Factor Analysis (EFA) was used to establish Construct Validity for each Domain question to identify the factors and ensure that there was a relationship between the identified factors (Tabachnick & Fidell, 2001).

HVDM Survey Measurement Tool

The High Velocity Decision Making Tool is a survey consisting of 5 domains with a total of 57 questions of which 12 questions are demographic questions.

5 Independent Variables:

1. Communication
2. Knowledge of Environment
3. Business Skills
4. Professionalism
5. Leadership

1 Dependent Variable:

1. Decision Making

2 Groups: Used for comparison.

1. Middle level leaders
2. Senior level leaders/executive

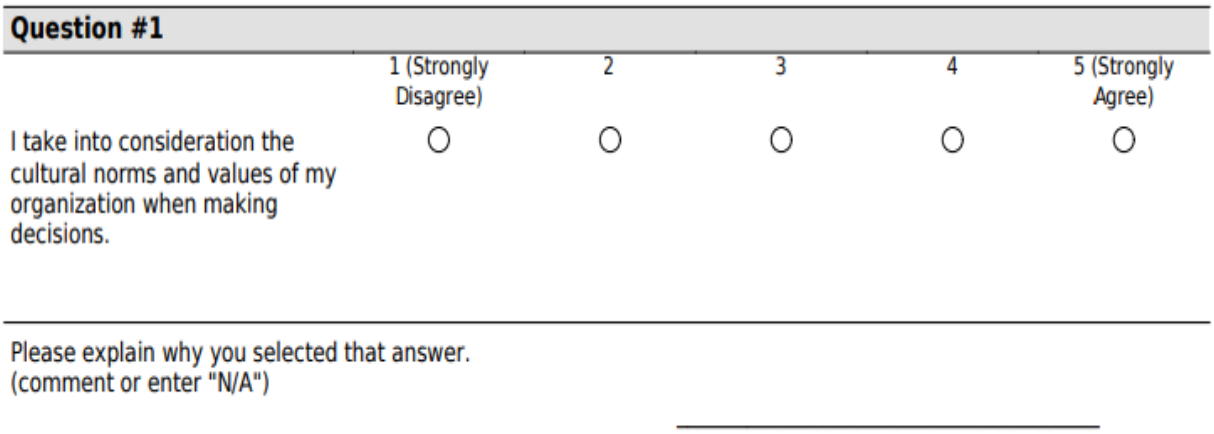
Based on the conceptual framework as discussed in Chapter 1, and the 5 constructs indicated, the questionnaire was developed. The High Velocity Decision Making Tool consisted of 5 domains which represented each of the independent variables was devised using Likert scales 1-5, ranging from strongly agree to Agree to Neutral to Disagree to Strongly Disagree (Likert, 1931). One question, question #4 used revered scoring.

1. Leadership: Questions 1-10 where question 4 is a reverse scoring.
2. Knowledge of environment: a total of 15 questions
3. Communication: total of 10 questions
4. Professionalism: total of 9 questions
5. Business Skills: total of 9 questions

All 45 questions had an open question which enabled the participant to free text their opinion, thus achieved the qualitative component of this research, by obtaining the contextual understanding of the data which were used to identify themes. This free-text choice was most unique as it allowed each participant the opportunity to provide a rationale as to why they had chosen to provide such a score using the Likert Scale with each question under every domain, as illustrated in figure 3. Full Survey tool can be seen in Appendix C.

Figure 3

Snapshot copy of actual question from the HDVM© Tool, featuring use of Likert scale and optional free text for contextual understanding.



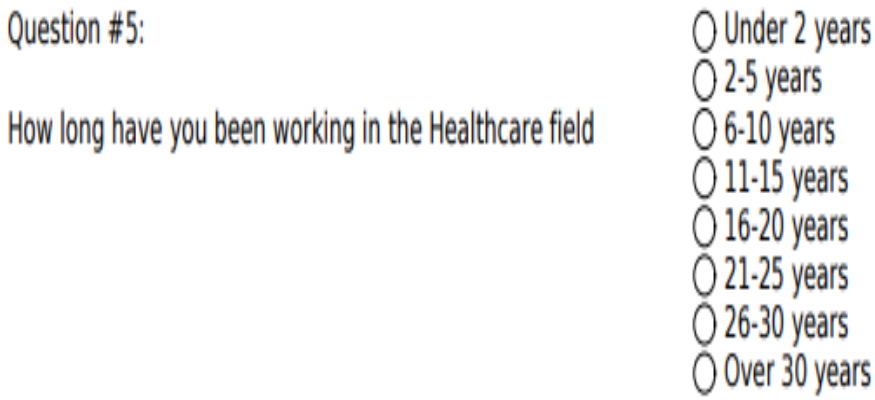
Question #1					
	1 (Strongly Disagree)	2	3	4	5 (Strongly Agree)
I take into consideration the cultural norms and values of my organization when making decisions.	○	○	○	○	○

Please explain why you selected that answer.
(comment or enter "N/A")

Note. Question 1 of the HDVM© Survey tool with the Likert scales and free text option.

Figure 4

Snapshot Copy of a question from the demographic survey of the HVDM© Tool



Note. Question #5 asking tenure in healthcare field. The full survey tool can be seen in Appendix D.

Inclusion and Exclusion Criteria for Participation

To be included in the research study, each potential participant had to meet the criteria being set up as featured in figure 5 below:

Figure 5

Inclusion and Exclusion Criteria for participants for HVDM© Survey Tool

Note. Criteria for participants for participation in the survey research.

Participant Recruitment

Upon approval by Seton Hall University Institutional Review Board (appendix D) and Hackensack Meridian Health (HMH) Institutional Review Board (appendix E), survey participants who met the inclusion criteria were recruited from the Hackensack Meridian Health System which consists of 14 hospitals, all within the State of New Jersey.

Recruitment Procedure

1. The Institute for Evidence Based Practice and Nursing Research, on behalf of the Principal Investigator, requested from the Human Resources Information Systems of HMH email addresses for potential participants meeting the eligibility criteria.
2. The HMH REDCap administrator within the Institute for Evidence Based Practice and Nursing Research sent, on behalf of the Principal Investigator, an email in REDCap with a recruitment letter (Appendix F) informing all potential participants about the study. This recruitment letter had a link to an Information Sheet for Participant (Appendix G) which potential participants will review.
3. After reviewing the Information Sheet for Participant, if the potential participant does not agree to take part in the study, no further action was required.

If the potential participant agreed to participate in the study, they were informed that they did not have to participate in the study, and if they decided not to participate or if they choose to withdraw during the study, they were able to do so without any penalty or impact upon their employment status.

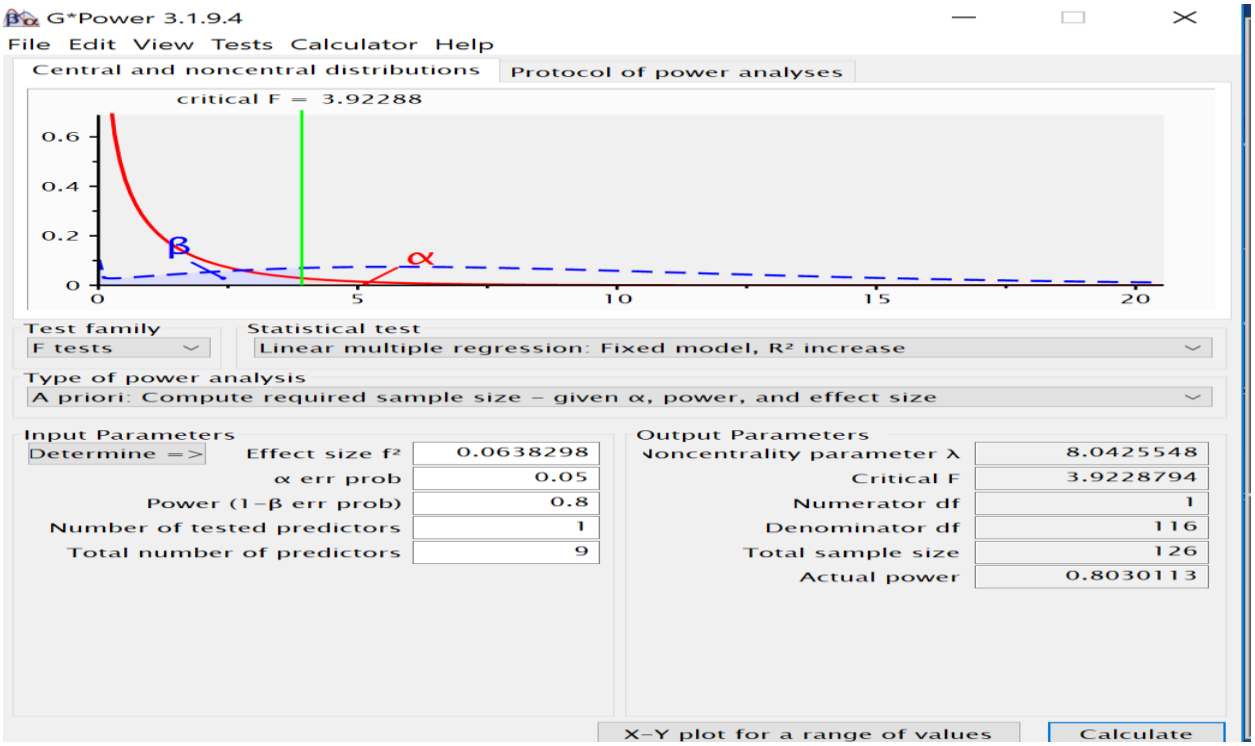
Because the sample size was not obtained through Hackensack Meridian Health System alone, snow balling sampling was used. A snowball sample assumes that people with like characteristics, behaviors, or interest, from associations, and it is this relationship, which the researcher uses to select a sample (Hek & Moule, 2006).

A priori G* Power Analysis – Sample Size

Using G*Power 3.1.9.4 F-test for a priori power analysis calculation for sample size (Faul et al, 2009). This study comprised of a one-tailed, effect size (f-test) of 0.064, alpha = 0.05, power = 80%, and total number of predictors of 9 – to calculate the targeted sample size of 126, as shown in Figure 6. Due to the possibility of obtaining incomplete surveys, an additional 20% was factored into the total targeted sample size of 151 participants.

Figure 6

A priori G Power Analysis to determine sample size.*



Note. A priori G* Power analysis to establish the projected required total sample size of 126 participants.

Data Coding and Analysis

Data was exported from HMH REDCapTM into Microsoft Excel (Microsoft Corporation, Redmond, WA, USA) for cleaning and demographic analysis. Quantitative data corresponding to the 45 Likert questions were coded numerically from 1-5, 1 being lowest and 5 being highest, before the data set was transferred into SAS version 9.4 (SAS Institute Inc., Cary, NC, USA) for statistical analysis.

The output, code, and data analysis for this report was generated using SAS software, version 9.4 of the SAS System for Windows, and Microsoft Excel, Microsoft Suite 2019 for Windows.

Reliability Assessment of the HVDM© Survey Tool

Face and content validity were established during the Delphi Process. Reliability for this analysis was assessed using Cronbach's alpha analysis (Cronbach, 1951). Cronbach's analysis is an index of reliability expressed as an α value between 0 and 1 and is routinely used for survey tools. This analysis measures the internal consistency of the survey tool, i.e., the extent to which the survey items measure the same constructs. In general, a survey tool is reliable if it receives an α value of 0.7 or above (Alreck & Settle, 2004).

Cronbach's alpha was calculated for all items across the 5 constructs. Each of the scales per construct (e.g., leadership, communication, business skills etc.) was analyzed separately for internal consistency and receive an overall alpha score.

Psychometric Testing: HVDM© Tool

Cronbach's Alpha

Psychometric testing of the HVDM© tool was assessed by conducting Cronbach's Alpha on the first 90 responses out of the 231 total responses to the HVDM© survey tool to measure reliability or internal consistency. Cronbach's alpha was conducted to measure reliability or internal consistency and tests whether Likert scale surveys are reliable by measuring latent variables. Each of the 45 items within the HVDM© tool maintained the same 5 response options corresponding to the Likert scale; therefore, the Cronbach Coefficient Alpha (raw variable) was utilized to measure internal consistency for the entire tool and domains/competencies (subscales). Internal consistency of a test/scale is as a number between 0 and 1; and, as per George and Mallery (2010), Cronbach's Alpha is interpreted as follows:

Table III

Cronbach Coefficient Alpha of total HVDM© Tool.

Cronbach's Alpha	**Internal Consistency**
$\alpha \geq .9$	Excellent
$.9 > \alpha \geq .8$	Good
$.8 > \alpha \geq .7$	Acceptable
$.7 > \alpha \geq .6$	Questionable
$.6 > \alpha \geq .5$	Poor
$.5 > \alpha$	Unacceptable

Cronbach Coefficient Alpha: Total HVDM	
Variables	**Alpha**
Raw	**0.8336**
Standardized	0.8682

Note. Cronbach Coefficient Alpha α=0.83 which shows "good" internal consistency. Adapted from SPSS for Windows Step by Step: A Simple Guide and Reference, 17.0 Update (10th ed.,

p.58), by D. George, & P. Mallery, 2010, Allyn & Bacon. Copyright 2010 by Darren George & Paul Mallery.

Figure 7

Cronbach Coefficient Alpha with Deleted Variable for the total HDVM© Tool

Cronbach Coefficient Alpha with Deleted Variable: Total HVDM					
	Correlation with Total	**Alpha**		**Correlation with Total**	**Alpha**
Q1	0.3659	0.8294	**Q24**	0.4988	0.8263
Q2	0.2362	0.8317	**Q25**	0.3607	0.83
Q3	-.1035	0.8433	**Q26**	0.5327	0.8269
Q4	0.0662	0.8390	**Q27**	0.3022	0.8304
Q5	0.1837	0.8327	**Q28**	0.3034	0.8315
Q6	0.3821	0.8291	**Q29**	0.2372	0.8321
Q7	0.3513	0.8292	**Q30**	0.5302	0.8255
Q8	0.5318	0.8254	**Q31**	0.0692	0.8346
Q9	0.2531	0.8327	**Q32**	0.5235	0.8273
Q10	0.2200	0.8342	**Q33**	0.089	0.8379
Q11	0.2309	0.832	**Q34**	-.0373	0.8414
Q12	0.4626	0.8252	**Q35**	0.5764	0.8248
Q13	0.4873	0.8241	**Q36**	0.2788	0.8308
Q14	0.4702	0.8263	**Q37**	0.1964	0.8328
Q15	0.4019	0.828	**Q39**	0.1526	0.8353
Q16	0.4126	0.8282	**Q40**	0.4687	0.8279
Q17	0.4506	0.8285	**Q41**	0.2474	0.8323
Q18	0.2948	0.8304	**Q42**	0.2905	0.8307
Q19	0.5081	0.8267	**Q43**	0.3478	0.83
Q20	0.4914	0.826	**Q44**	0.4097	0.8269
Q21	0.2472	0.8315	**Q45**	0.2452	0.8315
Q22	0.3255	0.8299	**Q46**	0.2436	0.8325
Q23	0.4581	0.8252			

Note. Cronbach Coefficient Alpha with Deleted Variables for the total HVDM© tool identified 2 negatively correlated questions specifically items Q3 and Q34. Item Q3 demonstrated a negative correlation with the total internal consistency score and the subscale of Leadership (increases the Cronbach's alpha from r=0.44 to r=0.51) thereby indicating a negative correlation to the Leadership competency (subscale) and the whole tool.

Table IV

Cronbach Coefficient Alpha by Competency/Domain - Leadership

Cronbach Coefficient Alpha: Leadership Competency	
Variables	**Alpha**
Raw	**0.4396**
Standardized	0.5181

Note. Cronbach coefficient alpha for Leadership domain α=0.44 which shows "unacceptable" internal consistency according to George and Mallery, (2010).

Figure 8

Cronbach Coefficient Alpha- Leadership Competency

Leadership Competency			Cronbach Coefficient Alpha with Deleted Variable:	
	Mean	**St. Dev**	**Correlation with Total**	**Alpha**
Q1	4.618	0.7152	0.1863	0.4157
Q2	4.6405	0.7111	0.2041	0.412
Q3	2.7865	1.3183	-0.0792	0.5111
Q4	3.5506	1.4223	0.0764	0.4583
Q5	4.0899	0.8068	0.1892	0.4129
Q6	4.4944	0.7249	0.2739	0.3961
Q7	4.4944	0.8677	0.3842	0.3583
Q8	4.4494	0.8395	0.277	0.3895
Q9	3.0337	1.4882	0.2212	0.3954
Q10	2.7078	1.5241	0.2369	0.388
Q11	4.1236	1.0747	0.1406	0.4248

Note. Cronbach coefficient alpha for the leadership competency showing Q3 demonstrated a negative correlation with the total internal consistency score and the subscale of Leadership (increases the Cronbach's alpha from r=0.44 to r=0.51) thereby indicating a negative correlation to the Leadership competency (subscale) and the whole tool.

Table V

Cronbach Coefficient Alpha - Perception of Knowledge of Environment Competency

Variables	Alpha
Raw	**0.8091**
Standardized	0.8254

Note. Cronbach Coefficient Alpha α=0.81 which shows "good" internal consistency according to George and Mallery (2010).

Figure 9

Cronbach Coefficient Alpha with Deleted Variable – Knowledge of Environment

Perception of Knowledge of Environment Competency			Cronbach Coefficient Alpha with Deleted Variable:	
	Mean	**St. Dev**	**Correlation with Total**	**Alpha**
Q12	3.7363	1.2635	0.5064	0.7918
Q13	3.1758	1.3548	0.4257	0.8009
Q14	4.2418	0.9109	0.4858	0.7937
Q15	4.0659	0.9522	0.4611	0.7952
Q16	4.3407	0.7777	0.4563	0.7966
Q17	4.6044	0.6125	0.4815	0.7975
Q18	3.4835	1.1486	0.2474	0.8134
Q19	4.5604	0.7182	0.5403	0.7927
Q20	4.4176	0.8701	0.4789	0.7944
Q21	4.0989	1.0226	0.3095	0.8066
Q22	4.1758	0.7831	0.4179	0.7988
Q23	3.3187	1.3571	0.554	0.7875
Q24	4.1648	0.8064	0.4374	0.7975
Q25	4.7692	0.5788	0.3077	0.8055
Q26	4.6374	0.6415	0.4481	0.7986

Note. Cronbach coefficient alpha for the perception of knowledge of the environment competency showing positive correlation with the total internal consistency score and the subscale of knowledge of Environment.

Table VI:

Cronbach Coefficient Alpha: Communication and Relationship Management Competency

Variables	Alpha
Raw	**0.5797**
Standardized	0.6181

Note. Cronbach coefficient alpha for Communication and Relationship Management domain α=0.58 which shows "poor" internal consistency according to George and Mallery, (2010).

Figure 10

Cronbach Coefficient Alpha with Deleted variable – Communication and Relationship Competency

Communication and Relationship Management Competency			Cronbach Coefficient Alpha with Deleted Variable:	
	Mean	**St. Dev**	**Correlation with Total**	**Alpha**
Q27	4.5222	0.7529	0.1419	0.5794
Q28	4.8111	0.4212	0.1918	0.5717
Q29	4.8444	0.4475	0.0748	0.5853
Q30	4.4556	0.8233	0.4763	0.5009
Q31	4.7889	0.711	0.2371	0.5599
Q32	4.6333	0.6439	0.4499	0.5212
Q33	2.2889	1.3841	0.2841	0.5585
Q34	2.3889	1.3213	0.2147	0.5815
Q35	4.3222	0.8049	0.3745	0.5272
Q36	3.1444	1.0553	0.3024	0.542

Note. Cronbach coefficient alpha for the Communication and Relationship Management competency showing poor correlation with the total internal consistency score and the subscale of communication and relationship management competency.

Table VII

Cronbach Coefficient Alpha - Professionalism Competency

Variables	Alpha
Raw	**0.5212**
Standardized	0.5773

Note. Cronbach Coefficient Alpha for professionalism competency α=0.52 which shows "unacceptable" internal consistency according to George and Mallery (2010).

Figure 11

Cronbach Coefficient Alpha with Deleted Variable-Professionalism

Professionalism Competency			Cronbach Coefficient Alpha with Deleted Variable:	
	Mean	**St. Dev**	**Correlation with Total**	**Alpha**
Q37	4.2857	0.992	0.1151	0.5335
Q39	2.4725	1.311	0.1454	0.5423
Q40	4.5385	0.6718	0.3733	0.4597
Q41	4.8462	0.3628	0.2433	0.5065
Q42	3.6923	1.2622	0.336	0.4465
Q43	4.6923	0.6445	0.338	0.4707
Q44	3.4176	1.2478	0.3504	0.4392
Q45	4.4615	0.8603	0.2419	0.4885

Note. Cronbach coefficient alpha for the professionalism competency showing unacceptable correlation with the total internal consistency score and the subscale of professionalism competency.

Figure 12

Analysis Summary of Reliability Statistic and Interpretation for HVDM© Tool

Reliability Statistic and Interpretation for HVDM Total and Domain/Competency Subscales (n= 90 respondents)						
	Total HVDM	**Leadership**	**Perception of Knowledge of Environment**	**Communication and Relationship Management**	**Professionalism**	**Business Skills and Knowledge**
Cronbach's Alpha	0.834	0ha.44	0.809	0.58	0.521	Unable to* calculate
Internal Consistency	"Good"	"Unacceptable"	"Good"	"Poor"	"Unacceptable"	N/A
Number of Items	45	11	15	10	8	1

Note. *Unable to calculate Cronbach's alpha for the "Business Skills and Knowledge" competency (1-item) because only a single item is contained within this subscale. Recommend increasing the number of items within the Business competency to provide sufficient data for calculation of reliability.

The Cronbach's alpha for the total HVDM tool (90 respondents, 45-items) with all five competencies was indicated as r=0.834, which revealed as a "good" internal consistency according to George and Mallery (2010).

On an individual competency/domain assessment, the reliability statistic and findings are as follows:

1. "Leadership" competency (11-items) had a calculated Cronbach's alpha of r=0.44 which indicates an "unacceptable" reliability statistic according to George and Mallery (2010).
2. "Perception of Knowledge of Environment" competency (15-items) had a calculated Cronbach's alpha of r=0.809 which indicates a "good" reliability statistic according to George and Mallery (2010).
3. "Communication and Relationship Management" competency (10-items) had a calculated Cronbach's alpha of r=0.58 which indicates "poor" reliability according to George and Mallery (2010).
4. "Professional" competency (8-items) had a calculated Cronbach's alpha of r=0. 521 which indicates an "unacceptable" reliability according to George and Mallery (2010).

Only "Perception of Knowledge of Environment" ranked "good" internal consistency as per the Cronbach alpha interpretation (George & Mallery, 2010). The remaining competencies, aside from Business, indicate "poor" and "unacceptable" internal consistency. This may be due to the lower number of items in these competencies compared to the Leadership competency which contained 15-items. Another factor that may have influenced responses and thereby impacted Cronbach's alpha is the phrasing of the item questions themselves. Therefore, it is recommended that the questions within the Leadership, Professionalism, and Communication competencies be rephrased for clarity and/or increase the number of questions within these subscales to

potentially improve the reliability statistic. This recommendation is especially encouraged regarding the "Business Skills and Knowledge" competency which had insufficient number of items (1 item only) to support Cronbach's alpha calculation.

Cronbach Coefficient Alpha with Deleted Variables for the total HVDM tool identified 2 negatively correlated questions specifically items Q3 and Q34. Item Q3 demonstrated a negative correlation with the total internal consistency score and the subscale of Leadership (increases the Cronbach's alpha from r=0.44 to r=0.51) thereby indicating a negative correlation to the Leadership competency (subscale) and the whole tool. It is recommended that this question be either rephrased or removed to improve the reliability of the tool. Item Q34 demonstrated negative correlation with the tool's total internal consistency score but ranked positively under the Communication subscale. Removing this question is not recommended since it does not show significant increase or decrease to the overall HVDM Cronbach's alpha or the subscale's Cronbach's alpha.

Kaiser-Meyer-Olkin test KMO assess how well suited the study data is for Factor Analysis and measures sampling adequacy per variable within the model. While Bartlett's test indicates whether there is correlation among the variable that can be summarized within a few factors.

Exploratory Factor Analysis (EFA)

Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of Sphericity.

KMO assesses how well suited the study data is for Factor Analysis and measures sampling adequacy per variable within the model and for the entire model itself. KMO returns values between 0 and 1, whereby values close to zero indicate unacceptable levels of partial correlations which indicates that factor analysis is unsuitable for the data model.

KMO can be interpreted as per Tabachnick and Fidell (2001):

0.00 to 0.49 unacceptable.

0.50 to 0.59 miserable.

0.60 to 0.69 mediocre.

0.70 to 0.79 middling.

0.80 to 0.89 meritorious.

0.90 to 1.00 marvelous.

Bartlett's Test of Sphericity evaluates whether the redundancies between variables are summarized within the factors, and whether there is a relationship present among the variables. This was achieved by comparing the correlational matrix with the identity matrix.

H_0: variables are uncorrelated/orthogonal (zero correlation)

H_A: variables are correlated/not orthogonal (non-zero correlation)

Table VIII

Statistical Analysis Details: Visualizations of Kaiser-Meyer-Olkin (KMO) and Bartlett's Test

KMO's Measure of Sampling Adequacy (MSA)	Overall MSA	0.8746
Bartlett's Test of Sphericity	Approximately Chi-Squared	3880.3133
	DF	990
	Pr > Chi Sq.	<.0001

Note: Analysis showing KMO = 0.8746 and Bartlett's Test = <.0001

Analysis Summary

Based on these findings, the KMO indicated a value of 0.875 which demonstrated a sampling suitability at a meritorious level as shown in Table VIII. As this is well beyond Kaiser's (1981) minimum acceptable value of 0.5, this indicated that the factors were more than adequate for sampling and supports the use of factor analysis.

Bartlett's test indicates whether there is correlation among the variables that can be summarized within a few factors. As the findings indicated a significant level of <0.0001, as shown in Table VIII. This indicated that the variables have relationships among each other and are suitable for factor analysis.

Factor analysis requires a large sample size and Tabachnick and Fidell (2001), indicates that sample sizes of 200 is fair, thus our sample size of 231 felt within acceptable range for conducting an EFA.

Unweighted least squares (ULS) EFA was calculated as the correction for the non-normally distributed data (Fabrigar et al., 1999; Nunnally & Bernstein, 1994). The orthogonal equamax rotation was applied due to the assumption of non-correlation among the factors, which is desired for assessing instrument development and balanced factor loadings (Munro, 2005).

Eigenvalues capture the amount of variance in each component and the initial components (questions) tend to capture the largest and most meaningful amount of variance. Items with values less than 1.0 show less variance than contributed by a single variable.

Figure 13

Eigenvalues

Preliminary Eigenvalues:

Total = 20.3794171 Average = 0.45287593

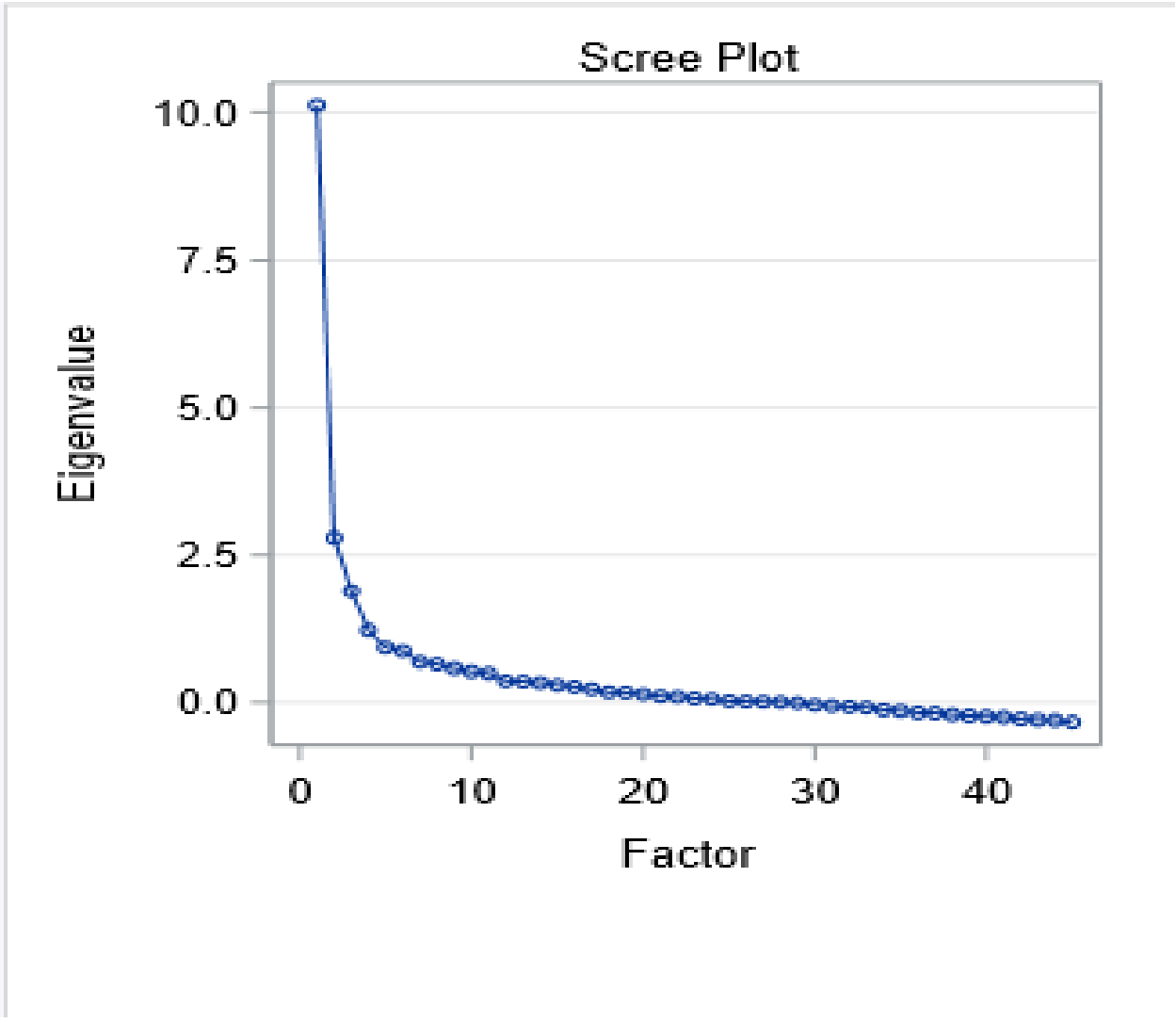
	Eigenvalue	Difference	Proportion	Cumulative		Eigenvalue	Difference	Proportion	Cumulative
1	10.1211	7.3273	0.4966	0.4966	24	0.0552	0.0356	0.0027	1.1480
2	2.7938	0.9045	0.1371	0.6337	25	0.0196	0.0054	0.0010	1.1490
3	1.8894	0.6618	0.0927	0.7264	26	0.0142	0.0060	0.0007	1.1497
4	1.2276	0.2928	0.0602	0.7867	27	0.0082	0.0073	0.0004	1.1501
5	0.9348	0.0632	0.0459	0.8325	28	0.0009	0.0156	0.0000	1.1501
6	0.8716	0.1853	0.0428	0.8753	29	-0.0147	0.0310	-0.0007	1.1494
7	0.6862	0.0377	0.0337	0.9090	30	-0.0457	0.0166	-0.0022	1.1472
8	0.6485	0.0728	0.0318	0.9408	31	-0.0623	0.0161	-0.0031	1.1441
9	0.5757	0.0540	0.0282	0.9690	32	-0.0784	0.0101	-0.0038	1.1403
10	0.5217	0.0317	0.0256	0.9946	33	-0.0886	0.0381	-0.0043	1.1359
11	0.4900	0.1261	0.0240	1.0187	34	-0.1267	0.0171	-0.0062	1.1297
12	0.3640	0.0073	0.0179	1.0365	35	-0.1437	0.0307	-0.0071	1.1226
13	0.3567	0.0233	0.0175	1.0540	36	-0.1745	0.0080	-0.0086	1.1141
14	0.3333	0.0393	0.0164	1.0704	37	-0.1824	0.0269	-0.0090	1.1051
15	0.2940	0.0299	0.0144	1.0848	38	-0.2093	0.0192	-0.0103	1.0949
16	0.2641	0.0398	0.0130	1.0978	39	-0.2285	0.0117	-0.0112	1.0836
17	0.2243	0.0508	0.0110	1.1088	40	-0.2402	0.0126	-0.0118	1.0719
18	0.1735	0.0081	0.0085	1.1173	41	-0.2528	0.0265	-0.0124	1.0595
19	0.1654	0.0274	0.0081	1.1254	42	-0.2794	0.0167	-0.0137	1.0457
20	0.1380	0.0318	0.0068	1.1322	43	-0.2960	0.0076	-0.0145	1.0312
21	0.1062	0.0115	0.0052	1.1374	44	-0.3036	0.0290	-0.0149	1.0163
22	0.0947	0.0285	0.0046	1.1421	45	-0.3326		-0.0163	1.0000
23	0.0662	0.0110	0.0032	1.1453					

Note. The first four items have an eigenvalues >1.0.

The Scree test (Cattell, 1966), as shown below in Figure 14, represents the relative values of eigenvalues and identifies a definitive separation between items with large eigenvalues (>1.0) and those with small eigenvalues (<1.0). The number of items greater accounts for 78.67% of total variance.

Figure 14

The Scree Test result



Note. The result of the Scree test.

Chapter 4

Results

Introduction

The purpose of this study was threefold to determine:

1. Develop a survey measurement tool (The HDVM© survey tool).
2. Test the reliability and validity of the HDVM© tool.
3. To use the HDVM© tool in the population.

This chapter focuses on the results of the statistical test of the dissertation study along with the analysis of the "Free text" component of the quasi-qualitative study for contextual understanding.

Characteristics of the Sample

Testing Representative Sampling - Power Analysis

For this study, the High Velocity Decision Making tool (HVDM) was sent to 1,788 participants in the United States and Canada. Of these participants, there were a total of 397 responses and of these responses only 231 responses were completed and met criteria (of the 397 responses, 95 responses were incomplete, and 69 responses did not meet eligibility criteria).

Population: 1,788 participants

- Number of responses: 397
    - Number of incomplete surveys: 95
    - Number of completed surveys *not* meeting criteria: 69
    - Number of completed surveys who meet criteria: 231
- Study sample: 231 participants

The study sample of 231 exceeded the total targeted sample size of 230 and demonstrated a power of 99.99% as calculated using G*Power 3.1.9.7 Correlations (Two independent Pearson

R's) for post hoc analysis calculation of achieved power (one-tailed, effect size (rho) of 0.05, alpha = 0.05, and sample sizes = 231). Therefore, it is concluded that the study data is a representative sampling of the population.

Figure 15

Post-hoc of G Power Analysis of Sample size*

Note. Post hoc of G*Power analysis of sample size of the two leadership groups.

Testing Independence and Random Sampling of Data from Population

Independence is demonstrated through assessment of the study design in that the there is no relationship between the DM scores in each sample. Due to the anonymity of survey

submission, no participant in one sample could influence the other as each survey response was received independently and no participants in sample 1 responses were present in sample 2 responses and vice versa.

Non-probability/non-random selection sampling was conducted; specifically purposive sampling and snowball sampling were utilized in this study. Study data collected were only from responses received from study participants who met study eligibility criteria.

Testing Normalcy of Study Data

A total score of each competency (Leadership, Knowledge, Communication, Professionalism, and Business) was calculated per respondent, based on summation of all questions corresponding to the competency per response. Thus, total competency scores were calculated for each (Total Communication Score, Total Professionalism Score, Total Knowledge of the Environment Score, and Total Leadership Score).

The normalcy test is used to assess whether the study data follows normal distribution. This assessment is critical for understanding whether parametric analysis is to be conducted (parametric is used for normally distributed data) or whether nonparametric analysis should be used (appropriate for not normally distributed data).

Testing Data Normalcy assesses whether the study data follows normal distribution and is proven using the Shapiro-Wilk test and Kolmogorov-Smirnov test.

Hypotheses:

- H_0: The study data is normally distributed.
- H_A: The study data is not normally distributed.

As per the table IX below, calculation of the Shapiro-Wilk test and Kolmogorov-Smirnov test for normality for each total competency score demonstrates a significant value (p value <0.05) indicating rejection of the null hypothesis. Consequently, it is concluded that the study data is not normally distributed, and that nonparametric analysis is to be utilized in answering the research questions.

Table IX

Tests for Normality (All Total Competencies)

	Shapiro-Wilk		Kolmogorov-Smirnov	
Competency	**Statistic (W)**	**p Value (Pr < W)**	**Statistic (D)**	**p Value (Pr > D)**
Total Leadership Score	0.9768	0.0008	0.1218	<0.0100
Total Knowledge Score	0.9748	0.0004	0.0666	0.0136
Total Communication Score	0.9883	0.0571*	0.0896	<0.0100
Total Professionalism Score	0.9867	0.0303	0.0704	<0.0100
Total Business Score	0.8657	<.0001	0.2309	<0.0100

Note. *Although Shapiro-Wilk indicates non-significant value and thereby acceptance of the null hypothesis, this does not correspond to Kolmogorov-Smirnov test which fails to accept the null hypothesis and is the most appropriate test for samples greater than 50. Therefore, we conclude in rejection of the null hypothesis.

HVDM© Tool – Scoring

The High Velocity Decision Making (HVDM) tool entails the following:

45 Likert questions

1 ranking question (ordinal data)

49 open-response/qualitative questions – assessed separately from this report.

Table X

HVDM©Survey Tool-Scoring

Domain/Competency	# of Questions	Min Score	Max Score	Mid-point Score	Variable
Leadership	11 (Q#1-11)	11	55	33	Likert scale
Perception of Knowledge of Environment	15 (Q#12-26)	15	75	23	Likert scale
Communication	10 (Q#27-36)	10	50	30	Likert scale
Professionalism	8 (Q#37-45) *	8	40	28	Likert scale
Business Skills – Pt 1	1 (Q#46)	1	5	3	Likert scale
Business Skills – Pt 2	1 (Q#47)				Ordinal data
Total HVDM Score	**46 ***	**45**	**225**	**140**	**N/A**

Note. *Question 38 was removed during the Delphi Method's iterative process, therefore the total number of questions in the HVDM© tool is 46 questions.

The HVDM© Likert questions address the domain/competency whether the competency/domain is a valid competency contributing to the total Decision Making (DM) score.

Leadership – valid competency when score is greater than or equal to 33

Perception of Knowledge of Environment – valid competency when score is greater than or equal to 23

Communication – valid competency when score is greater than or equal to 30

Professionalism – valid competency when score is greater than or equal to 28

Business Skills (Pt 1) – valid competency when score is greater than or equal to 3

For the total HVDM© score, a score of 140 – 225 indicates that the respondent can make effective decisions in a high velocity environment.

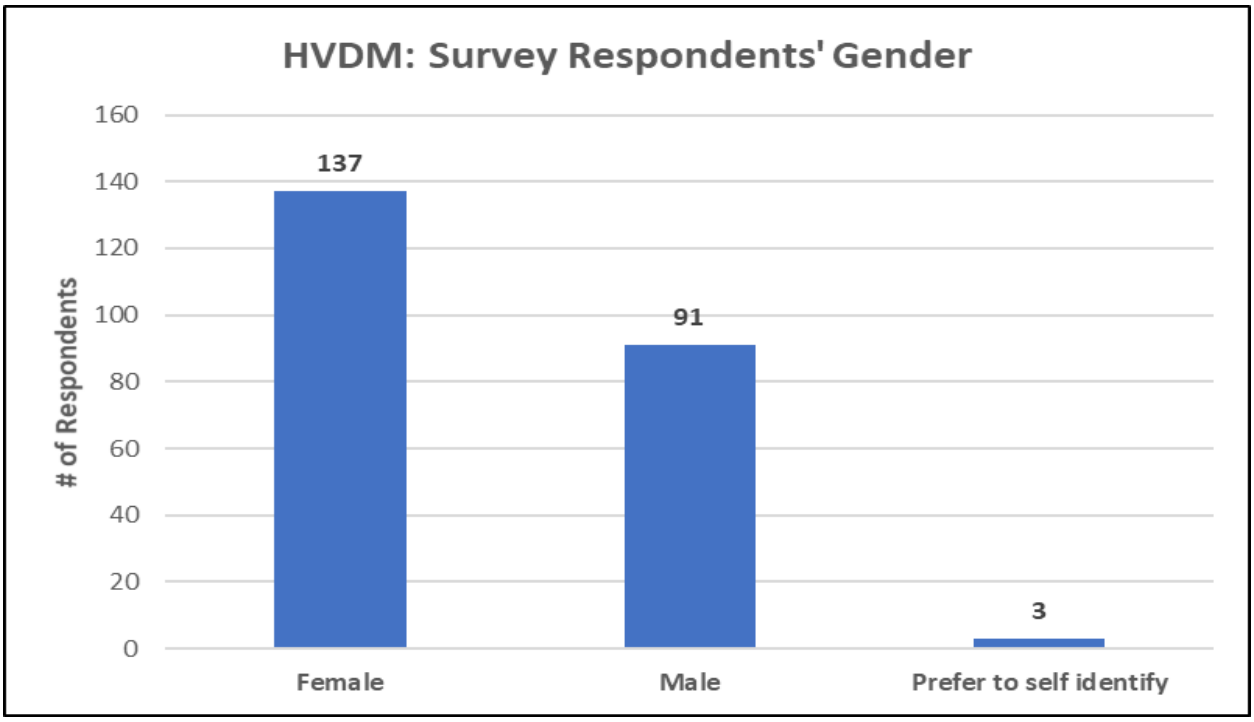
Descriptive Analysis Summary of Demographics of Sample Population N=231

HVDM© Survey respondent's Gender

More females than males took the survey. Of the total of 231 respondents, 137 were females, 91 were males, while 3 individuals preferred to self-identify.

Figure 16

Bar Graph of respondents according to gender



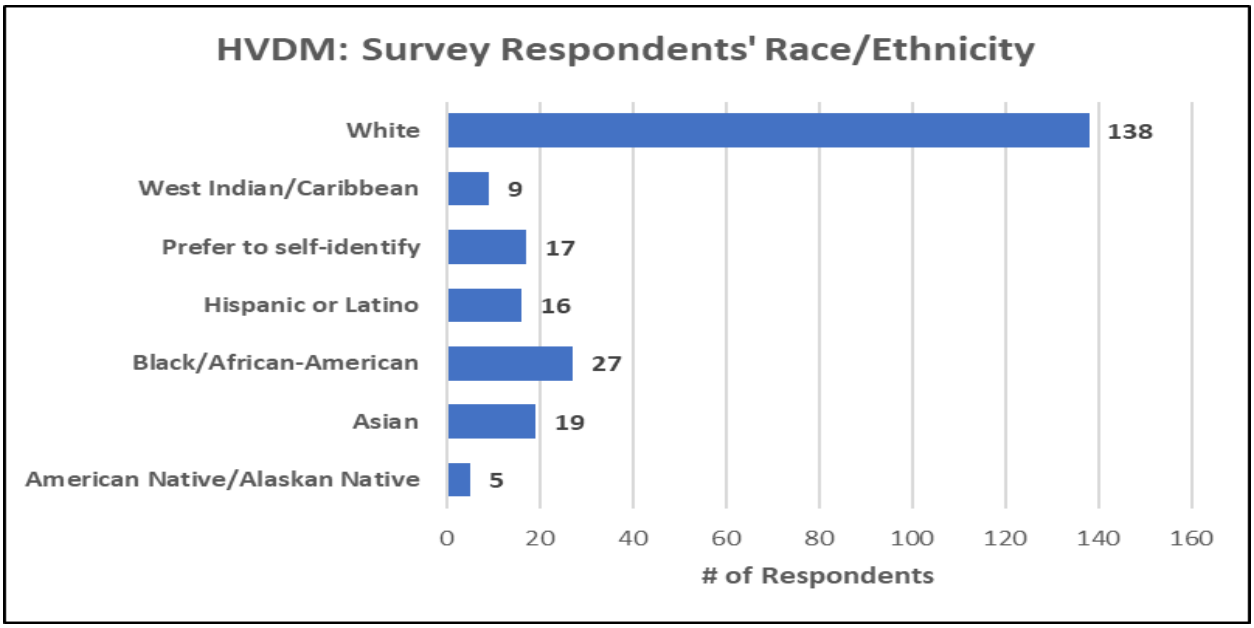
Note. The descriptive analysis summary of population N=231 for Gender of participants.

HDVM© Survey Respondent's Race/Ethnicity

Of the 231 respondents, the majority were Caucasians, 138.

Figure 17

Bar Graph of respondent's according to Race/Ethnicity



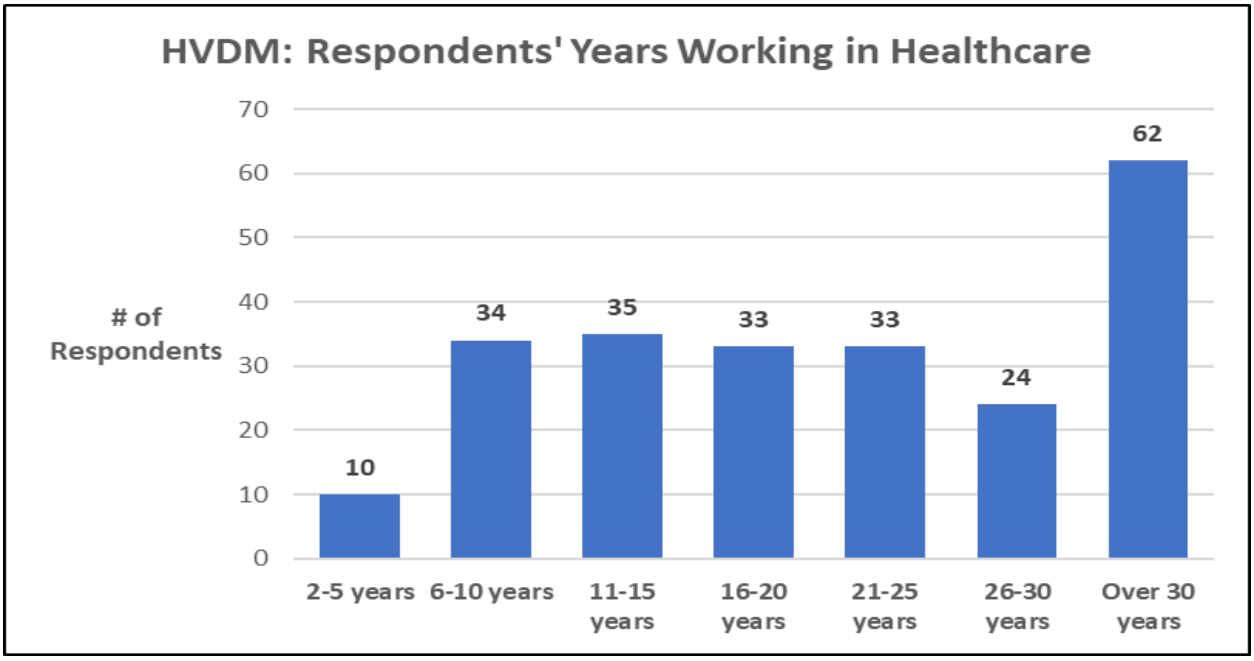
Note. The descriptive analysis summary of population N=231 for the Race/Ethnicity of the respondents.

HVDM© Survey Respondents' years working in healthcare

Of the 231 respondents, 62 had over 30 years of experience in leadership, while 10 individuals only had 2-5 years of working in healthcare.

Figure 18

Bar graph of respondents' years working in healthcare



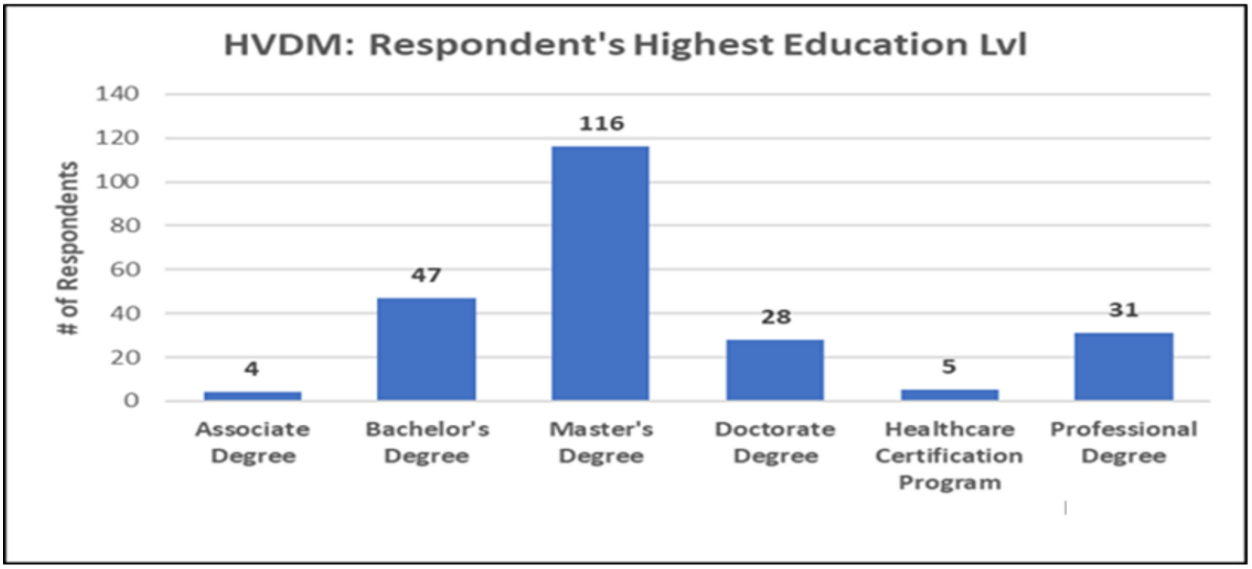
Note. The descriptive analysis summary of population N=231 for the number of years working in healthcare of the respondents.

HVDM© Survey Respondents' highest educational level

Of the 231 respondents, 116 had a master's degree, which is the most respondents.

Figure 19

Bar Graph of respondent's highest education level

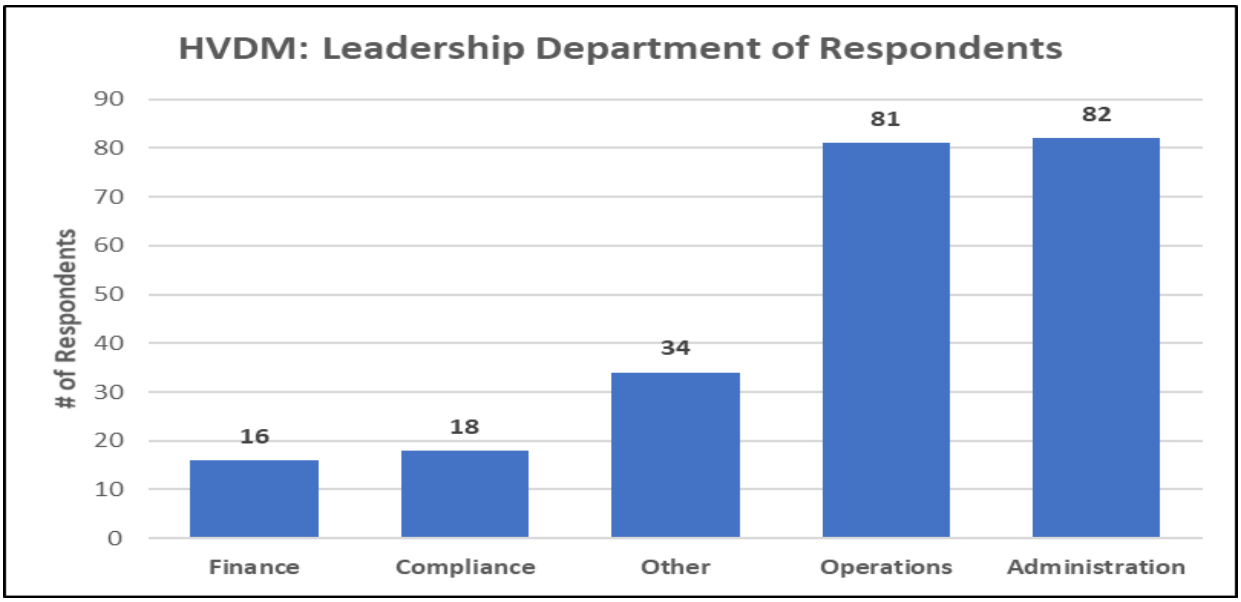


Note. The descriptive analysis summary of population N=231 for the highest education level of the respondents.

HVDM© Survey Respondents' leadership department

Of the 231 respondents, many leaders were from the Departments of Operations being `81 individuals and Administration being 82 leaders.

Figure 20: *Bar Graph of respondents' leadership department*



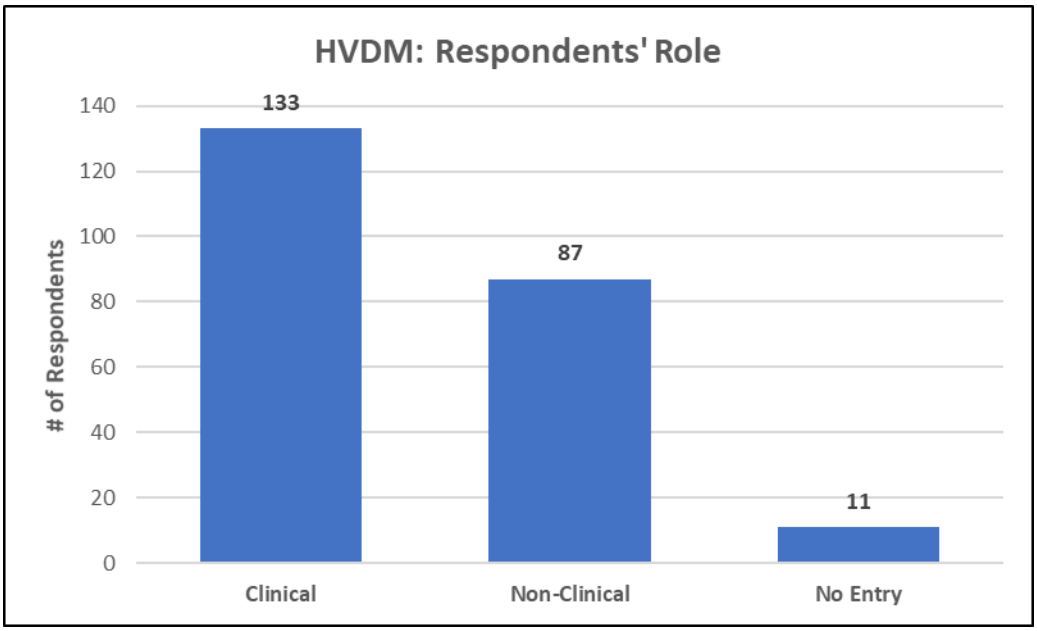
Note. The descriptive analysis summary of population N=231 for the identification of respondents' leadership department.

HVDM© Respondents' Role

Of the 231 participants, 137 were clinical being most participants, the other were non-clinical being 87, while 11 participants did not identify their roles.

Figure 21

Bar Graph of Respondents' roles



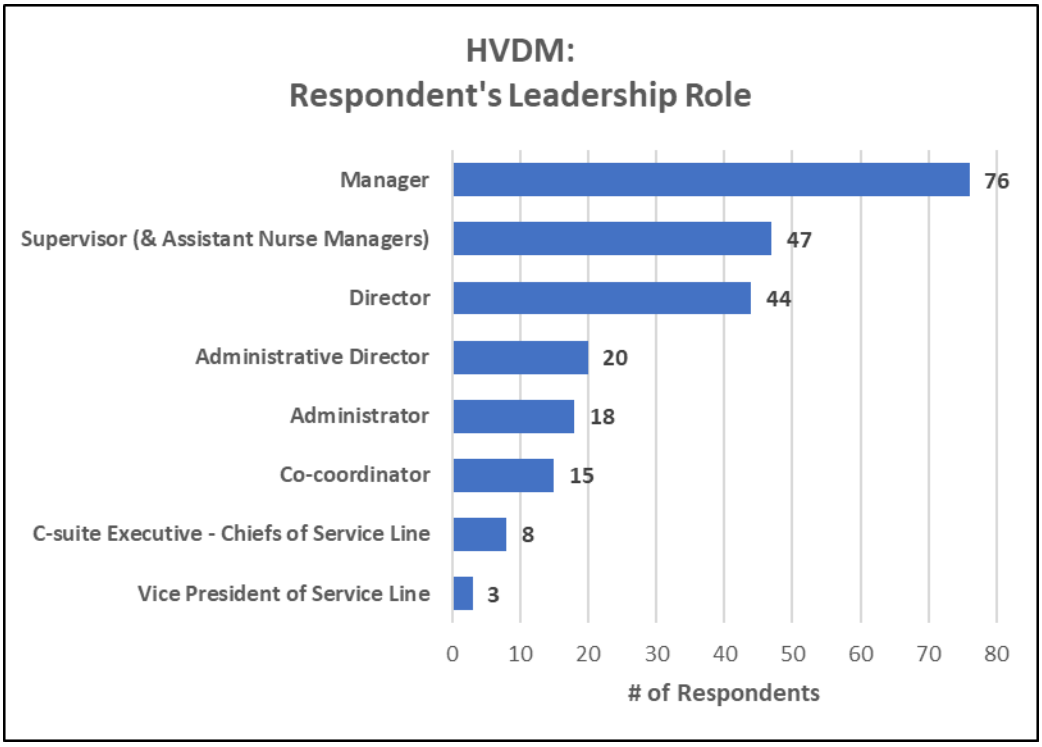
Note. The descriptive analysis summary of population N=231 for the respondents' role being clinical or non-clinical.

HVDM© Survey Respondent's leadership roles

Of the 231 respondents, 76 of the respondents were Managers, which was the majority.

Figure 22

Bar Graph of Respondents' Leadership roles



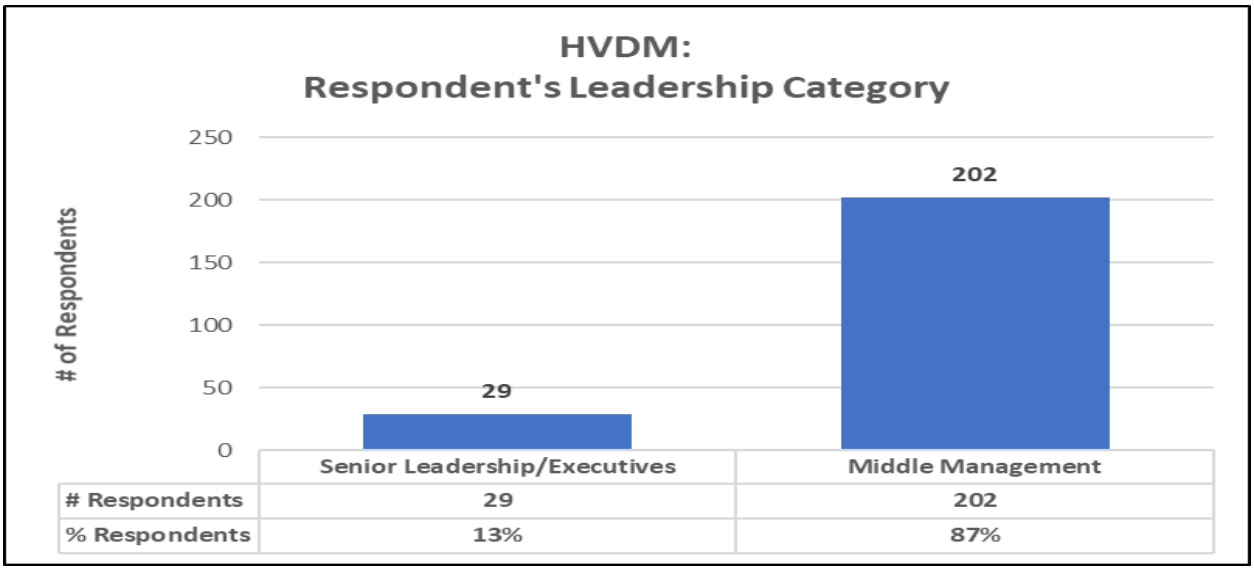
Note. The descriptive analysis summary of population N=231 for the respondents' leadership role.

HDVM© Survey Respondents' Leadership Category

Of the 231 respondents 13% of the respondents were members of the Senior Leadership/Executives group, while 87% were of the Middle Management group. This is a typical representation of healthcare environment where most of the leadership is focused on Middle Management, while Senior Leadership is rather small.

Figure 23

Bar Graph of respondents' leadership category



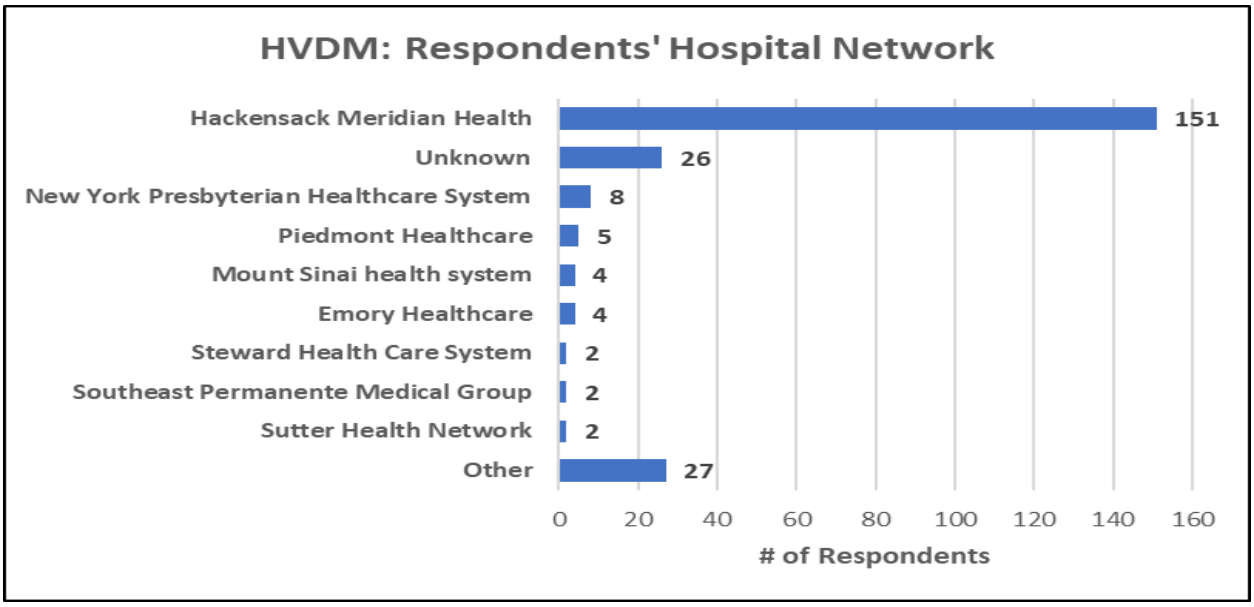
Note. The descriptive analysis summary of population N=231 for the respondents' leadership category, being middle management or senior leadership/Executives.

HVDM© survey respondents' Hospital Network

Of the 231 respondents, most of the respondents were from Hackensack Meridian Health which consisted of 151 individuals.

Figure 24

Bar Graph of respondents' Hospital Network



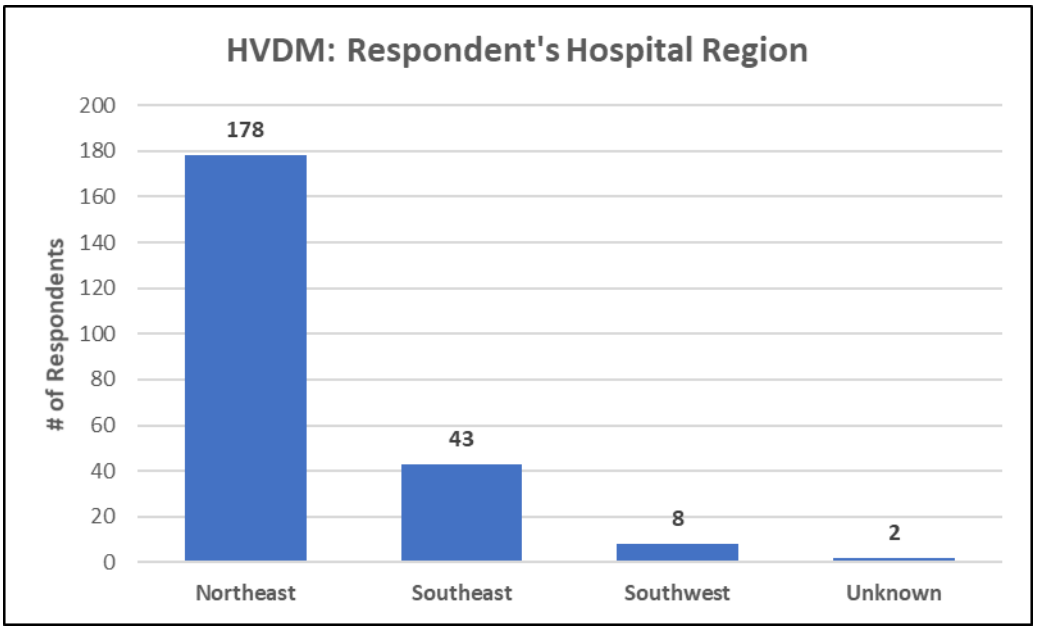
Note. The descriptive analysis summary of population N=231 for the respondents' hospital network.

HVDM© Survey Respondents by Hospital Geographical Location

Of the 8 identified healthcare systems, most respondents being 178 were geographically located in the Northeast region.

Figure 25

Bar Graph of respondents by Institutional geographic regions



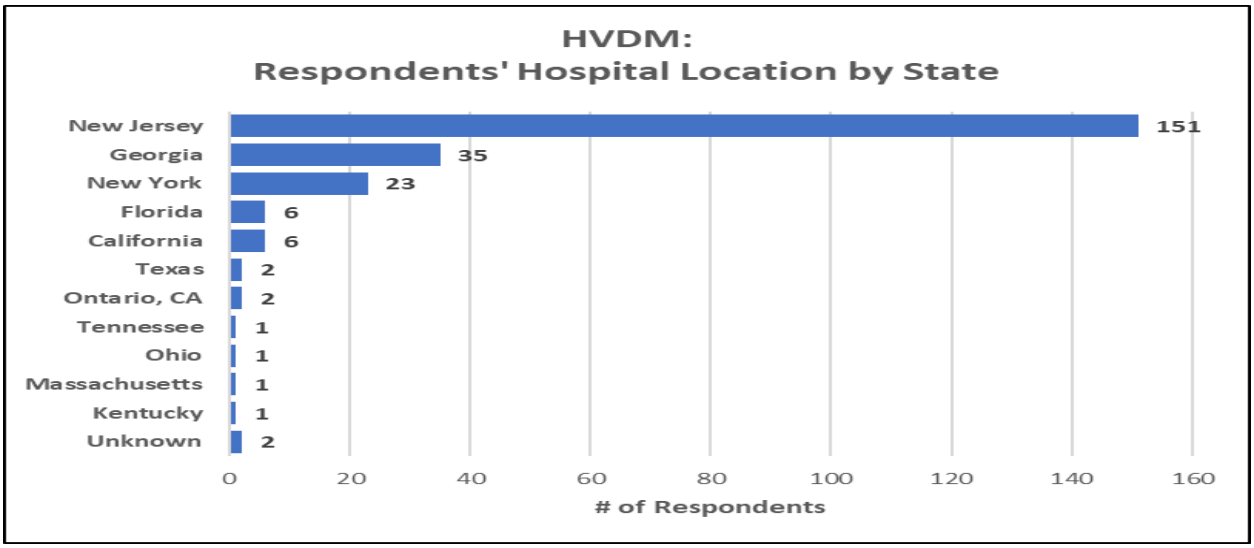
Note. The descriptive analysis summary of population N=231 for the respondents' hospital region (geographical).

HVDM© Survey Respondents by States

Of the 231 respondents, there were 151 from New Jersey which was the majority. The other States were represented due to Snowballing and consisted of 10 other states. There were 2 additional States, however, the respondents chose to be listed as unknown.

Figure 26

Bar Graph of respondents by States



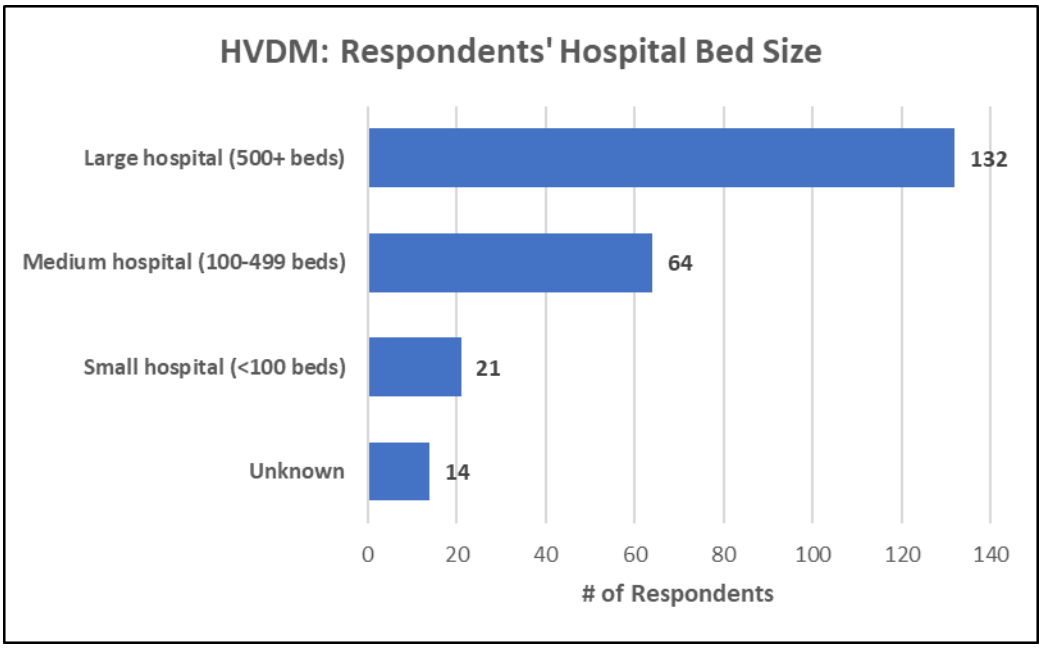
Note. The descriptive analysis summary of population N=231 for the respondents' hospital location by State.

HVDM© Survey Respondents' Hospital size (capacity)

Of the 231 respondents the majority held Leadership roles in large hospitals which consisted of 500+ bed capacity.

Figure 27

Bar Graph of Respondents' Hospital bed size



Note. The descriptive analysis summary of population N=231 for the respondents' hospital bed size (capacity).

Results of Research Question

Research question #1

DOES THE ACQUISITION OF COMMUNICATION, PROFESSIONALISM, HEALTHCARE BUSINESS SKILLS, KNOWLEDGE OF THE ENVIRONMENT, AND LEADERSHIP AS A COMPETENCY, INFLUENCE SUSTAINABILITY IN THE ORGANIZATION?

HA: THERE IS A RELATIONSHIP BETWEEN EACH COMPETENCY AND ORGANIZATION SUSTAINABILITY

HO: THERE IS NO RELATIONSHIP BETWEEN EACH COMPETENCY AND ORGANIZATION SUSTAINABILITY.

Correlation of Competencies to Leadership Duration

The Spearman rho Correlation was calculated to measure the strength of association between each independent variable (Total Communication Score, Total Professionalism Score, Total Knowledge of the Environment Score, Total Business score and Total Leadership Score) and the categorical variable (Duration).

Table XI

Correlational analysis - duration being coded as Categorical Variable

Code	1	2	3	4	5	6	7
Years in Leadership Role (Duration)	2-5 years	6-10 years	11-15 years	16-20 years	21-25 years	26-30 years	Over 30 years

Note. Categorical variable for the duration of years participants worked in healthcare.

Higher Spearman rho (ρ) correlation coefficients indicates a stronger magnitude of relationship between variables where ρ = -1 indicates perfectly negative relationship, ρ = 0 indicates no relationship and ρ = +1 indicates perfectly positive relationship. Spearman rho correlation coefficients that are closer to 0 indicate weaker relationship the closer the rho is to 0. For this analysis, the following guideline is used as shown in Table XII.

Table XII

Correlation Coefficient, Strength, and Type

Correlation coefficient	Correlation strength	Correlation type
-.7 to -1	Very strong	Negative
-.5 to -.7	Strong	Negative
-.3 to -.5	Moderate	Negative
0 to -.3	Weak	Negative
0	None	Zero
0 to .3	Weak	Positive
.3 to .5	Moderate	Positive
.5 to .7	Strong	Positive
.7 to 1	Very strong	Positive

Ratner, B. (2009)

Note. Correlation coefficient with correlation strength and type adapted from Adapted from "The correlation coefficient: Its values range between +1/-1, or do they?", by B. Ratner, 2009, Journal of Targeting, Measurement and Analysis for Marketing, 17, p. # 139-140, (https://doi.org/10.1057/jt.2009.5). Copyright 2009 by Springer Nature.

Table XIII

Spearman rho Correlation Coefficients (Organizational Sustainability)

Spearman Correlation Coefficients, N = 231 Prob > |r| under H0: Rho=0						
		Leadership	**Knowledge**	**Communication**	**Professionalism**	**Business ***
Duration	Spearman rho	0.1652	-0.04758	-0.04437	-0.03277	-0.14811
	Pr > |r|	0.0119	0.4717	0.5022	0.6203	0.0244

Note. The spearman rho correlation coefficients between the competencies/construct with organizational sustainability.

The total score of each competency was compared to the duration of time the respondent was in their leadership role, therefore, correlation was conducted between the categorical variable (Duration) and each of the aggregate independent variables (Total Communication Score, Total Professionalism Score, Total Knowledge of the Environment Score, and Total Leadership Score).

Overall, the competencies demonstrated nearly zero correlation to the number of years respondents were in their leadership roles, as shown in Table XIII. There is nearly no relationship between the number of years in leadership and each of the 5 competencies.

- Total Leadership competency: A 0.165 (p value 0.0119) shows an overall weak positive correlation ($\rho<0.5$) between the Total Leadership score and years of leadership, with a closer correlation to no correlation between the constructs of leadership and years of leadership.
- The Knowledge of Healthcare Environment: A-0.048 (p value 0.4717) shows an overall weak negative correlation between the Total Perception of Knowledge of Environment score and years of leadership, with a closer correlation to no correlation between the constructs of knowledge of healthcare environment and years of leadership.
- The Communication competency: A -0.044 (p value 0.5022) shows an overall weak negative relationship between the construct of Total Communication & relationship management score and years of leadership, with a closer correlation to no correlation between the constructs of Communication & relationship management and years of leadership.

- The Professionalism competency: A-0.033 (p value 0.6203) shows an overall weak negative relationship between the Total Professional score and years of leadership, with a closer correlation to no correlation between the constructs of Professionalism and years of leadership.

Limitation*

- Total Business competency: A-0.148 (p value 0.0244) shows an overall weak negative relationship between the Total Business score and years of leadership, with a closer correlation to no correlation between the construct of Business competency and years of leadership. However, due to this competency's content of only 1-item, the analysis cannot be considered valid until additional items can be included for more robust correlational analysis.

Research Question 2

IS THERE A RELATIONSHIP BETWEEN COMMUNICATION, PROFESSIONALISM, HEALTHCARE BUSINESS SKILLS, KNOWLEDGE OF THE ENVIRONMENT AND LEADERSHIP AND MAKING EFFECTIVE DECISIONS IN A HIGH VELOCITY ENVIRONMENT?

HA: THERE IS A POSITIVE RELATIONSHIP BETWEEN EACH COMPETENCY AND EFFECTIVE DECISION MAKING IN A HIGH VELOCITY ENVIRONMENT.

HO: THERE IS NO POSITIVE RELATIONSHIP BETWEEN EACH COMPETENCY AND EFFECTIVE DECISION MAKING IN A HIGH VELOCITY ENVIRONMENT.

Correlation of Competencies to Decision Making

Table XIV

Spearman Rho correlation (Decision – making in high velocity environment)

Spearman Rho Correlation Coefficients, N = 231 Prob > |r| under H0: Rho=0						
		Leadership	**Knowledge**	**Communication**	**Professionalism**	**Business***
DM	Spearman rho (*ρ*)	**0.5910**	**0.8591**	**0.7335**	**0.7017**	0.3584
	Pr > |r|	<.0001	<.0001	<.0001	<.0001	<.0001

Note. Spearman rho correlation between the competencies and decision making in a high velocity environment.

Analysis Summary as shown in Table XIV:

- Total Leadership competency had a Spearman Rho Correlation of 0.591 which demonstrates a significant (p value <.0001) and strong positive relationship (ρ >0.5) between the Total Leadership score and total DM scores. This indicates total leadership scores increase as the DM score increases.
- The Knowledge competency had a Spearman Rho Correlation of 0.859 demonstrated a significantly (p value <.0001) very strong positive relationship (ρ >0.7) between the Total Perception of Knowledge of Environment score and the DM score. As Total Knowledge scores increase, total DM scores also increase.
- The Communication competency had a Spearman Rho Correlation of 0.734 which demonstrated a significantly (p value <.0001) very strong positive relationship (ρ >0.7) between the Total communication & relationship management score and the DM score. As Total Communication scores increase, total DM scores also increase.

- The Professional competency had a Spearman Rho Correlation of 0.702 demonstrated a significantly (p value <.0001) very strong positive relationship (ρ >0.7) between the Total Professional score and the DM score; thereby showing that as Total Professional scores increase, total DM scores also increases.
- Total Business competency had a Spearman Rho Correlation of 0.358 demonstrated a significant (p value <.0001) moderately positive relationship (ρ >0.3) between the Total Business score and the DM score. However, due to this competency's comprisal of only 1-item, the analysis cannot be considered valid until added items can be included for more robust correlational analysis.

Higher Spearman rho (ρ) correlation coefficients indicates a stronger magnitude of relationship between variables where ρ = -1 indicates perfectly negative relationship, ρ = 0 indicates no relationship and ρ = +1 indicates perfectly positive relationship. Spearman rho correlation coefficients that are closer to 0 indicate weaker relationship the closer the rho is to 0. For this analysis, the following guideline is used, as shown in Table XV.

Table XV

Correlation Coefficient, Strength, and Type

Correlation coefficient	Correlation strength	Correlation type
-.7 to -1	Very strong	Negative
-.5 to -.7	Strong	Negative
-.3 to -.5	Moderate	Negative
0 to -.3	Weak	Negative
0	None	Zero
0 to .3	Weak	Positive
.3 to .5	Moderate	Positive
.5 to .7	Strong	Positive
.7 to 1	Very strong	Positive

Ratner, B. (2009)

Note. Correlation coefficient with correlation strength and type Adapted from "The correlation coefficient: Its values range between +1/-1, or do they?", by B. Ratner, 2009, Journal of Targeting, Measurement and Analysis for Marketing, 17, p.139-140. (https://doi.org/10.1057/jt.2009.5). Copyright 2009 by Springer Nature.

Overall, each competency demonstrated a significant positive relationship with total DM scores; therefore, the null hypothesis is rejected.

Research Question 3

WHERE A POSITIVE RELATIONSHIP HAS BEEN IDENTIFIED, WHICH COMPETENCY HAS THE HIGHEST IMPACT ON DECISION-MAKING IN A HIGH VELOCITY ENVIRONMENT?

Table XVI

Statistical Analysis Detail: Highest Correlation

Spearman Rho Correlation Coefficients, N = 231 Prob > |r| under H0: Rho=0						
		Leadership	**Knowledge**	**Communication**	**Professionalism**	**Business**
DM	Spearman rho	0.5910	**0.8591**	0.7335	0.7017	0.3584
	Pr > |r|	<.0001	**<.0001**	<.0001	<.0001	<.0001

Note. Spearman Rho correlation of Knowledge of Environment Rho=0.86 as having the highest impact on decision – making.

Analysis Summary of Table XVI showing identified competency with the highest impact on decision making. The Total Perception of Knowledge of Environment scores demonstrated the highest Spearman Rho Correlation of 0.859 (p value <.0001) indicating the strongest positive relationship with total decision-making scores as seen in table XVII.

Table XVII

Correlation Coefficient, Strength, and Type

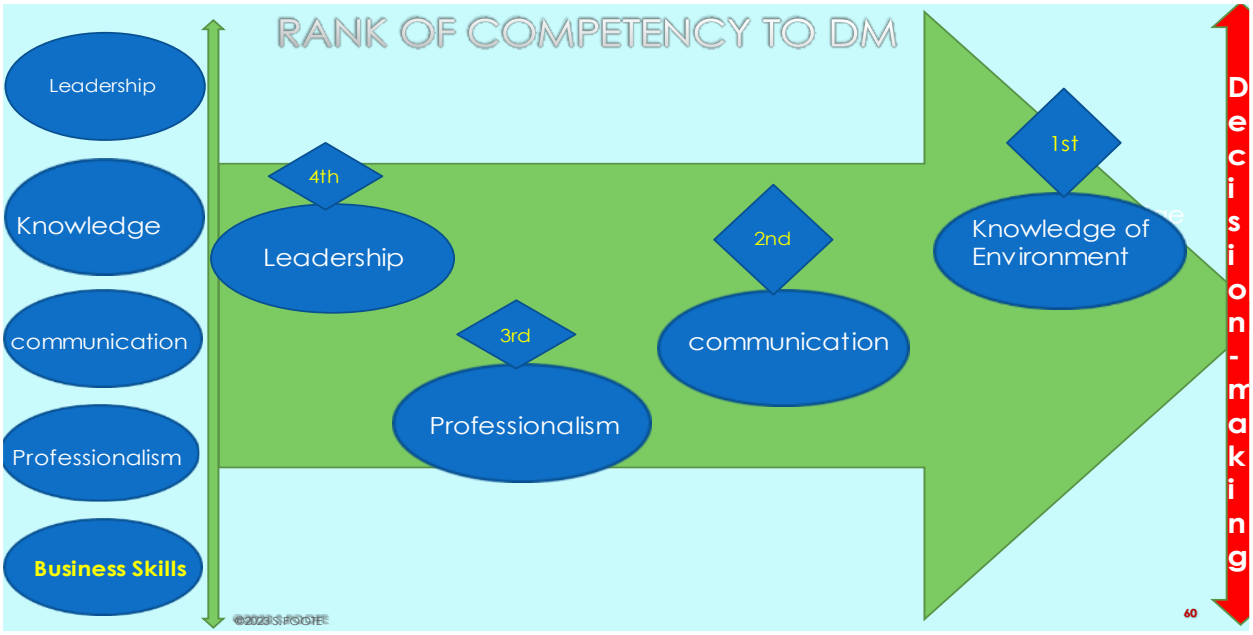
Correlation coefficient	Correlation strength	Correlation type
-.7 to -1	Very strong	Negative
-.5 to -.7	Strong	Negative
-.3 to -.5	Moderate	Negative
0 to -.3	Weak	Negative
0	None	Zero
0 to .3	Weak	Positive
.3 to .5	Moderate	Positive
.5 to .7	Strong	Positive
.7 to 1	Very strong	Positive

Ratner, B. (2009)

Note. Correlation coefficient with correlation strength and type. Adapted from "The correlation coefficient: Its values range between +1/-1, or do they?", by B. Ratner, 2009, Journal of Targeting, Measurement and Analysis for Marketing, 17, p.139-140. (https://doi.org/10.1057/jt.2009.5). Copyright 2009 by Springer Nature.

Figure 28

Rank of Competency with highest impact on Decision-Making



2023©SFoote

Note. Ranking of competencies to decision-making from highest being Knowledge of Environment to least being leadership. Business skills competency was not ranked.

As shown in Figure 28, Based on the spearman's rho correlation score the competency which has the highest impact is Knowledge of the Environment. While Communication is second, Professionalism is 3rd and Leadership is fourth. Business skills which had the least impact on decision making were not ranked due to this competency comprisal of only 1-item, the analysis therefore cannot be considered valid until additional items can be included for more robust correlational analysis.

RESEARCH QUESTION 4

HOW MUCH DOES EACH COMPETENCY IMPACT DECISION MAKING IN MIDDLE LEVEL MANAGEMENT AND SENIOR/EXECUTIVE LEVEL DECISION MAKING IN A HIGH VELOCITY ENVIRONMENT?

HA: THERE IS A SIGNIFICANT RELEVANT CONTRIBUTION OF EACH OF THE 5 COMPETENCIES BETWEEN THE MIDDLE LEVEL MANAGEMENT/LEADERS AND SENIOR/EXECUTIVE LEADERS IN DECISION MAKING IN A HIGH VELOCITY ENVIRONMENT.

HO: THERE IS NO SIGNIFICANT RELEVANT CONTRIBUTION OF EACH OF THE 5 COMPETENCIES BETWEEN THE MIDDLE LEVEL MANAGEMENT/LEADERS AND SENIOR/EXECUTIVE LEADERS IN DECISION MAKING IN A HIGH VELOCITY ENVIRONMENT.

Representative Sampling

When grouped by leadership level, the number of executive responses (44) in the sample was smaller in comparison to the number of middle management responses (187), as shown in table XVIII. This resulted in a ratio of 4.25:1 when comparing middle management sample size to executive sample size.

Table XVIII

Decision-Making responses by Leadership level of unbalanced samples

DM Responses by Leadership Level: Original (Unbalanced) Samples								
Category	**N**	**Mean**	**Std Dev**	**Std Err**	**Median**	**Minimum**	**Maximum**	**Quartile Range**
Executive	**44**	177.3	15.3665	2.3166	175	133.0	225.0	22.5
Middle Management	**187**	178.6	16.3331	1.1944	179	133.0	224.0	22

Note. Decision-making responses by leadership groups being executive/senior leadership and middle management showing ratio of 4.25:1 Adapted from Intermediate Statistics: A Modern Approach (2nd ed., p.38), by J. P. Stevens, 1999, Lawrence Erlbaum Associates Publishers. Copyright 1999 by James P. Stevens.

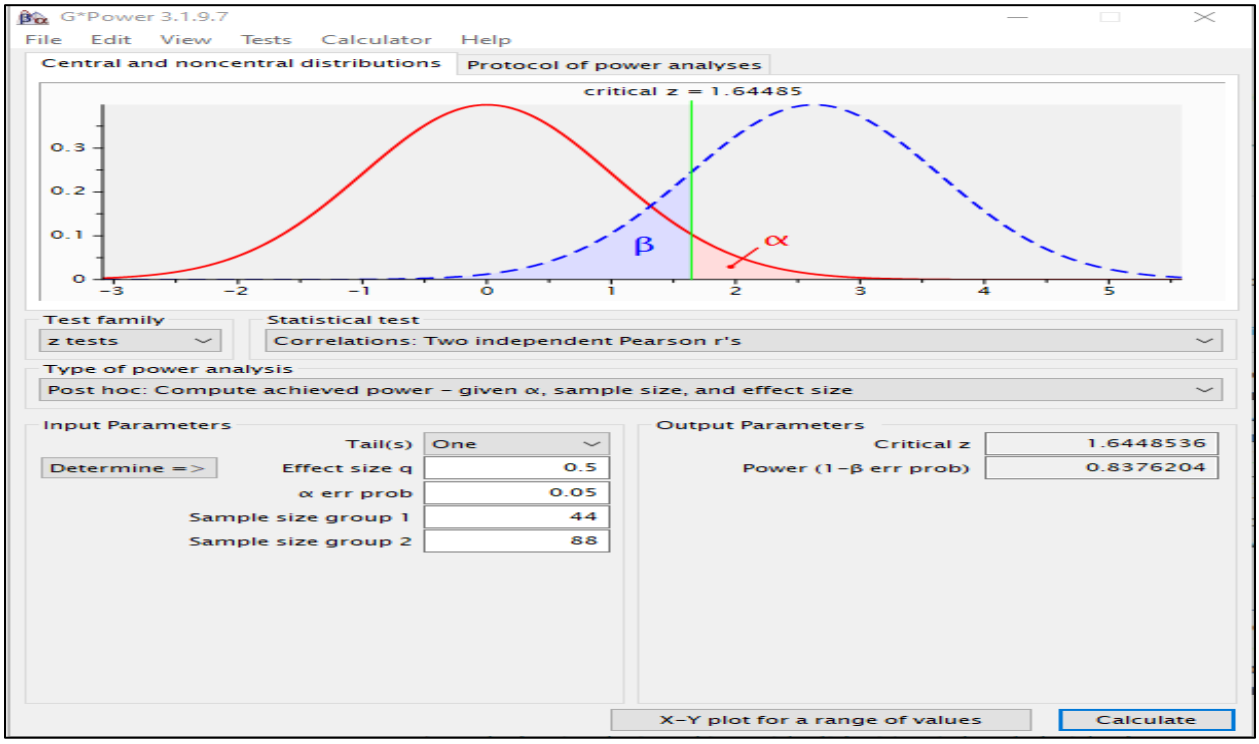
Due to the high inequality, a balanced design is recommended with a maximum ratio of 2:1. Balanced designs are preferred for statistical tests since the test will have greater statistical power and will be less susceptible to variation from the equal variance assumption (Stevens, 1999). Therefore, the middle management sample size of 88 was randomly selected from the 187 received responses in comparison to the executive group with a sample size of 44.

Random Selection Process

- The MS Excel "=rand()" function was utilized to generate the random number lists that facilitated the randomized selection of entries from the middle management group
- Middle management entries were entered in the first column of an MS Excel spreadsheet. The second column contained their corresponding decision-making score with the third column containing the rand() function.
- A sort was conducted according to the third column containing random numbers. By sorting, the list of subjects in the middle management group was randomized.
- The first 88 randomized middle management entries were selected as the balanced design sample of middle management leaders used for comparison to the executive leader group.

Figure 29

*G*Power Analysis, testing representative sampling of two groups*



Note. G*Power analysis of sample size for the two leadership groups.

As featured in figure 29, using a balanced design of 2 independent samples (size 44 and 88 respectively) demonstrated a power of 83.76% as calculated using G*Power 3.1.9.7 *z*-tests correlations two independent Pearson r's post hoc analysis calculation of achieved power (one-tailed, effect size (q) of 0.05, alpha = 0.05, sample size 1 = 44, sample size 2 = 88).

Spearman's rho is equivalent to the 2 independent Pearson r's calculation in G*Power 3.1.9.7 (Faul et al., 2009), therefore it can be concluded that the two samples are a representative sampling of the population.

Table XIX

Spearman Rho Correlation Coefficients by Groups

			Spearman Rho Correlation Coefficients, N = 231 Prob > |r| under H0: Rho=0				
			Leadership	**Knowledge**	**Communication**	**Professionalism**	**Business**
Executive	DM	Spearman rho	0.2121	0.8617	0.7968	0.6272	0.5094
		Pr > |r|	0.1669	<.0001	<.0001	<.0001	0.0004
Middle Management	DM	Spearman rho	0.6223	0.8566	0.7011	0.7053	0.2568
		Pr > |r|	<.0001	<.0001	<.0001	<.0001	0.0157

Note. Spearman rho correlation coefficients of both leadership groups, being Executive/Senior Leadership and Middle management.

Table XX

Correlation Coefficient, Strength, and Type

Correlation coefficient	Correlation strength	Correlation type
-.7 to -1	Very strong	Negative
-.5 to -.7	Strong	Negative
-.3 to -.5	Moderate	Negative
0 to -.3	Weak	Negative
0	None	Zero
0 to .3	Weak	Positive
.3 to .5	Moderate	Positive
.5 to .7	Strong	Positive
.7 to 1	Very strong	Positive

Ratner, B. (2009)

Note. Correlation coefficient with correlation strength and type. Adapted from "The correlation coefficient: Its values range between +1/-1, or do they?", by B. Ratner, 2009, Journal of Targeting, Measurement and Analysis for Marketing, 17, p. 139-140. (https://doi.org/10.1057/jt.2009.5). Copyright 2009 by Springer Nature.

Overall, both Executives and Middle Management leaders demonstrated a positive relationship as seen in Table XIX, between each competency with ($\rho > 0$) and total DM scores as shown in Table XX; therefore, the null hypothesis is rejected.

Executives:

Total Leadership competency demonstrated an insignificant and weak positive relationship ($\rho < 0.3$) with Decision Making scores for Executives.

- The Knowledge competency demonstrated a significantly (p value <.0001) very strong positive relationship ($\rho > 0.7$) between the Total Perception of Knowledge of Environment score and the DM score for Executives.
- The Communication & relationship management competency showed a significant, strong positive relationship ($\rho > 0.5$) with Executives' Decision Making.
- Professional competency demonstrated a significant and strong positive relationship with Executives' Decision Making.

Middle Management:

- Total Leadership competency demonstrated a significant and strong positive relationship with *Middle Management* leaders' Decision Making.
- The Perception of Knowledge of Environment competency demonstrated a significantly very strong positive relationship with *Middle Management* leaders' Decision Making.
- The Communication & relationship management competency showed a significant and very strong positive relationship ($\rho > 0.7$) with *Middle Management* leaders' Decision Making.

- The Professional competency demonstrated a significant and very strong positive relationship ($\rho > 0.7$) with *Middle Management* leaders' Decision Making.

Recommendations/Limitations

Despite the conclusions of the analysis, the Business Competency contains only 1-item; therefore, the analysis for the Business Competency cannot be considered valid until added items can be included for more robust correlational analysis.

- Total Business competency demonstrated a significant moderately positive relationship ($\rho > 0.5$) with Executives' Decision Making.
- Although total Business competency demonstrated significance, there was a weak positive relationship ($\rho < 0.3$) with Middle Management leaders' Decision Making.

Research Question 5

IS THERE A DIFFERENCE BETWEEN THE MIDDLE LEVEL MANAGERS/LEADERS AND SENIOR/EXECUTIVE LEADERS IN DECISION MAKING IN A HIGH VELOCITY ENVIRONMENT?

HA: THERE IS A DIFFERENCE BETWEEN MIDDLE LEVEL MANAGEMENT/ LEADERS AND SENIOR/EXECUTIVE LEADERS IN THE DECISION MAKING IN A HIGH VELOCITY ENVIRONMENT.

HO: THERE IS NO DIFFERENCE BETWEEN THE MIDDLE LEVEL MANAGEMENT/ LEADERS AND SENIOR/EXECUTIVE LEADERS IN DECISION MAKING IN A HIGH VELOCITY ENVIRONMENT.

TABLE XXI

COMPARATIVE ANALYSIS OF BOTH GROUPS

DM Responses by Leadership Level: Original (Unbalanced) Samples								
Category	**N**	**Mean**	**Std Dev**	**Std Err**	**Median**	**Minimum**	**Maximum**	**Quartile Range**
Executive	44	177.3	15.3665	2.3166	175	133.0	225.0	22.5
Middle Management	187	178.6	16.3331	1.1944	179	133.0	224.0	22

DM Responses by Leadership Level: Balanced Samples (2:1 Ratio)								
Category	**N**	**Mean**	**Std Dev**	**Std Err**	**Median**	**Minimum**	**Maximum**	**Quartile Range**
Executive	44	177.3	15.3665	2.3166	175	133.0	225.0	22.5
Middle Management	88	179.0	16.36	1.7443	179.5	134.0	213.0	24

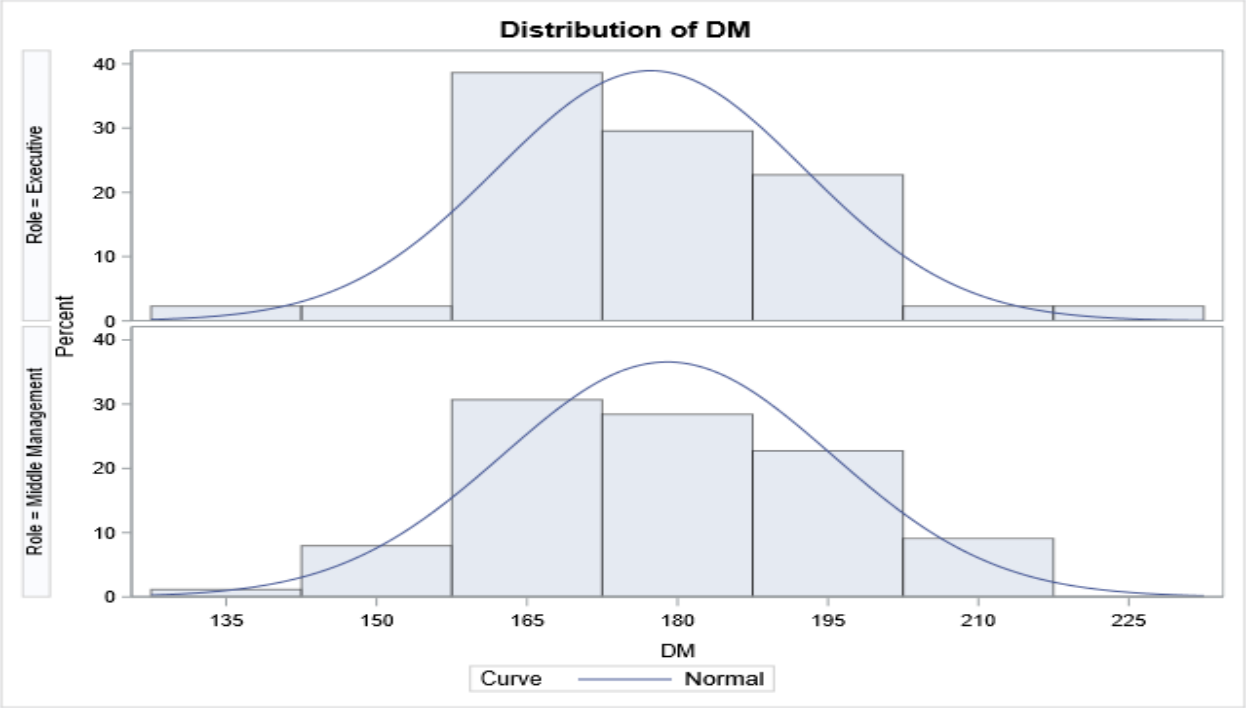
Note. Comparative analysis of both groups with balance samples where ratio = 2:1, and unbalanced samples where ratio = 4.25:1.

When grouped by leadership level, the number of executive responses (44) in the sample was smaller in comparison to the number of middle management responses (187). This resulted in a ratio of 4.25:1 when comparing middle management sample size to executive sample size, as shown in table XXI.

Due to the high inequality, a balanced design is recommended with a maximum ratio of 2:1. Balanced designs are preferred for statistical tests since the test will have greater statistical power and will be less susceptible to variation from the equal variance assumption (Stevens, 1999). Therefore, the middle management sample size of 88 was randomly selected from the 187 received responses in comparison to the executive group with a sample size of 44, shown in table XXI.

Figure 30

Distribution Graph of Decision-Making (DM)



Note. Distribution graph of decision – making between both groups, being middle management and executive/senior leadership group.

The non-parametric Mann-Whitney U test was conducted to compare the difference in decision making (DM) scores between two groups: middle level leaders and executive (senior/executive) leaders.

Independence is demonstrated through assessment of the study design in that the there is no relationship between the DM scores in each sample. Due to the anonymity of survey submission, no participant in one sample could influence the other as each survey response was

received independently and no participants in sample 1 responses were present in sample 2 responses and vice versa.

Response variable is ordinal or continuous as demonstrated by the response variable, decision-making, which is continuous. The executive level group has a median DM score of 175 while the middle management group has a median DM score of 179.5 which is a 4.5 difference in decision-making score, as shown in Figure 30.

Distribution shapes for both groups are similar as shown in the distribution graph, "Distribution of Decision - Making," Figure 30.

Table XXII

Mann-Whitney U Test

Mann-Whitney U Test for Variable DM* Classified by Leadership Category

Role	N	Sum of Scores	Expected Under H_0	Std Dev Under H_0	Mean Score
Middle Management	88	5974	5852	207.0907	67.88636
Executive	44	2804	2926	207.0907	63.72727

**Average scores were used for ties*

Mann-Whitney U Two-Sample Test

Statistic	Z*	Pr < Z	Pr > |Z|	t Approximation	
				Pr < Z	Pr > |Z|
2804	-0.5867	0.2787	0.5574	0.2792	0.5584

**Z includes a continuity correction of 0.5.*

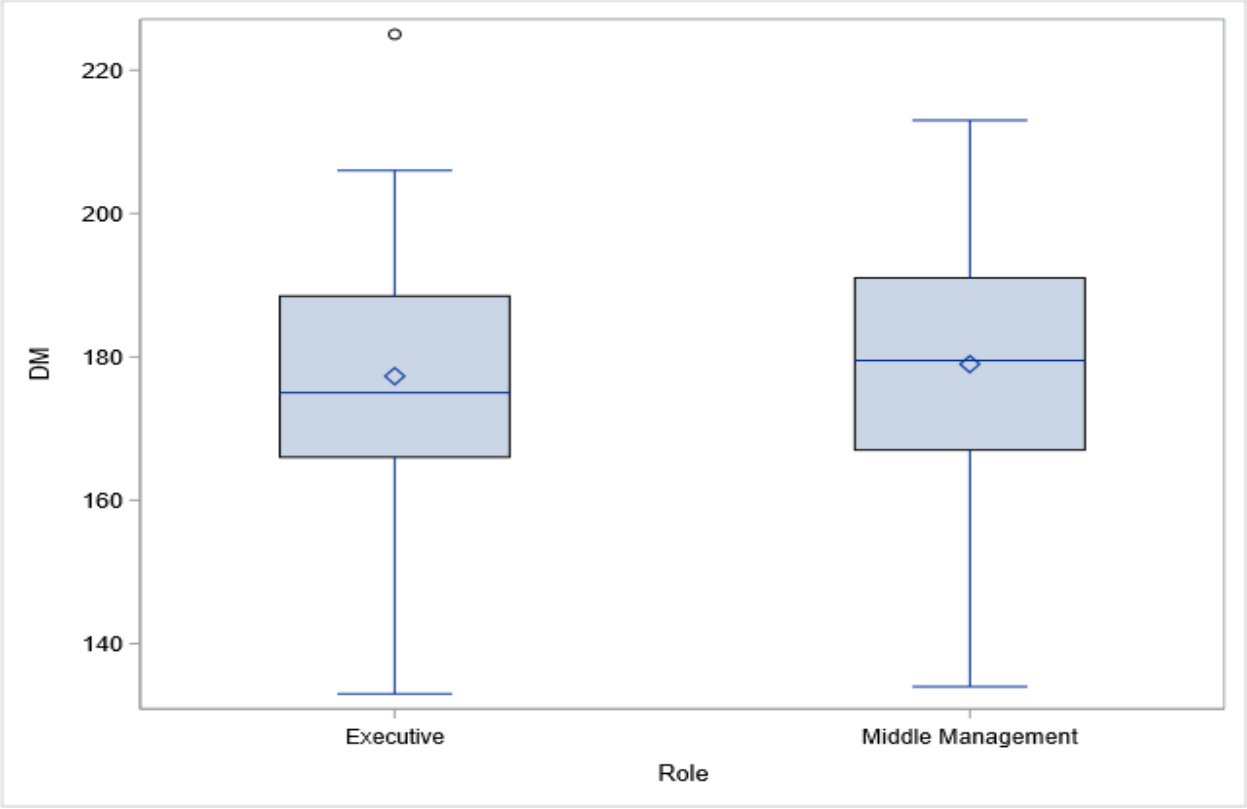
Note. Mann-Whitney U test for comparison of decision-making variable between both groups.

The non-parametric Mann-Whitney U test was conducted to compare the difference in decision making (DM) scores between two groups: middle level leaders and executive (senior/executive) leaders as shown in Table XXII.

The Mann-Whitney U test results in the test p-value of 0.5574 which indicates that we fail to reject the null hypothesis and conclude that there is no significant difference between Executive and Middle Management decision making. Note also, the mean of Middle Management had a mean score of 67.9 compared to Executives with a mean of 63.7, as illustrated in Table XXII, which had a 4.2 difference which reflects the insignificant difference between the groups' decision-making scores.

Figure 31

Boxplot of Decision-Making Scores by Groups



Note. The boxplot showing both leadership groups with scores showing both groups are capable of decision-making in a high velocity environment along with shown outlier in executive's group.

Both Executives and Middle Management leaders have an average DM score greater than 140 which indicates the ability for Decision-making in a high velocity environment as shown in Figure 32. Of the sample size of 44 only 1 as shown is an outlier, where 43 followed normal distribution. However, due to it being only 1 outlier shown in Figure 31, it is irrelevant as it has no impact on the rest of the findings.

The nonparametric Mann-Whitney U test results indicates that there is no significant difference between Executive and Middle Management decision making.

Both Executives and Middle Management leaders have an average Decision-Making score greater than 140 which indicates the ability to make effective decisions in a high velocity environment.

Recommendations/Limitations

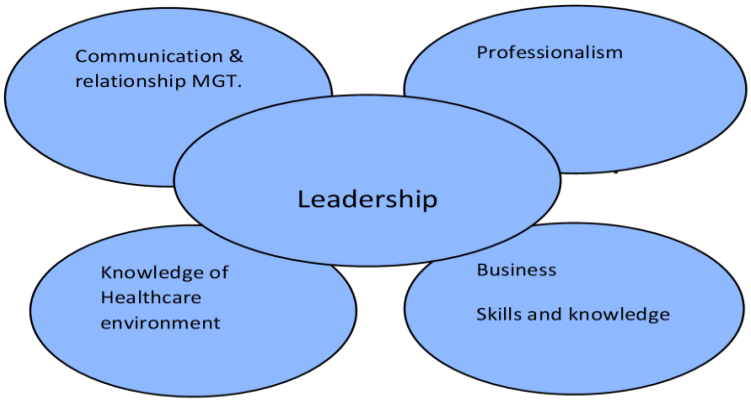
- The number of executive responses (44) in the sample were smaller in comparison to the number of middle management responses (187) resulting in a 4.25:1 sample size ratio.

- To ensure equitable comparison, sample sizes of Middle management and Executives were balanced in a 2:1 ratio, respectively. Increasing the number of executives would allow for.

- Statistical significance is impacted by the size of the samples which were balanced due to size inequality in the groups. Increased sample sizes could affect the statistical significance.

Figure 32

The 5 Domains/Variables which are being compared to Decision-Making



ACHE, (2017).

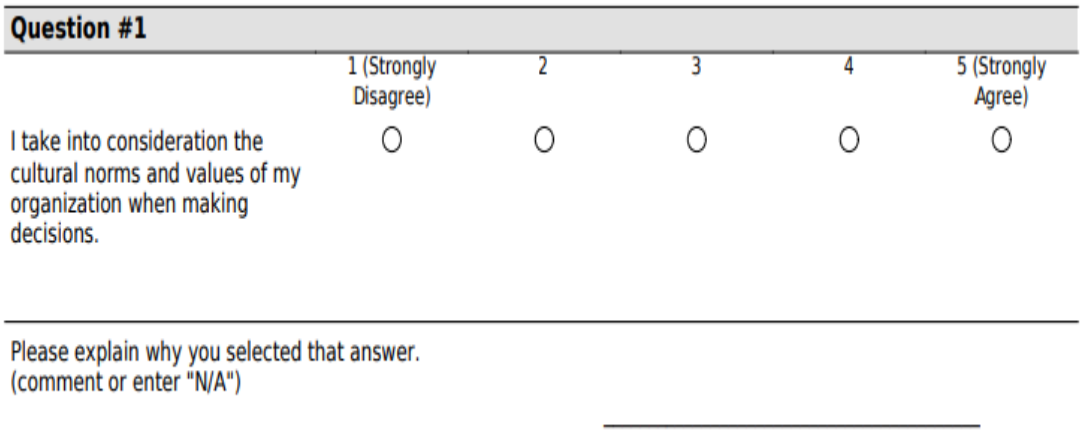
Note. The 5 domains/variables which are the competencies being evaluated for decision-making in a high velocity environment. Adapted from *ACHE Healthcare Executive Competencies Assessment Tool* (p.1), by the Healthcare Leadership Alliance and the American College of Healthcare Executives. Copyright 2017 by the American College of Healthcare Executives.

`Under the concept of Qualitative research methods, open-ended questions were asked with every survey question in each domain simply by asking why they chose to answer that question in the way they did? Although a full qualitative inquiry All the responses under each construct were taken and evaluated in bulk. The domains/variables which are communication and management skills, leadership, professionalism, knowledge of healthcare environment and

business skills and knowledge (ACHE, 2017). These domains are shown in figure 32, which is taken from the ACHE's publication.

Figure 33

Copy of actual question from the HDVM© Tool, featuring use of Likert scale and optional free text for contextual understanding.



Note. Question 1 of the HDVM© Survey tool with the Likert scales and free text option.

Open-ended questions asked with every survey question in each domain as shown in Figure 33, example of an actual question in the HVDM© survey tool. The strategic goal of doing this is to supply contextual meaning behind the various questions/statements included within the survey. There was a choice to choose N/A on each Likert question as shown in Figure 33, so no one felt forced into the Likert response structure and open-ended questions were optional for each question.

Qualitative Methodology

A full qualitative inquiry was not done, and the coding process is based on the sample size responses to the open-ended questions under each construct.

Using the Bottom-Up/Inductive approach and guidelines according to Adu (2019) and Creswell (2013), the following process was followed in a bottom-up/inductive approach as shown in Figure 34.

The Principal Investigator followed the following steps listed below:

-Step 1: Read all the responses to each question which has been assigned to the variable which will coded.

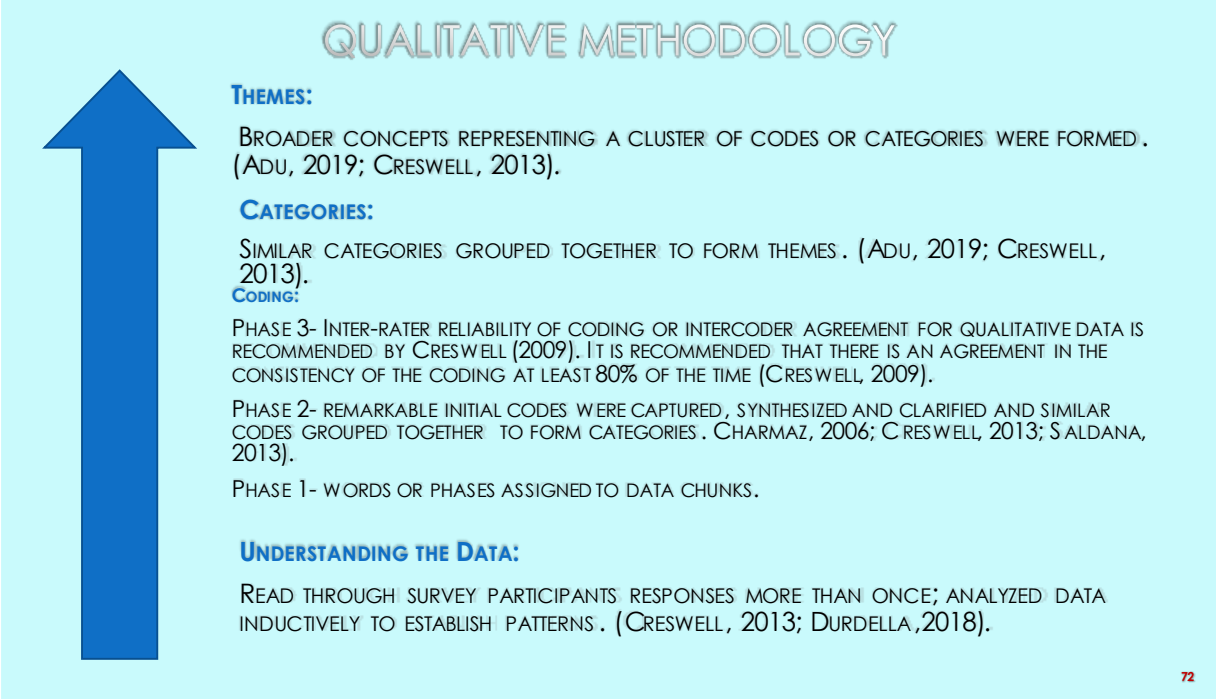
-Step 2: Reviewing the codes received with two other experts in the Qualitative Research from HMH Department of Evidence Based Practice, achieving consistency greater than 80%, which was then grouped together based upon likes to form categories.

-Step 3: Gather the categories together and compare literature to create themes.

-highlight some of the teams by using quotations of actual statements made by participants.

Figure 34

Bottom-Up/Inductive Approach



Note. The bottom-up/inductive approach; from gathering of codes to form categories to then formation of themes.

Domain: Leadership

Themes:

1. The Leader needs to represent and demonstrate the values of the institution and communicate its mission and vision clearly with the team members.
2. It is the leader's role to facilitate and engage team members' opinions prior to making decisions which will affect frontline staff.
3. Transparency and honesty are critical in establishing staff buy-in and loyalty.

Participants' Responses:

"The leader is employed to represent the company's values."- Survey Participant 49.

"Making deals are not good for staff, just like they are not good for kids." – Survey Participant 19.

"In order to build successful relationships and understanding the "why" behind things, the leader needs to understand, explain, and demonstrate the organization's culture" –Survey Participant 33.

Table XXIII

Qualitative analysis of Leadership Domain

Number of survey questions under this variable/Domain	**11**
Number of Participants who Responded	**82**
Percentage of Response	**36%**

Note. Population of N=231, under the Qualitative analysis of leadership domain, this shows the number of participants who responded to the free text.

Domain: Perception of Knowledge of Environment

Themes:

1. There is a lack of knowledge amongst healthcare members about Integrated delivery systems (IDS).
2. The criterion for the ACA is not well known.
3. There is a correlation between Staff satisfaction and Patient satisfaction.
4. Important to have knowledge of the community's needs.

Participants' Responses:

"Not aware of what IDS is." -Survey Participant 39.

"Knowledge of the ACA community assessment is not shared at my level." -Survey Participant 169.

"Knowing the trends in the community is the only way to appropriately address imbalances in care equity." -Survey Participant 76.

"Knowledge of the environment you are serving has a strong influence on the overall level of public health and perception." -Survey Participant 3.

"Leaders must be aware of the needs of the community they are responsible to serve." -Survey Participant 49.

"Healthcare does not start or end within the walls of a hospital building." -Survey Participant 21.

Table XXIV

Qualitative Analysis of Perception of Knowledge of Environment Domain

Number of survey questions under this variable/Domain	**15**
Number of Participants who Responded	52
Percentage of Response	22%

Note. Population of N=231, under the Qualitative analysis of perception of knowledge of environment domain, this shows the number of participants who responded to the free text.

Domain: Communication and Relationship Management

Themes:

1. Gender is not an issue for negotiations, it's based on personality, skills, and charisma.
2. Knowledge of cultural values and non-verbal communication will ease a faster process to achieving goals.

3. Being transparent, down- to-earth with front line staff.
4. These skills will achieve trust and buy-in to concepts you need to achieve.
5. Ability to Listen to your team will foster better relationships.

Participants Responses:

"No person is an Island. Team effort is vital to getting things done right." -Survey Participant 80.

"Gender does not make a difference in communication, it's about ability." -Survey Participant 135.

"These skills are necessary to provide a full range of understanding." -Survey Participant 58.

"Transparency helps others understand how something happened, or why that decision was made" -Survey Participant 49.

Table XXV

Qualitative Analysis of Communication and Relationship Management Domain

Number of survey questions under this variable/Domain	**10**
Number of Participants who Responded	57
Percentage of Response	25%

Note. Population of N=231, under the Qualitative analysis of communication and relationship management domain, this shows the number of participants who responded to the free text.

Domain: Professionalism

Themes:

1. Professionalism can be achieved through experience and not only through further education.
2. Contributing to your profession by advancing knowledge in your field through education and contributing to evidence-based practice.
3. Someone who stays up to date with modern trends and evidence-based practice.
4. A leader who accepts accountability shows Professionalism.
5. A person who knows what's going on in their field and facilitates the transformation of change to adapt to current situations.

Participants' Responses

"No team member is worth more than another because of textbook knowledge, it is experience that counts." -Survey Participant 90.

"Just because you have more education does not mean that you know more than others." – Survey Participant 118.

"It is the responsibility as a leader to grow in his/her competencies to achieve professionalism." Survey Participant 3.

Table XXVI

Qualitative Analysis of Professionalism Domain

Number of survey questions under this variable/Domain	**9**
Number of Participants who Responded	68
Percentage of Response	29%

Note. Population of N=231, under the Qualitative analysis of Professionalism domain, this shows the number of participants who responded to the free text

Domain: Business Skills and Knowledge

The open-ended question asked which Business skill and knowledge is ranked most important to have for effective decision making in a high velocity environment to achieve sustainability. The highest average scores show that "General Management was ranked highest and Human Resources and Risk management were ranked as the least."

Table XXVII

Business Skill Ranking

Most important Skill	**Count**	**Percentage**
General Management	47	20.3%
Quality Improvement	45	19.5%
Financial Management	34	14.7%
Information Management	28	12.1%
Strategic Planning & Marketing	23	10.0%
Organizational Dynamics & Governance	20	8.7%
Risk Management	17	7.3%
Human Resources	17	7.3%

Note. Ranking of business skills in order of importance

Of the 231 respondents, 20% named General Management as the most important skill for decision making. Only 7% of respondents found Risk Management or Human Resources the most important skills.

Participants' Responses

"Although strategic planning and marketing are important for the future of the organization, I think general management includes everything listed above. -Survey Participant 82.

"General Management, because you need to know the basics of everything."-Survey Participant 129.

"Highest is General Management as it embodies the entirety of the role."-Survey Participant 24**.**

Table XXVIII

Qualitative Analysis of Business skills and Knowledge domain

Number of survey questions under this variable/Domain	**11**
Number of Participants who Responded	82
Percentage of Response	36%

Note. Population of N=231, under the Qualitative analysis of business skills and knowledge domain, this shows the number of participants who responded to the free text.

Summary of Findings

Research question #1: Does the acquisition of Communication, Professionalism, Healthcare Business Skills, Knowledge of the Environment and Leadership as a competency influence sustainability in the organization?

Ho: there is no correlation between the acquisition of the constructs; communication, Professionalism, Healthcare Business Skills, Knowledge of the Environment and Leadership to Sustainability in the organization.

Research Question #2: Is there a relationship between Communication, Professionalism, Healthcare Business Skills, Knowledge of the Environment and Leadership and decision-making in a high velocity environment?

HA: There is a positive correlation between Communication, Professionalism, Healthcare Business Skills, Knowledge of the Environment and Leadership and Decision-Making in a high velocity environment.

Research Question #3: Where a positive relationship has been identified; which Competency (Communication, Professionalism, Healthcare Business Skills, Knowledge of the Environment and Leadership) has the highest impact on decision-making?

The total of knowledge of environment scores demonstrated the highest correlation indicating the strongest positive relations/highest impact on decision-Making.

Research question #4: How much does each competency, (Communication, Professionalism, Healthcare Business Skills, Knowledge of the Environment and Leadership) impact decision-making in Middle Level Management and Senior/executive level decision – making in a high velocity environment.

HA: There is a significant contribution of each of the competencies (communication, Professionalism, Healthcare Business Skills, Knowledge of the Environment and

Leadership) between middle management and senior/executive leaders in decision-making in a high velocity environment.

Research Question #5: Is there a difference between the Middle Managers/Leaders and Senior/Executive leaders decision-making in a high velocity environment?

HO: There is no significant differences between the Middle Managers/Leaders and Senior/Executive leaders decision-making in a high velocity environment.

Chapter 5

Discussion

General Discussion of Study Findings

The Purpose of this study was threefold; first was to develop a measurement tool using the Delphi process according to Hasson et al (2000). The High Velocity Decision Making Survey Tool (HDVM© Survey Tool) was created consisting of 5 domains discussed in the literature with 46 questions and 12 Demographic questions and achieved Face and Content Validity by going through three rounds of the Delphi Process with six experts.

Secondly, the tool was then used in a sample of the population of interest to assess for reliability purposes. The Cronbach's alpha for the tool was an α=0.834 which is considered as "Good Internal consistency," by George and Mallery (2011); while the Exploratory Factor Analysis, the KMO value of 0.87 which demonstrated a sampling suitability at a "meritorious level" according to Tabacchrick and Fidell (2001). Therefore, the factors are more than adequate for sampling and support the use of factor analysis. While the Barlett's Test had a significant finding of <0.0001, this indicated that the variables have relationships among each other and are suitable for factor analysis.

Lastly, to then use the validated and reliable tool in the population to identify the healthcare leadership competencies required for decision making and understand the relationships, if any, between the healthcare competencies and making effective decisions in high velocity environment to achieve sustainability. It was identified that:

1. There is no correlation between the Acquisition of the Constructs to sustainability in the organization.

2. There is a positive correlation between the constructs and Decision-Making in a High Velocity Environment.
3. The total of Knowledge of Environment scores demonstrated the highest correlation indicating the highest impact on Decision-Making in a High Velocity Environment.
4. There is a significant contribution of each of the competencies between middle management and senior/executive leaders decision-making in a high velocity environment.
5. There are no significant differences between the Middle Managers/Leaders and Senior/Executive Leaders Decision-Making in a High Velocity Environment.

Overview of Discussion

Business Skills and Knowledge Competency which could not be considered valid due to its content having only 1-item as it is ordinal. It was assumed that this domain/construct it consisted of 8 items due to the 8 business skills being questioned, however, because it was ordinal, the participants were asked to rank the 8 business skills from most important to least important which created one question and not 8. Due to this error, this competency was not added to the overall HDVM© Survey tool as it is not enough for a more robust correlational analysis.

Findings were supportive of the literature, however the concept of the number of years a leader is in their role did not contribute to effective decision making in a high velocity environment. This discovery was most profound, as one would have suspected that an individual who has been in their field for longer than 30 years, of which 27% of the respondents had been working in healthcare, that they would have been subject matter experts and therefore competent to make decisions in a high velocity environment to achieve sustainability of the organization.

Knowledge of the Environment competency has the highest impact on decision making in a high velocity environment which ties into the concept of the Cynefin framework by Snowden and Boone (2007). The Cynefin Frameworks does highlight that being aware of the presenting changes and knowledge of the situation enables him/her to view things through a new perspective while assimilating complex concepts and address the presenting challenge in real time to a resolution or an opportunity.

The findings of the ranking of General Management and Quality Improvement support the literature by Zuckerman (2016) and Block (2016) also, it supports the value base theory of Kuffman Hall, Stepanovich and Uhrig (1999), of which Leadership skills such as General Management was one of the competencies spoken of to have in a value driven organization. One of the Affordable Healthcare Act tenets is that of Quality, hence it is not surprising that Quality Improvement would be ranked high as it is one of today's healthcare goals and a criterion for financial reimbursement.

The findings of Lack of autonomy from the qualitative analysis being experienced by Middle Management, yet they are responsible for making decision in a high velocity environment to produce sustainability. This finding is most alarming and is an eye-opener for Institution Leaders. It is imperative that Middle Management be granted full autonomy as they are responsible for making decisions in a high velocity environment. The traditional methods of assembling to create consensus are no longer feasible in an environment where decisions need to be made immediately. Middle Management need to be supported and trusted to deliver the expected outcomes.

The lack of awareness/understanding about the components of the PPACA, such as the community Assessment, yet both leadership groups are expected to make decision for the community which will yield sustainability for the Institution. With the components of the

PPACA being the Regulations, leaders must be knowledgeable of the needs of the community if they are held accountable for the delivery of care for that community. It is difficult to deliver a goal which is not well communicated or known.

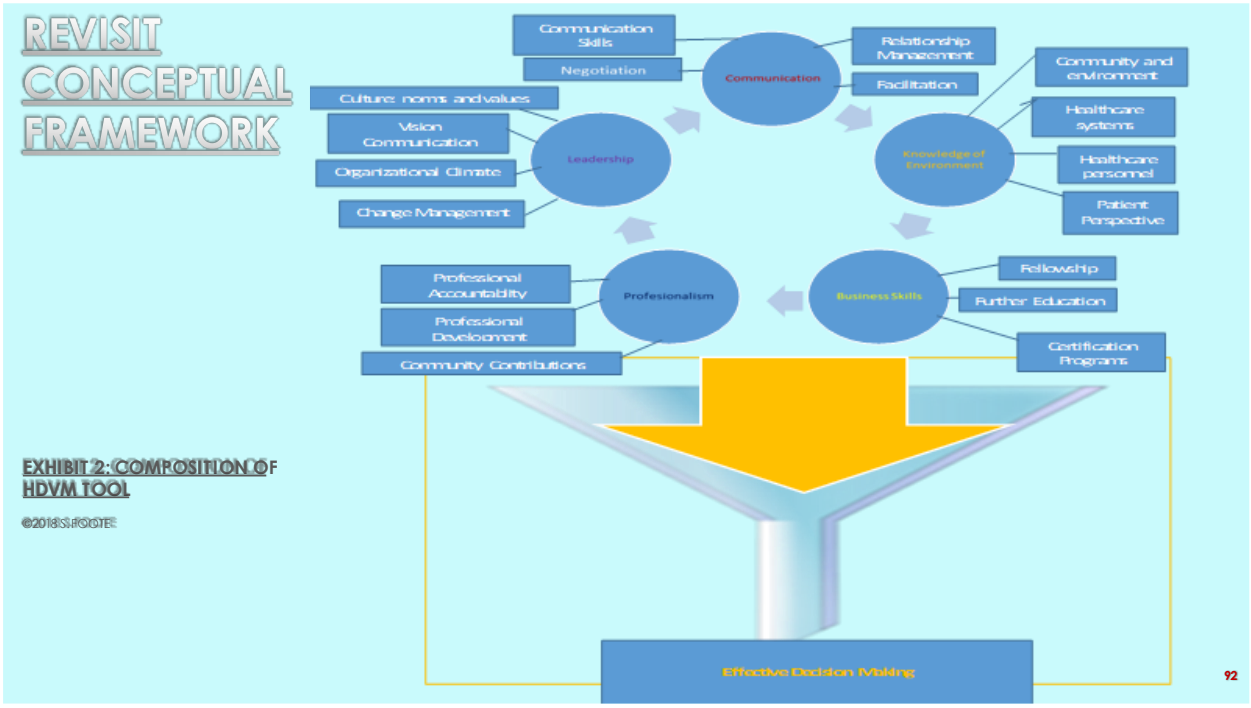
The impact of conducting this study during covid pandemic. This was a very negative experience for the P.I. as the main Healthcare System, being HMH to whom IRB was approved has placed a temporal hold on all research in the system, hence this research was affected. The most positive outcome was that most respondents were about to have a better understanding of a high velocity environment as they compare the drastic changes in healthcare due to covid as high velocity.

Re-visit Conceptual Framework

The composition of the HDVM tool stems from the Healthcare Leadership Competency Model by the HLA Competency Task force (2005). This created the Conceptual Framework as discussed in Chapter 2. This Conceptual Framework was used to create survey questions for the new measurement tool called High Velocity Decision Making Survey Tool, as shown in Figure 35.

Figure 35

Initial - Conceptual Framework

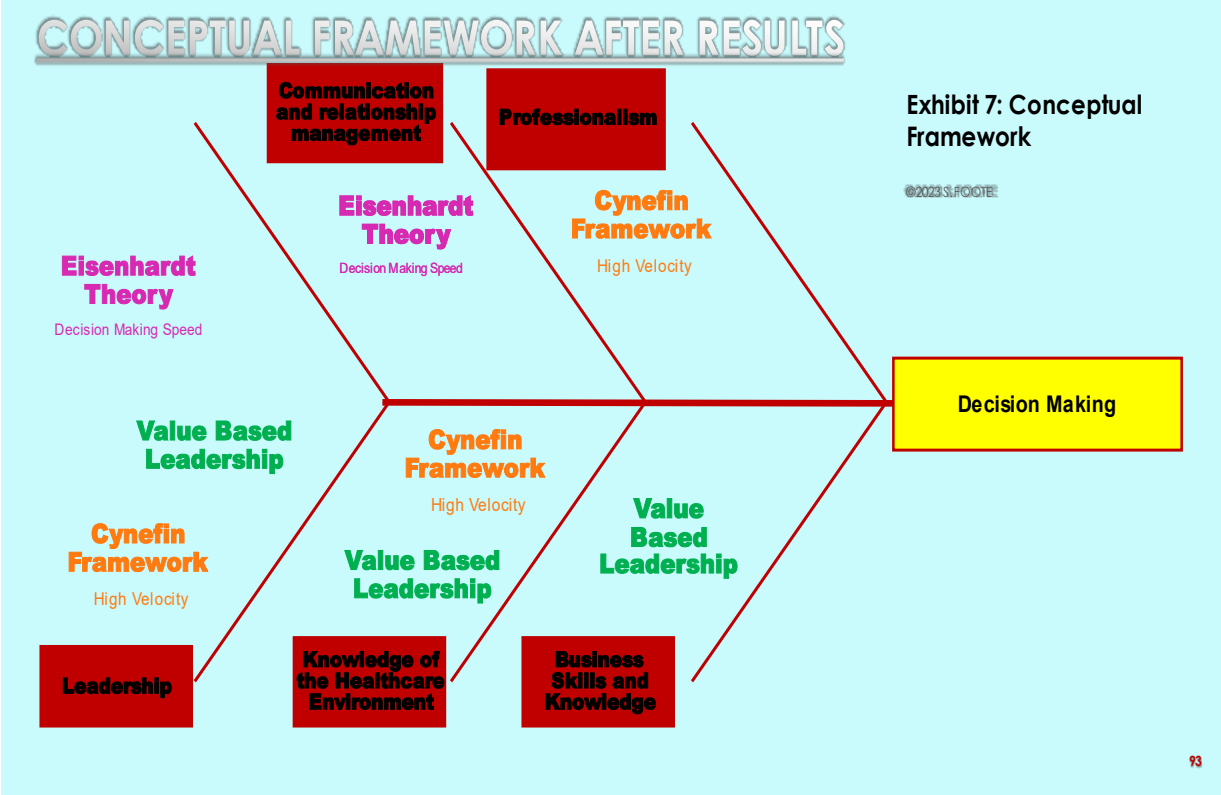


©2018 SFoote

Note: The Initial-conceptual framework as discussed in chapter 1. Showing the five variables and their sub-constructs where was instrumental in the creation of the HVDM© Survey tool questions.

Figure 36

Post-Conceptual Framework



©2023 SFoote

Note. Post-Conceptual framework, showing the merger of the initial conceptual framework with the theoretical framework.

This shows how the theories tie in with each of the Domain/Variables from the Conceptual Framework, figure 35. The Conceptual Framework whose operational definitions was entwined with the theories and enabled the composition of strong survey questions for the High Velocity Decision Making Survey Tool. Figure 36 shows how and which theories integrated with identified Domain/Variable to assist the Healthcare Leader for decision making in a high velocity environment for organizational sustainability.

Limitations

Sample size, especially that of senior leadership/C-Suite group: It would be more statistically robust if the sample size of the Senior Leadership/C-Suite group were as large as the Middle Management group.

Most participants from the same healthcare system being HMH: This limitation can be perceived as biased since most of the respondents were from Hackensack Meridian Health System which had a participation of 65% of the Sample Population. The perceived bias could be contributed due to all having the same Organizational values.

Internal consistency under the competencies of leadership, Professionalism and Business skills and knowledge: According to George and Mallery (2010), Leadership and Professionalism internal Consistency were classified as "unacceptable," while Business Skills and Knowledge was unable to be calculated. To increase these Competencies to a higher Cronbach Alpha Score, the Survey questions should be rephased for clarity and/or increase the number of questions with these subscales to potentially improve the reliability statistic.

Lack of knowledge by participants about the components of the PPACA: If the components of the PPACA were known, the response rate to the specific questions of such topics would have been higher.

The competency analysis of the Business skills and Knowledge not being robust enough to contribute significantly to the study: Due to the inability to use this domain as the domain consisted of only one item, the analytical findings cannot be considered robust or sufficient for correlational analysis due to low item content.

The open-ended question being optional: There was an option to choose N/A on each Likert question, so no one felt forced into the Likert response structure. The Open-ended

questions' strategic goal was to provide some contextual meaning behind the various questions/statements included with the survey, however due to the option to choose N/A, the response rates were rather low.

Survey/Question Fatigue: This survey consisted of 46 Likert Scale questions of which each question had an optional free text to explain why you choose such a score as an answer. The Survey also consisted of 12 demographic questions.

Cross sectional study: It was a one-time event study.

Future Studies

Suggestions for future studies are as follows:

1. Comparing two types of healthcare groups, Academic and non-academic Institutions of similar sizes (number of patient beds) to see which competencies are used for decision making in a high velocity environment to achieve sustainability.
2. Now that we know that quality is a key component to sustainability in a high velocity environment, it would be great to find out and make comparison before the PPACA and today, since the implementation of value base care.
3. With the many compliances to the regulation tenets of the PPACA, will sustainability of Healthcare Institutions be achieved (Concept of doing more with less, reduced reimbursement rates).
4. Repeating the same study but using only qualitative methods.
5. Explore if the decision making of clinicians positively contributes to the sustainability of the institution in a high velocity environment.

So What?

So now that this research study is over, so what? Well, here are two worth mentioning:

1. Decision Making is not based upon the years of experience one has which contributes to the individual's competencies. Just because you have been employed for many years in an institution does not validate you as a subject knowledge expert who can make decisions in a high velocity environment.
2. Healthcare is actively in a high velocity environment and the environment is constantly changing due to new regulations, economics, Population health and evolving Pandemics.

References

Adu, P. (2019). *A Step - by – Step Guide to Qualitative Data Coding*. Routledge.

Advisory Board Research and Analyst. (ABRA), (2016).

Alreck, P. & Settle, R. (2004). *The Survey Research Handbook.* McGraw Hill: Boston MA.

American College of Healthcare Executives. (ACHE), (2017). *2017 Competencies Assessment Tools*.

Bantu-Gomez, M. B. (2011). *Global Leadership Change, Organization and Development*. Bloomington, IN: Universe.

Block, Dale J. MD, CPE (2016) Health Care Sustainability: Managing Natural Resources in Valued Based- Care. *Physician Leadership Journal,* 18-21.

Cattell, R. B. (1966). The Scree Test for the Number of Factors. *Multivariate Behavioral Research,* 1(2), 245-276.

Charmaz, K. (2008). *Constructing Grounded Theory. A Practical Guide Through Qualitative Analysis.* London: Sage.

Chew, Eng, Dovey, Kenneth Anthony (2014). Learning to create sustainable value in turbulent operational context: the role of leadership practices. *The Learning Organization*, 21(4), 243-257.

Clayag, Jane (2013) Consolidation Challenges and Opportunities. *Healthcare Executive*, 28(3), 30-40.

Cochrane, D. (2014). Securing patient safety through quality assurance in a mixed economy of healthcare: *The role of accreditation. Clinical Risk,* 20 (4), 82 -89.

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). Hillsdale,

NJ: Erlbaum.

Corlette, S., Downs, D., Monahan, C., & Youndor, B. (2013) State insurance exchanges face challenges in offering standardized choices alongside innovative value-based insurance. *Health Affairs,* 32(2), 418-426.

Creswell, J.W. (2009). *Research Design: Qualitative, Quantitative and Mixed Methods Approach.* (3rd ed.), Thousand Oaks, CA: SAGE Publications Inc.

Cronbach, L.J. (1951). Coefficient Alpha and the Internal Structure of Test. *Psychometrika*. 16, 297 – 334.

Decremer, D. and Van Dijk, E. (2009). Paying for Sanctions in Social Dilemmas: The effects of endowment asymmetry and accountability. *Organizational Behavior and Human Decision Process,* 109(1), 4555.

Dwyer, A. (2010). Medical Managers in Contemporary Healthcare Organizations: A Consideration of Literature. *Australian Health Review*, 34, 514 – 522.

Eisenhardt, K. M. (1989). Making Fast Strategic Decisions in High Velocity Environments. *Academy of Management Journal.* 12: 543-576.

Eisenhardt, K. M., Kahwajy, J. L., and Bourgeois, L. J. (1997). Conflicts and Strategic Choice: How top Management Teams Disagree. *California Management Review.* 39(2):42-62.

Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J., (1999). Evaluating the use of Exploratory Factor Analysis in Psychological Research. *Psychological Methods,* 4(3).

Faul, F., Erdfelder, E., Buchner, A., & lang, A., (2009). Statistical power analysis using G*power 3.1: tests for correlation and regression analyses. *Behavior research methods*, 41, 1149-1160.

Fulop, Liz, Mark, Annabelle (2013) Relational leadership, decision-making and the messiness of

context in healthcare. *Leadership* 9(2), 254-277.

George, D. & Mallery, P. (2010). *SPSS for windows step by step: A simple guide and reference 17.0 Update* (10th ed.). Boston, MA: Pearson.

Hamrock, Eric (2013) Discrete Event Simulation for Healthcare Organizations: A Tool for Decision Making. *Journal of Healthcare Management* 58(2), 110-124.

Hasson, F., Keeney, S., & McKenna, H. (2000). Research guidelines for the Delphi survey technique. *Journal of Advanced Nursing*. 32(4), 1008-1015.

Hek, G. & Moule, P. (2006). *Making Sense of Research: An Introduction for Health and Social Care Practitioners*. Sage Publications. 1 – 155.

Kaiser, H.F. (1981). A Revised Measure of Sampling Adequacy for Factor Analytic Data Matrices. *Educational and Psychological Measurements,* 34, 111-117.

Kaufman, Nathan S. (2011). Three "Brutal Facts" That Provide Strategic Direction for Healthcare Delivery Systems: Preparing for the End of Healthcare Bubble. *Journal of Healthcare Management* 56(3), 163-168.

Larson, G. & Wilde – Larson, B. (2010). Quality of Care and Patient Satisfaction: A New Theoretical and Methodological Approach. *International Journal of Health care Quality Assurance,* 23(2), 228 – 247.

Likert, R. (1931). A Technique for the Measurement of Attitudes. *Archives of Psychology*. New York: Columbia University Press.

Linstone, H. & Turoff, M. (1975). *The Delphi Method: Techniques and Applications.* Addision-Wesley. Reading, MA.

Luthans, F., Youssef, C.M., & Avolio B.J., (2007). Developing the Human competitive Edge. *Psychological Capital,* 1(2), 249-271.

Mahon, M., & flowers, J., (2006). *Commonwealth Fund Commission on a High-Performance*

Health System National Scorecard. New York: Business Wire

Munro, B. H. (2005). Statistical methods for health care research (Vol. 1). Lippincott, Williams & Wilkins. *Postgrad Medical Journal*, 90(1064), 303-304.

Neumann, Peter J. Sc. D (2012). What We Talk About When We Talk About Health Care Costs. *New England Journal of Medicine*, 366(7), 585-586.

O'Reilly, C.A., 111., Chatman, J.A., & Caldwell, D., (1991) People and Organizational Culture: A Profile Comparison Approach to Assessing Person – Organization fit. *Academy of Management Review*, 25, 487 – 516.

Osborne, J. M. (2014). Durable medical equipment ruling: Impact on nurse practitioner role. *The Journal for Nurse Practitioners*, 10(5), 344-351.

Reiter, K. L., & Song, P.H. (2013). Hospital capital budgeting in an era of transformation. *Journal of Health Care Finance*, 39(3), 14-22,

Ratner, B. (2009). The Correlation Efficient: *its values range between +1/-1, or do they?* (17) 139-143.

Rosenthal, E. (2017). *An American Sickness: How Healthcare Became Big Business and How You Can*. New York, NY.

Schein, E. (2004). *Organizational Culture and Leadership* (3rd ed.). San Francisco: Jossey-Bass.

Shortell, S. M., & Hull, K.E., (1996). *"The New Organization of Health Care – Managed Care/Integrated Health Systems." In Strategic Choices for a Changing Healthcare System*, edited by S. Altman and U. Reinhardt, Chicago: Health Administration Press.

Snowden, David T., Boone, Mary E. (2007). A Leader's Framework for Decision Making. *Harvard Business Review*, 69-76.

Starfield, B., Shi, L. and Macinko, J. (2005): Contribution of Primary Care to Health Systems and Health. *The Millbank Quarterly*, 83, 457 – 502.

Stepanovich, Paul L. and Uhrig, Jennifer D. (1999). Decision Making in High Velocity Environment: Implications for Healthcare. *Journal Healthcare Management* 44(3), 197-205.

Stevens, J. P., (1999). *Intermediate statistics: A modern approach* (2nd ED.), Mahwah, NJ: Lawrence Erlbaum associates.

Stroh, U. & Jaatiner, M. (2001). New Approaches to Communication Management for Transformation and Change in Organizations. *Journal of Communication Management,* 6(2), 148-165.

Stuhlmacher, A. F. & Walters, A. E. (1999). "Gender Difference in Negotiation Outcomes: Meta-Analysis." *Personnel Psychology,* 52, 653-677.

Sultz H.A., & Young K.M., (2001). *Health Care USA: Understanding its organization and Delivery.* 3rd Edition.

Tabachnick, B., G., & Fidell, L., S. (2001). Cleaning up your act: screening prior to analysis. *Using Multivariate Statistics*. 5, 61-116.

Thiederman, S. (2003). *Making Diversity Work: Seven Steps for Defeating Bias in the Workplace.* Dearborn, MI. Dearborn Trade Publishing.

Toussaint, John S. (2013). Operations and Strategy: A Rapidly Adaptive Management System. *Journal of Healthcare Management* 60(5), 312-315.

Vasilescu, Cezar (2011). Strategic Decision-Making Using Sense- Making Models: The Cynefin Framework. *Defense Resources Management* 68-73.

Warwas, Julia (2015). Principals' leadership behavior: values-based, contingent or both? *Journal of Education Administration* 53(3), 310-334.

Zuckerman, A. M. F. (2014). Successful strategic planning for a reformed delivery system. *Journal of Healthcare Management,* 59(3), 168-172.

APPENDICES

APPENDIX A

Seton Hall University Institutional Review Board Approval for Delphi Process

SETON HALL UNIVERSITY
1 8 5 6

April 24, 2019

Sylvester Foote
134 Belmont St.
Englewood, NJ 07631

Dear Mr. Foote,

The IRB is in receipt of the application for your research entitled "Exploring and Identifying Healthcare Leadership Competencies Required for Effective Decision Making in a High Velocity Environment to Achieve Sustainability under the Regulatory Compliance Tenets of the Patient Protection Affordable Care Act."

Your Application does not fall under the purview of the IRB, not even in exempt status, because use of the Delphi method to create a survey does not meet the criteria for generalizable research. Expert reviewers for the Delphi method are not subjects.

Mary F. Ruzicka, Ph.D.

Mary F. Ruzicka, Ph.D.
Professor
Director, Institutional Review Board

Cc: Dr. Deborah DeLuca

Office of Institutional Review Board
Presidents Hall • 400 South Orange Avenue • South Orange, NJ 07079 • Tel: 973.313.6314 • Fax: 973.275.2361 • *www.shu.edu*

APPENDIX B

Delphi Panel Worksheet

May 7, 2018

Dear_____;

I am writing to invite you to participate in a Delphi study to support my Research study for a PhD in Healthcare leaders at Seton Hall University.

The aim of this study is to develop a series of decision making competencies needed by healthcare executives/management in a high velocity environment to ensure sustainability of their respective Institution.

As an established expert in this field, I am keen to gain your views on how to construct an "expert consensus" of competencies required for effective decision making. This will then be validated using the data of healthcare executives/managers who will partake of the survey for this study, of which the questions of this survey will be deemed appropriate by you.

Specifically, I would like to ask your opinion on the utility of a questionnaire of decision making variables for the method of making effective decisions using an online survey. It is envisaged that this should take a few hours to complete for each submission, of which there will be three submissions over a period of 6 weeks, all done via emails to you.

I feel that your expertise would be extremely beneficial to developing a credible measurement tool to assess the required competencies for effective decision making and would be very grateful if you would consider participating in this Delphi study. If you would like to contribute, please inform me by email and I will forward the instructions for the first Delphi round.

Please do not hesitate to contact me if you require further information.

Yours sincerely,

Sylvester Foote RN, MHA, PhD(c)
Principle Investigator
School of Healthcare Leadership
Seton Hall University
(551) 243 4531

APPENDIX C

High Velocity Decision – Making Survey tool

Pages 2 & 3 of Survey Questions and 1 Page of Demographics' Questions

To inquire about the entire survey instrument and/or any questions regarding it, please contact the PI @ SoFoote@hotmail.com

Question #6					
	1 (Strongly Disagree)	2	3	4	5 (Strongly Agree)
I can clearly communicate the need for the desired change and its associated expected outcomes.	○	○	○	○	○

Please explain why you selected that answer. (comment or enter "N/A")

Question #7					
	1 (Strongly Disagree)	2	3	4	5 (Strongly Agree)
Before I implement change, I seek input from the institution's staff who will be directly affected by that change	○	○	○	○	○

Please explain why you selected that answer. (comment or enter "N/A")

Question #8					
	1 (Strongly Disagree)	2	3	4	5 (Strongly Agree)
I am comfortable using different methods to enhance and mobilize the transition of change with my subordinate staff to achieve the institution's desirable goal	○	○	○	○	○

Please explain why you selected that answer. (comment or enter "N/A")

Question #9					
	1 (Strongly Disagree)	2	3	4	5 (Strongly Agree)
I am willing to make deals as a method to solicit workforce engagement when rolling out new concepts and processes to implement change.	○	○	○	○	○

Please explain why you selected that answer. (comment or enter "N/A")

_____

Question #10					
	1 (Strongly Disagree)	2,	3	4	5 (Strongly Agree)
To achieve workforce collaboration in order to gain the desirable outcomes, it is acceptable for one to embellish on the positive benefits.	○	○	○	○	○

Please explain why you selected that answer. (comment or enter "N/A")

_____

Question # 11					
	1 (Strongly Disagree)	2,	3	4	5 (Strongly Agree)
I give my workforce the credit for ideas which leads to the change being desired by the institution, even when those ideas and processes were no designed	○	○	○	○	○

Please explain why you selected that answer. (comment or enter "N/A")

_____

Demographic Questions	
Question #1: What is your Gender	◯ Male ◯ Female ◯ Prefer to self identify
Question #2: What is your race/ethnicity	◯ American Native/Alaskan Native ◯ Asian ◯ Black/African-American ◯ Hispanic or Latino ◯ Native Hawaiian or Other Pacific Islander ◯ West Indian/Caribbean ◯ White ◯ Prefer to self-identify
Question #3: What is your age	◯ Under 25 years ◯ 25-30 years ◯ 31-40 years ◯ 41-50 years ◯ 51-60 years ◯ 61-70 years ◯ over 70 years
Question #4: In which department is your leadership role in healthcare	◯ Operations ◯ Administration ◯ Compliance ◯ Finance ◯ Other
If other, please specify	_____
Question #5: How long have you been working in the Healthcare field	◯ Under 2 years ◯ 2-5 years ◯ 6-10 years ◯ 11-15 years ◯ 16-20 years ◯ 21-25 years ◯ 26-30 years ◯ Over 30 years
Question #6: What is the highest level of education that you have acquired?	◯ Associate Degree ◯ Bachelor's Degree ◯ Master's Degree ◯ Doctorate Degree (Ph.D., PsyD, EdD) ◯ Professional Degree (MD, JD, DMD, DO, DNP) ◯ Healthcare Certification Program
Question #7 Please tell me in your own words what does a "high velocity environment" mean to you:	_____
Question #8 Please tell me in your own words what is your definition of "strategic decision making"	_____

APPENDIX D

Seton Hall University Institutional Review Board Approval for Survey Research

SETON HALL UNIVERSITY
1 8 5 6

December 14th, 2020

Sylvester Foote
Seton Hall University

Re: 2020-153

Dear Sylvester,

The Research Ethics Committee of the Seton Hall University Institutional Review Board reviewed and approved your research proposal entitled, "*Exploring and identifying healthcare leadership competencies required for effective decision making in a high velocity environment to achieve sustainability under the regulatory compliance tenants of the Patient Protection Affordable Care Act*". as resubmitted. This memo serves as official notice of the aforementioned study's approval as exempt. If your study has a consent form or letter of solicitation, they are included in this mailing for your use.

The Institutional Review Board approval of your research is valid for a one-year period from the date of this letter. During this time, any changes to the research protocol, informed consent form or study team must be reviewed and approved by the IRB prior to their implementation.

You will receive a communication from the Institutional Review Board at least 1 month prior to your expiration date requesting that you submit an Annual Progress Report to keep the study active, or a Final Review of Human Subjects Research form to close the study. In all future correspondence with the Institutional Review Board, please reference the ID# listed above.

Sincerely,

Mara C. Podvey, PhD, OTR
Associate Professor
Co-Chair, Institutional Review Board

Phyllis Hansell, EdD, RN, DNAP, FAAN
Professor
Co-Chair, Institutional Review Board

Office of the Institutional Review Board
Presidents Hall · 400 South Orange Avenue · South Orange, New Jersey 07079 · Tel: 973.275.4654 · Fax 973.275.2978 ·
www.shu.edu

APPENDIX E

Hackensack Meridian Health Institutional Review Board Approval for Survey Research

Hackensack Meridian *Health*

Current State

In Expedited Review

View Study

Printer Version

View Differences

My Activities

Withdraw

Edit Email List

Edit Guest List

Send Email to Study Team

(In IRB Review)

Study: Decision Making (Pro2020-0862)

Description: Exploring and identifying healthcare leadership competencies required for effective decision making in a high velocity environment to achieve sustainability under the regulatory compliance tenets of the Patient Protection Affordable Care Act.

Principal Investigator: sylvester Foote **IRB Administrator:** Linda Regensburg

Type of Research: Data Collection **Review Type:** Expedited

Committee: IRB **Meeting Date & Time:** -

History Documents Reviewer Notes Contingencies

Activity	Author	Activity Date
Approved by Research Department	Mordecai, Elaine	9/9/2020 1:56 PM
Approved by Chair	Tingley, Judith	9/9/2020 11:06 AM
Study Approved By Department	Garcia, Sergio	9/8/2020 12:07 PM
No Funding and Data not leaving institution .		
Study Approved By Department	Douglas, Claudia	9/8/2020 12:04 PM
The above referenced proposal was reviewed by the NRIC Proposal Review Committee and is recommended to proceed to review by Hackensack Meridian Health IRB		
Study Approved By Department	Benson, Michelle	9/3/2020 4:26 PM
Study Approved By Department	Douglas, Claudia	8/26/2020 1:24 PM
The above referenced proposal was reviewed by the Nursing Research and Innovation Council Proposal Review Committee and is recommended to proceed to the Institutional Review Board		
Study Submitted for Review	Foote, sylvester	8/26/2020 12:47 PM

Hackensack Meridian
HEALTH

Unaffiliated Investigator Agreement to Conduct Research

Pro: 2020-0862

Protocol Title: Exploring and Identifying Healthcare Leadership Compentencies required for effective decision-making in a high-velocity environment to achieve sustainability under the regulatory compliance tenets of the Patient Protection Affordable Care Act

Overseeing Co-Investigator Investigator: Claudia Douglas, DNP, RN, ANP-C
(must be a HackensackUMC employee)

Unaffiliated Co-Investigator: Sylvester Foote BS, MHA

Department: Patient Care Services

Hackensack University Medical Center **("HackensackUMC")** Procedure No. U01 requires all research conducted by an unaffiliated fellow resident(s), intern(s), nurse(s), and/or other allied health professional(s) **("Unaffiliated Co-Investigator")** be sponsored by a HackensackUMC employee **("Overseeing Co-Investigator")**.

The Overseeing Co-Investigator will assume responsibility for all research activities conducted in the above named protocol; such activities include the timely submission of continuing reviews, serious adverse events, and/or other communications which may be required by the Institutional Review Board. Please refer to the eResearch website (irb.humed.com) for Investigator Responsibilities and Standard Operating Procedures.

By each individual's signature below, the Overseeing Co-Investigator and the Unaffiliated Co-Investigator acknowledge their adherence to Procedure No. U01 and this agreement.

Claudia Douglas
Signature of Overseeing Co-Investigator

August 31, 2021
Date

Signature of Unaffiliated Co-Investigator*

August 31, 2021
Date

*What is your end date at Hackensack University Medical Center? (6 Month Max Interval)

Date:_____

Please return this agreement via e-mail to eResearch@hackensackmeridian.org

APPENDIX F

Participant Recruitment Letter

SETON HALL UNIVERSITY
1 8 5 6

PARTICIPANT SOLICITATION LETTER

Study Title: Exploring and identifying healthcare leadership competencies required for effective decision making in a high velocity environment to achieve sustainability under the regulatory compliance tenets of the Patient Protection Affordable Care Act.

Dear Participant:

You are being solicited to participate in the research study of the about mentioned title.

Affiliation

My name is Sylvester Foote and I am a doctoral student at Seton Hall University in the Department of Inter-professional Health Sciences and Health Administration. I am conducting this research in partial fulfillment of my dissertation requirement for the PhD in Health Sciences Leadership.

Purpose

You are being invited to participate in this research as an opportunity to share your thoughts regarding the current required competencies for Healthcare leaders in order to make effective decisions which will impact the sustainability of their institutions.

Procedure

You will be required to click on the link _____ which will take you to the survey. This survey consist of 54 questions in total, of which there are 5 domains, each consisting of 9 to 15 questions. In addition to the research survey, there are 12 demographic questions, which is used to collect demographical questions including but not limited to gender, age, years of education and years of experience in healthcare leadership.

Please respond honestly to all questions completing each domain or area questionnaire honestly expressing your individual point of view. This survey will take you approximately 45 minutes to complete, during which, you may stop for breaks and log back on to where you left off. Upon completion please click submit.

Voluntary participation

Your participation in this research study is voluntary. You may decide at any time not to participate in this study. If you decide not to participate or you withdraw, you will not be penalized.

Anonymity

You will not be asked to provide your name or place of work if you agree to participate in this study. You will not be identified by name or description in any reports or publications about this study.

School of Health and Medical Sciences
Department of Interprofessional Health Sciences
and Health Administration
Interprofessional Health Sciences Campus (IHS)
340 Kingsland Street, Building 123, Nutley, NJ 07110
www.shu.edu

Privacy and Confidentiality

Protection and confidentiality will be maintained throughout the duration of the research project. No personal identifying information will be collected from participants. However, upon completion of the study, the paper data will be kept in a locked filling cabinet in the Principal Investigator's office for three years after which time all data will be destroyed. Similarly, all electronic data will be stored on a USB memory key with access to the file protected by use of a password only known to the principal investigator. The memory key with access to the file protected by use of a password only known to the Principal investigator. The memory key will also remain in a secured filing cabinet for three years, upon which time the data will be destroyed.

Risk

There is no foreseeable risk factor or discomfort that is anticipated by participating in this research study.

Benefit of Participation

There are no proposed or foreseeable direct benefits to you by participating in this study. However, the results of this study will help educators, healthcare leaders and researchers to determine the competencies required for healthcare leaders to make effective decisions which will impact sustainability in a high velocity environment.

Compensation

There will be no monetary or any kind of compensation for your participation in this study.

Ways to Participate

The questionnaire is available via Redcaps©. By accessing and completing the survey through listed link below, you are conveying your informed consent to participate in this study.

The survey link is:

Please feel free to ask other Healthcare Leaders you may know, to participate in this survey.

Contact Information

You have the right to ask questions concerning this study at any time. If you have any questions concerning this study or your rights as a study participant, please contact the primary investigator, Sylvester Foote at Sylvester.Foote@HackensackMeridian.org or via cell. 551 243 4531.

Thank you for considering participating and contributing to my dissertation research. Your time and consideration is greatly appreciated.

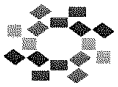
Sincerely,

Sylvester Foote

Sylvester Foote, RN, BSN, MHA

APPENDIX G

Information Sheet for Participants/Informed Consent



Hackensack
Meridian *Health*

Information Sheet for Participant

Exploring and identifying healthcare leadership competencies require for effective decision making in a high velocity environment to achieve sustainability under the regulatory compliance tenets of the Participant Protection Affordable Care Act.

Who is conducting this study?

Principal Investigator: Sylvester Foote, MHA, RN

We are conducting a research study about decision making. You are invited to participate to share your thought regarding the current required competencies for Healthcare leaders in order to make effective decisions which will impact the sustainability of your institution.

This research study will provide insight on the following five factors 1. Communication and Relationship Management; 2. Professionalism; 3. Leadership; 4. Knowledge of the Healthcare Environment; 5. Business skills and Knowledge. Additional to identify the competencies required by healthcare leaders in a high velocity environment to achieve sustainability

You have been asked to take part in this study because you are a Healthcare leader of your institution. It is up to you to decide whether to take part in this study. Your participation is completely voluntary.

If you agree to participate, you will be required to complete the survey. This survey consists of 47 questions in total, of which there are 5 domains, each consisting of 9 to 15 questions. In addition to the research survey, there are 9 demographic questions, which is used to collect demographical questions including but not limited to gender, age, years of education and years of experience in healthcare leadership.

Taking part in this research study is voluntary. You do not have to take part in this study if you do not want to. Your participation in this research will be completely anonymous. No personal identifiable information will be collected from you at any point in this study. If you take part, you can leave the study at any time. Please keep a copy of this script for your records.

There will be no monetary or any kind of compensation for your participation in this study

You are encouraged to ask questions before deciding what you want to do. If you decide to take part, feel free to ask questions at any time during your participation.

For questions regarding your rights as a research participant or any research-related concerns, you can call the Hackensack Meridian Health Research Integrity Office at 201-880-3669.