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Entrepreneurial Leadership Strategies for Catalyzing Innovation Performance

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
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Walden University
2023

Abstract

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by

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MBA, Henley Business School, 2013

BS, University of Toronto, 2003

Doctoral Study Submitted in Partial Fulfillment

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Walden University

March 2023

Abstract

Inadequate innovation performance has the potential for adverse business outcomes. Business leaders are concerned with inadequate innovation performance, as innovation is a significant driver of business growth. Grounded in entrepreneurial leadership, the purpose of this qualitative multi-case study was to explore entrepreneurial leadership strategies that some healthcare business leaders used to catalyze innovation performance. The participants were six business leaders within three healthcare sectors who contributed to strategic healthcare innovation decisions using entrepreneurial leadership strategies within the last 5 years. Data were collected using semistructured interviews and a review of organizational strategy documents and websites. Through thematic analysis, six themes were identified: (a) innovation management, (b) innovation strategy, (c) innovation performance, (d) innovation leadership, (e) innovation and change, and (f) innovation orientation. A key recommendation is for business leaders to hire, develop, and retain talent by establishing a training program that cultivates entrepreneurial mindsets, skills, and behaviors that promote innovative work behavior. The implications for positive social change include the potential to inspire social entrepreneurship and innovation and support community leaders in solving healthcare challenges.

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Dedication

In 2013, I dedicated my MBA study and achievement to my expected child, affirming that dreams can become realities through hard work and perseverance and that one should never cease to reach for the stars. Ten years later, on conferral of a DBA, that sentiment still holds true. I dedicate this DBA study and achievement to my now young son, Jacob, avowing that “hard times create strong men, strong men create good times, good times create weak men, and weak men create hard times.” – Michael Hopf. No matter life’s challenges, your wildest dreams will be realized through your passion, desire, and grit to learn, grow, and develop, coupled with confidently knowing that you will never be inadequate but powerful beyond measure. Love always, Dad.

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Section 1: Foundation of the Study

Globalization and rapid technological advancement have pressured healthcare leaders to catalyze innovation for economic growth, profitability, and improved patient outcomes. However, significant hurdles in diffusing, adapting, and leading innovation efforts have challenged healthcare leaders (Currie & Spyridonidis, 2019; Machon et al., 2019). Effective innovation leadership can drastically improve organizational quality, productivity, and efficiency (Avby & Kjellström, 2019; Avby et al., 2019; Dalton et al., 2021). To catalyze healthcare innovation, leaders must successfully shape an entrepreneurial climate and orientation, develop effective innovation management practices, foster innovative work behavior, and promote creative and collaborative internal and external partnerships (Afsar & Umrani, 2019; Avby et al., 2019; Bagheri & Akbari, 2018; Kremer et al., 2019; Leonidou et al., 2020; Machon et al., 2019). Entrepreneurial leadership is more likely to foster innovative behaviors in employees than other leadership styles (Newman et al., 2018), though it has not been extensively adopted within business management practices (Leitch & Volery, 2017). Thus, the doctoral study research topic was entrepreneurial leadership strategies that catalyze innovation performance.

Background of the Problem

Healthcare organizations' survival and competitive advantage may depend on leaders' innovation capacity. The global healthcare environment is challenged with aging populations, disease prevalence, rising clinical costs, limited resources, rapidly evolving and disruptive technologies, and economic pressures (Currie & Spyridonidis, 2019; Lee

et al., 2019; Lombardi et al., 2018; Pesut, 2019). Healthcare leaders and the environment are typically risk averse, evidence based, and compliance oriented, contrasting with an innovation culture that embodies risk-taking, rapid change, and experimentation (Machon et al., 2019). With competing operational needs, limited resources, and employee challenges, leaders often consider employees' time on strategy and innovation as nonproductive (Machon et al., 2019), thus diminishing the potential for innovation (Renkema et al., 2021). Innovation is pivotal to improving healthcare globally and amplifying medical progress, and it is a top priority for business leaders. Despite historical innovative drug discoveries, expiring patents, increased competition from generic manufacturers, rising research and development (R&D) costs, and targeted novel therapies have impacted healthcare companies' market share and profitability (Califf & Slavitt, 2019). A leader's ability to innovate and focus on shaping an innovative and performance-oriented culture requires various leadership styles to facilitate innovation. Business leaders can drive economic growth, profitability, and optimized patient outcomes through entrepreneurial leadership and innovation management.

Leaders must abdicate traditional leadership and adopt modern-day entrepreneurial leadership strategies to conquer healthcare innovation challenges. Entrepreneurial leadership is a specialized approach to realizing superior organizational performance, innovation, and change through entrepreneurial strategies and high levels of creativity, vision, and motivation (Nguyen et al., 2021; Purwati et al., 2021; Rehman et al., 2021; Ricci et al., 2022). However, Leitch and Volery (2017) noted that many entrepreneurial leadership concepts have yet to be extensively adopted within business

management practices. Therefore, the research goal was to explore leadership strategies for catalyzing innovation using entrepreneurial leadership constructs, such as risk-taking, experimentation, innovativeness and creativity, self-renewal, and agile resource integration (Findsrud, 2020; Verma & Mehta, 2020). The background to the problem has been provided, and the focus will now shift to the problem statement.

Problem and Purpose

The specific business problem is that some healthcare business leaders lack entrepreneurial leadership strategies to catalyze innovation performance. Therefore, the purpose of this qualitative multi-case study was to explore entrepreneurial leadership strategies that some healthcare business leaders working in the pharmaceutical, medical device, and consumer healthcare sectors in North America and Western Europe used to catalyze innovation performance.

Population and Sampling

Population

The targeted population involved healthcare business leaders in North America and Western Europe working in the pharmaceutical, medical device, and consumer healthcare sectors who had successfully used entrepreneurial leadership strategies to catalyze innovation. This population was appropriate for this study because healthcare business leaders directly influence their organization's entrepreneurial orientation and distinguish themselves from competitors by applying new knowledge and innovation (see Dabić et al., 2021; Gifford & McKelvey, 2019; Shaher & Ali, 2020). Using individuals within associated professional networks effectively diminishes access barriers to people

and data (Vuban & Eta, 2019). The sampled population interviewed involved six healthcare business leaders who had demonstrated evidence of successfully applying entrepreneurial leadership strategies to catalyze organizational innovation.

Sampling

I conducted a qualitative multi-case study to explore entrepreneurial leadership strategies that some healthcare business leaders used to catalyze innovation performance; therefore, a nonprobabilistic, purposive sampling method was appropriate for this study. The process included an element of convenience sampling; however, the specific nature of the criteria for involvement made this design purposive. The sampling strategy helped in identifying suitable research participants. Matching interviewees with the research objectives helps to improve a study's rigor and the reliability of data and findings (S. Campbell et al., 2020). The sampling strategy aligned with the research methodology, aims, and objectives, contributing to research rigor.

The study involved multiple data sources, including six in-depth, semistructured interviews and a review of participant-provided evidentiary documentation, such as organizational business strategies and websites. Key eligibility criteria targeted healthcare business leaders who were creative, who were strategic thinkers, and who had led or significantly contributed toward strategic decisions within healthcare innovation initiatives within the last 5 years. The specific eligibility criteria ensured that participants' selection and use were nonprobabilistic, were purposive, were appropriate for the research topic, and led to the collection of data on recent and relevant experience across various entrepreneurial innovation conditions.

Nature of the Study

Qualitative methods were the basis for this study to explore entrepreneurial leadership strategies that some healthcare leaders used to catalyze innovation performance. Researchers use qualitative methodology to understand complex realities as they contextualize a phenomenon's subjective and socially formed meanings, especially from the subjects' perspective (Stake, 2005; Yin, 2018). Conversely, quantitative or mixed methods allow for the objective and systematic collection of data and hypothesis testing that may allow inferences and representation to broader populations (Bloomfield & Fisher, 2019; Duckett, 2021). Qualitative research is increasingly being recognized as a valuable methodology in the medical field for its meaningful research questions and identification of suitable measures for future studies (Abramson et al., 2018). Due to the study's exploratory nature and the fact that quantitative statistical data were not required to answer the research question or test a hypothesis, qualitative research was more suitable than quantitative or mixed-method approaches. In addition, the mixed methodology approach would have been prohibitively extensive.

Qualitative research designs include phenomenological, grounded theory, ethnographic, narrative inquiry, and case study. Phenomenological designs are suitable for documenting participants' lived experiences (Pathiranage et al., 2020). Grounded theory is suitable for discovering or constructing theory from data (Chun Tie et al., 2019). Researchers immerse themselves in natural social settings within ethnographic designs to understand cultural contexts (Pathiranage et al., 2020). Narrative designs are suitable for capturing stories describing human events (Sonday et al., 2020). Phenomenological,

grounded theory, ethnographic, and narrative inquiry designs were unsuitable for the study because lived experiences, life stories, and cultural elements would not be emphasized or expected to contribute to the study. Within a qualitative multi-case study design, researchers challenge existing theoretical assumptions and utilize several evidence types and sources to explore complex phenomena from subjects' experiences and perspectives in their natural settings (Stake, 2005; Yin, 2018). Therefore, a qualitative multi-case study design was best suited for this study because it involves exhaustive review and analysis of participants' perspectives on a phenomenon.

Research Question

What entrepreneurial leadership strategies do some healthcare business leaders use to catalyze innovation performance?

Interview Questions

1. How are you involved in leading innovation within your organization?
2. What entrepreneurial leadership strategies have you used to foster an innovative or entrepreneurial orientation within your organization?
3. What challenges have you faced embedding an innovative or entrepreneurial orientation?
4. What entrepreneurial leadership strategies have you used to manage and implement innovation initiatives?
5. How do you judge the effectiveness of those entrepreneurial leadership strategies?

6. How do you know when to apply specific entrepreneurial leadership strategies?
7. What challenges have you faced in using those entrepreneurial leadership strategies?
8. What have you done to meet those challenges effectively?
9. How do you measure innovation performance?
10. What additional information would you like to share about using entrepreneurial leadership strategies to catalyze innovation performance?

Conceptual Framework

The conceptual framework of this study was entrepreneurial leadership. Entrepreneurial leadership organically emerged as a new leadership concept from entrepreneurship and leadership literature (Esmer & Dayi, 2017; Renko et al., 2015). No author has claimed to be or been referred to as the original theorist; however, the concept is well grounded and continues to evolve in the literature, making it worthwhile to add constructs or insight to the body of knowledge. The concept of entrepreneurial leadership is used to describe leaders' proficiency in influencing followers to achieve organizational objectives through creative recognition and exploitation of entrepreneurial opportunities for business growth (Pinelli et al., 2022; Renko et al., 2015). Key tenets, such as opportunity recognition and exploitation, underlying the entrepreneurial leadership concept are related to transformational leadership (Lopes Figueredo et al., 2022), creativity-enhancing leadership (Makri & Scandura, 2010), and entrepreneurial orientation (Lopes Figueredo et al., 2022; Lumpkin & Dess, 1996). The entrepreneurial

leadership concept holds that entrepreneurial leadership constructs offer a lens on how leaders champion entrepreneurial behaviors and drive innovation performance within organizations. Therefore, an organization's entrepreneurial orientation is likely to foster entrepreneurial leaders who influence intrapreneurial attributes such as creativity, risk-taking, self-efficacy, and opportunity recognition and exploitation within employees and culture (Bagheri, 2017; Dabić et al., 2021; Pinelli et al., 2022; Renko et al., 2015; Shaher & Ali, 2020). Thus, entrepreneurial leadership is an antecedent to establishing an organizational and individual entrepreneurial orientation that leads to the development of future leaders.

Operational Definitions

Entrepreneurial leadership: Leaders' proficiency in influencing followers in achieving organizational objectives through creative recognition and exploitation of entrepreneurial opportunities for business growth (Niazi et al., 2020; Renko et al., 2015).

Entrepreneurial orientation: Comprises a firm’s collective organizational processes, methods, and approaches while performing entrepreneurially (Lumpkin & Dess, 1996).

Innovation management: An organization’s ability to renew itself and enhance its value through novel or transformed ideas (Fontana & Musa, 2017).

Innovation performance: The degree of success (efficacy) in relation to the efforts spent (efficiency) while undertaking the innovation process (Rehman et al., 2021).

Innovation process: Comprises a firm’s collective organizational processes that govern idea generation, selection, development, and diffusion (Fontana & Musa, 2017).

Innovative work behavior: Comprises the behaviors that promote the development of new ideas, technology, techniques, and methods related to specific business goals (Afsar & Umrani, 2019).

Social entrepreneurship: The creation of positive social change through entrepreneurial activity, adoption of innovative approaches, collection of resources, and development of networks aimed at creating or pursuing social value (Stirzaker et al., 2021).

Assumptions, Limitations, and Delimitations

Assumptions

Philosophical assumptions involve researchers' beliefs surrounding problem formulation, research strategy, data collection, and data analysis, and they comprise epistemological, ontological, and axiological suppositions (Almasri & McDonald, 2021). Assumptions are accepted issues, ideas, or positions and may be found across the research process (Theofanidis & Fountouki, 2019). Researchers make assumptions about human knowledge, realities experienced within the research process, and how their values potentially affect the research process (Almasri & McDonald, 2021). This study had two fundamental assumptions. First, it was assumed that leaders with distinct entrepreneurship experiences could speak on what it takes to be entrepreneurial and catalyze innovation. The second assumption was that entrepreneurial leaders would truthfully and transparently answer research questions and share explicit success strategies that may benefit other leaders. Asking probing questions to achieve the depth and breadth of insight and meaning served as a mitigation strategy for this study.

Limitations

Research study limitations are restrictions out of the researcher's control and are often linked to the chosen research design, statistical model, funding, or other factors (Theofanidis & Fountouki, 2019). As this study was conceptual and exploratory, limitations were inherent and integral to the research. Several limitations that potentially affected the study design, results, and conclusions must be considered. Due to the qualitative case study design and the insignificant number of participants required to reach data saturation relative to the overall target population, the generalizability and reproducibility of the findings may be limited or not achieved. Thus, future longitudinal studies encompassing larger sample sizes or controlled conditions could provide better insights into how entrepreneurial leaders catalyze innovation. However, the study design included using multiple data sources to enhance the reliability, validity, and credibility of the findings and conclusions. The interpretations and inferences made through thematic analysis of participants' responses are a cause for caution (K. Campbell et al., 2021). Reflexivity exercises comprising self-examination and notating biases and assumptions throughout the research process are warranted to minimize researcher bias. Understanding, cloaking, and uncloaking personal social locations and positionalities are essential in the ethical treatment of participants and when analyzing transcripts (K. Campbell et al., 2021; Thurairajah, 2019). The credibility of research findings can be strengthened if researchers are reflexive about their methodology, are transparent about their worldviews, and build ethically close relationships with participants while remaining objective in data analysis.

Delimitations

Delimitations are deliberately imposed limitations established by the researcher and within the researcher's control (Theofanidis & Fountouki, 2019). Forming delimitations establishes boundaries that may better accomplish research goals and are primarily coupled with the study's theoretical or conceptual framework, purpose, research questions, variables, and sample (Theofanidis & Fountouki, 2019). Several delimitations were established to safeguard a favorable study outcome.

First, although an extensive literature search was conducted, it was primarily limited to current journal articles published after 2019. There remains a possibility that meaningful and relevant literature sources were missed. Future research could broaden the scope of the literature search to prevent unexpected omissions. Second, there is no universal definition of entrepreneurial leadership, and the literature does not indicate that researchers are moving toward consensus. While Renko et al.'s (2015) definition of entrepreneurial leadership was used in this study, other definitions contain additional constructs that may catalyze innovation and are worth exploring in future research. Third, this study explored the effects of entrepreneurial leadership style on innovation. Other leadership styles, such as transformational or creative leadership, may influence innovation differently. Accordingly, future studies should investigate other leadership styles that may independently or simultaneously influence innovation (Afsar & Masood, 2018; Bagheri, 2017; Mehmood et al., 2020; Newman et al., 2018). Furthermore, future studies should compare the effect of entrepreneurial leadership with other leadership styles, specifically in healthcare.

Fourth, the selection of samples was limited to three sectors: pharmaceutical, medical device, and consumer, within the healthcare industry in the United States and Western Europe. As various contexts may influence entrepreneurial leadership practices, future research should leverage the insights from this study in other industries, sectors, and business settings in a broader global context. Fifth, the study was analyzed through the lens of business leaders who had successfully catalyzed innovation through entrepreneurial leadership. Future research should include the perceptions of both healthcare leaders and employees. The personal leadership characteristics of leaders and employees may have different influencing effects; hence, future research may provide better insight into how specific entrepreneurial leadership traits catalyze healthcare innovation. While several delimitations existed within this doctoral study, other researchers may expand on the findings and contribute to the literature.

Significance of the Study

Contribution to Business Practice

Healthcare business leaders work in a highly competitive environment where they must seek novel solutions to catalyze and sustain organizational innovation, value creation, performance, and profit. This study may be of significant value to business practice as the findings provide healthcare business leaders insights into the entrepreneurial leadership strategies that may help positively influence innovation outcomes and contribute toward organizational competitive advantage. Innovation is an effective corporate strategy that may lead to a competitive advantage through better products, reputation, and market performance (M. Ali, 2021; Gallardo-Vázquez et al.,

2019). Therefore, this study's findings on entrepreneurial leadership strategies may provide valuable insight that informs corporate innovation strategy and business practice.

This study's contributions to business practice or improvement involve establishing successful entrepreneurial leadership strategies that may serve as guidelines for modeling desirable organizational citizenship behavior and developing new capabilities and competencies. Furthermore, establishing an entrepreneurial orientation and culture can enable innovation and foster creative outputs by influencing employee productivity (Ahmetoglu et al., 2018). Proficient business leaders who cultivate an entrepreneurial climate can create value for the organization by promoting experimentation, idea generation, opportunity recognition and exploitation, and concept implementation (Bagheri, 2017; Fontana & Musa, 2017; Pinelli et al., 2022). Innovation can be vital to growing and sustaining long-term profitability if organizational leaders develop entrepreneurial leadership strategies, formulate robust innovation processes, and capture innovation as a value driver within their strategic vision (Usman et al., 2021). Business leaders can increase value creation, performance, and profit by adopting entrepreneurial leadership strategies that foster innovation.

Implications for Social Change

In addition to achieving business success, organizations can contribute to society through social change initiatives. Positive social change, such as social entrepreneurship, focuses on actions intended to benefit society and its members rather than organizations (Lumpkin et al., 2018). Beyond the organizational environment, the implications for positive social change include fostering social entrepreneurship and innovation that may

spark technological advancement, influence economic growth and job creation, and enrich societal well-being (Scuotto et al., 2022). Social entrepreneurship and innovation may help alleviate poverty through higher disposable income, financial wealth, and economic self-sufficiency (Lumpkin et al., 2018). Business leaders who learn about successful entrepreneurial leadership strategies and practice social entrepreneurship may foster social capital by creating social networks for community learning and involvement in addressing healthcare challenges creatively and innovatively (Lumpkin et al., 2018; Wahyuningtyas et al., 2018). Therefore, social change and social entrepreneurship have benefits beyond organizational citizenship.

A Review of the Professional and Academic Literature

The proceeding literature review is structured into three components. The first part focuses on entrepreneurial leadership theory, which comprises leadership theory and entrepreneurship theory, and how each has converged to form an entrepreneurial leadership conceptual model. Next, the topical foundation of organizational innovation is laid out, emphasizing how business leaders manage innovation for performance, including developing a fundamental understanding of healthcare innovation. Lastly, the topic in relation to the conceptual model is discussed, specifically entrepreneurial leadership constructs, such as orientation, culture, behavior, skills, and leadership characteristics, and how they potentially catalyze innovation. In their bibliometric analysis of entrepreneurial leadership research, Aparisi-Torrijo and Ribes-Giner (2022) found that entrepreneurship, leadership, innovation, social entrepreneurship,

entrepreneurial leadership, entrepreneurial orientation, sustainability, transformational leadership, entrepreneurs, and gender were the most frequent topics within the literature.

To provide a comprehensive critical analysis of the entrepreneurial leadership literature, this doctoral study's literature review framework was designed to be consistent with the key topics found by Aparisi-Torrijo and Ribes-Giner (2022), other than gender, which was not a primary factor for analysis. The literature review comprised 108 references, of which 95% were peer-reviewed journal articles and 87% were published within 5 years of the expected graduation date. Walden University's library served as the primary database source for obtaining scholarly work, and specific keywords were used to source appropriate material for inclusion in the literature review. For example, keywords included *entrepreneurial leadership*, *pharmaceutical innovation*, *entrepreneurial leadership and innovation*, *innovation work behavior*, *entrepreneurial leadership theory*, *entrepreneurial orientation*, and *innovation performance*.

Entrepreneurial Leadership Theory

Leadership and entrepreneurship have primarily been researched and defined independently, though contemporary research has begun converging the two concepts into entrepreneurial leadership theory. While leadership and entrepreneurial leadership overlap in specific attributes and broad definitions, little consensus toward a universal definition exists. Entrepreneurial leadership has been argued to be a distinct form of leadership, emphasizing the need to manage the associated contextual challenges and opportunities that may require unique entrepreneurial strategies to overcome (Harrison et al., 2018). Numerous researchers have suggested a relationship between entrepreneurial

leadership, innovative behavior, and organizational performance (Dabić et al., 2021; Shaher & Ali, 2020; Simić et al., 2020). Understanding the leadership styles, behaviors, and competencies influencing creativity is vital in driving innovation performance (Mehmood et al., 2020). Effective entrepreneurial leadership may promote an entrepreneurial culture and orientation conducive to superior performance (Dabić et al., 2021; Kör et al., 2021). Organizational performance and entrepreneurial leadership style, competencies, and behaviors have various dimensions and may be influenced by many mediating factors. Although emerging as a new leadership theory, entrepreneurial leadership is a dynamic concept defined by various leadership influences within entrepreneurial contexts.

Leadership

As leadership theory has strongly influenced entrepreneurial leadership theory, a fundamental understanding of complementary and distinct leadership styles enables a deeper appreciation of entrepreneurial leadership's effect on catalyzing innovation performance. Leadership theories, such as entrepreneurial leadership, help explain the traits and behaviors specific individuals use to influence the performance of others and have led to the creation of multiple leadership styles with distinct and overlapping characteristics. A particular leadership style may produce a drastically different outcome than another and is highly dependent on situational context. Therefore, it is essential to understand the makeup of the core leadership styles found in the literature, their effect on entrepreneurship and innovation performance, and how they may have contributed to entrepreneurial leadership theory. Leadership is the new driver for innovation and

comprises the ability of leaders to influence or motivate others to focus efforts on the successful accomplishment of organizational objectives (Alharbi, 2021; Gutu, 2020). Leadership influence encompasses various approaches, situations, skills, behaviors, competencies, and qualities (Alharbi, 2021; Fries et al., 2021). The role and effect of adaptive leadership, leader–member exchange (LMX), path–goal theory, servant leadership, creative leadership, and transformational leadership on organizational entrepreneurship and innovation are discussed in this section.

Adaptive Leadership. Individuals use adaptive leadership to tackle complex challenges in agile ways and may lead to enhanced innovation performance. Adaptive leadership is influential in organizational innovation, performance, growth, and survival in fast-paced, uncertain, and hyper-competitive business environments (Busola Oluwafemi et al., 2020; Mukaram et al., 2021; Yeo, 2021). Busola Oluwafemi et al. (2020) uncovered that the combination of opening and closing (ambidextrous) leadership behaviors predicted employees' explorative and exploitative innovation behaviors, while adaptive or flexible leadership mediated the relationship. Furthermore, Mukaram et al. (2021) confirmed a significant positive relationship between adaptive leadership and organizational readiness for change. Yeo (2021) concluded that leaders should use their vulnerability as a basis for inner strength through others' support, leverage collective wisdom to accelerate decision-making, venture into innovation through experimentation, and exercise personal instinct and objective judgment to think and act differently. Using adaptive leadership may help entrepreneurial leaders encourage employees to explore, experiment, and act creatively within innovative settings. Leaders’ adaptive

characteristics are essential for navigating complex and uncertain business environments and are thus an essential facet of entrepreneurial leadership and innovation performance.

Leader–Member Exchange. High quality leader–member relationships may enhance innovation performance and firm competitive advantage through the effective development of innovative employee behavior, creativity, and talent management. Tingyi Li et al. (2020) recognized that leaders' psychological capital has a significant positive (direct and indirect) effect on employees' innovation behavior through high quality LMX. However, Mascareño et al. (2020) contended that LMX did not directly affect employee innovation, though employee creativity indirectly mediated the relationship. Furthermore, Mulligan et al. (2021) explained that mindfulness and engagement served as mechanisms of high quality LMX and subsequently positively facilitated innovation. Though the literature supports a positive relationship between LMX and innovation, various LMX constructs may have differing effects on innovation, underscoring the need for further research. Entrepreneurial leaders may wish to foster employee innovativeness through effective employee interactions to catalyze innovation performance.

Path–Goal Model of Leadership. The instrumental role of the leader in supporting employees, resources, and information; helping them overcome deficiencies; and improving performance in achieving individual and organizational goals can be explained by path–goal leadership theory. Magombo-Bwanali (2019) defended that participative path–goal leadership behavior is the primary leadership behavior associated with team leaders and that supportive and achievement-oriented behavior significantly influences subordinate performance. Saleem et al. (2020) argued that directive leadership

significantly affected performance, followed by supportive and achievement-oriented leadership styles, though participative leadership was not considered a significant predictor of performance. Furthermore, Singh and Rangnekar (2020) ascertained that empowering leadership directly influenced employee proactivity; that empowering leadership, employees' goal orientation, and job conditions are essential antecedents of employee proactivity; and that goal orientation and job conditions concurrently partially mediate the empowering leadership and employee proactivity relationship. In essence, a leader's role using path–goal leadership is to increase employees' motivation and job satisfaction by adding value, removing hurdles, clarifying organizational goals, and rewarding performance. Path–goal leadership may be insufficient to catalyze innovation performance; however, constructs within the theory, such as hurdle removal, may be an effective entrepreneurial leadership strategy that enables employees to be more innovative, thus affecting innovation performance.

Servant Leadership. Servant leadership is a people-oriented leadership style that significantly influences innovative employee behavior and, subsequently, innovation performance, organization success, and competitive advantage. Iqbal et al. (2020) discovered that servant leadership has a direct and positive relationship with employees' innovative behavior and that psychological safety and thriving mediate the relationship. Furthermore, F. Li et al. (2021) identified a positive relationship between servant leadership and innovative employee service behavior, which was further mediated by employee customer orientation. Lan et al. (2021) reported that servant leadership indirectly influenced leaders' innovative behavior through their sense of accomplishment

and that leaders' extraversion strengthened the relationship and mediating effect. Whether it involves influencing employees through leadership or increased self-motivation as a leader, servant leadership can promote creative activities and innovativeness that lead to business growth. With its positive effect on innovative employee behavior, servant leadership may be a practical approach for entrepreneurial leaders to drive innovation performance.

Creative Leadership. Effective leadership styles, such as creative leadership, are an influential component of individual, team, and organizational creativity and innovation vital to organizational survival. Zaman et al. (2020) determined that transformational leadership constructs such as intellectual stimulation and inspirational motivation are critical for innovation as they inspire creativity, unique problem-solving, and risk-taking that leads to innovative behavior, value creation, and sustained competitive advantage. Teng Li and Yue (2019) further identified a positive relationship between leaders' creativity and team creativity, including a mediating effect from task complexity; however, leader empowerment weakened the relationship. Qin et al. (2019) argued that creative leadership is not without impediments and that a leader's creative mindset is associated with state based moral disengagement that could limit leaders' self-regulation capacity and potentially lead to abusive behavior, such as aggressiveness. Creative leadership may influence and motivate employees to think and act innovatively, overcome complex and challenging tasks or situations, and generate positive business outcomes. Creative leadership empowers leaders to realize innovative solutions within complex and rapidly evolving business contexts, such as entrepreneurship pursuits.

Transformational Leadership. Transformational leadership may be a practical approach to organizational change and performance via innovative employee work behavior. Creativity, new ideas, and innovations are significant factors in organizational competitive advantage and can be enhanced through employee innovative work behavior (Afsar & Umrani, 2019; Hadi et al., 2019). Hadi et al. (2019) determined that transformational leaders influence employee motivation, thus enriching innovative work behavior. Furthermore, the relationship between transformational leadership and innovative work behavior is mediated by employees' motivation to learn and moderated by task complexity and innovation climate (Afsar & Umrani, 2019). Sivarat et al. (2021) contended that employee creativity is emphasized by transformational leadership and contingent rewards in exchange for their efforts in meeting innovation goals. Transformational leadership significantly influences employee creativity and innovative work behavior, supporting positive organizational innovation outcomes. While a valuable tool for catalyzing innovation performance, transformational leadership may still be insufficient within entrepreneurial climates.

Summary. As entrepreneurial leadership theory stems from leadership and entrepreneurship theories, business leaders should develop, and practice leadership strategies derived from several leadership styles to catalyze innovation performance in entrepreneurial ways. Entrepreneurial leaders who can agilely adapt to complex and rapidly changing conditions through adaptive leadership characteristics may foster innovation performance by promoting innovative work behavior and preparing the organization for change. With the right leadership traits, entrepreneurial leaders are well

positioned to foster high quality LMX that encourage innovativeness and positively influence innovation outcomes. Through path–goal leadership, entrepreneurial leaders must remove obstacles and provide the support, resources, information, and rewards necessary to motivate employees to be creative, take risks, and increase their discretionary effort.

Furthermore, entrepreneurial leaders may practice servant leadership and creative leadership to cultivate discretionary effort and innovativeness and encourage out-of-the-box thinking, risk-taking, and experimentation in an environment where employees feel supported, willing to tackle challenges, and free to generate and implement new ideas. To foster employee innovative work behavior and create an innovative organizational culture, entrepreneurial leaders may leverage the influencing power of transformational leadership to nurture a community oriented toward entrepreneurship. Leaders who can develop and demonstrate entrepreneurial leadership traits and strategies congruent with their environment may succeed more in catalyzing innovation, improving business performance, and creating a competitive advantage.

Entrepreneurship

Like leadership theory, entrepreneurship theory is a significant part of entrepreneurial leadership theory's constitution. Entrepreneurial leadership was the conceptual framework of this study; therefore, it is essential to understand entrepreneurship constructs. Entrepreneurship is a prominent topic of inquiry in the literature, though it lacks a universally aligned definition. In Clark and Harrison's (2019) literature review, the authors described various schools of thought and argued that a

holistic approach inclusive of multiple perspectives of entrepreneurship served the field better than making compromises or concessions through integration. Fundamentally, the entrepreneurial context, characteristics, strategies, and functions of the entrepreneur and entrepreneurial process are essential for understanding entrepreneurial leadership and its effect on innovation performance.

Entrepreneurial Context (Types). Firm performance can be improved through innovation by employing various forms of entrepreneurship. Examples of entrepreneurship that affect firm performance include corporate, opportunity-driven, innovative, and digital entrepreneurship (A. Ali, Kelley, et al., 2020; Sahut et al., 2021). Prince et al. (2021) reconceptualized entrepreneurship as the development and validation of ideas and included such constructs as a firm start-up, uncertainty, innovation, value creation, and opportunity recognition or creation. Ali, Kelley, et al. (2020) showed that innovative and corporate entrepreneurship was high within economies with basic institutional conditions and efficiently functioning markets. However, external contexts that promote innovation had a negative relationship with opportunity-driven and innovative entrepreneurship and a positive relationship with corporate entrepreneurship. Sahut et al. (2021) discovered that corporate innovation is enhanced through digital entrepreneurship and that digital platforms and crowdfunding create opportunities for knowledge creation and exchange, better decision-making, and the promotion of supportive networks. Entrepreneurship comes in many configurations and can influence innovation and firm performance differently. Business leaders should focus on strategic

entrepreneurship practices within their specific context that support the achievement of corporate objectives and create organizational value and wealth.

Corporate strategy is vital in navigating business leaders within complex environmental contexts and establishing a competitive advantage. Benevolo et al. (2020) and Rindova and Martins (2021) uncovered gaps in the extant entrepreneurship literature. Rindova and Martins developed a framework that comprises three constructs: articulating shaping intentions for changing an existing situation into a preferred one, designing without final goals, and stakeholder dialogue and co-creation. The authors purported that the three constructs could lead to value-creation and novel strategies. Benevolo et al. (2020) designed an integrated framework to support global strategy creation, especially in entrepreneurial firms seeking to exploit global opportunities. Fostering corporate entrepreneurship by creating and implementing entrepreneurial strategies requires an entrepreneurial mindset and creativity (Altahat & Alsafadi, 2021). Emphasizing entrepreneurship within corporate strategies may increase competitiveness and competitive advantage within highly complex environments. Corporate strategies that comprise effective and efficient entrepreneurial innovation processes focused on converting an idea into a product or service that delivers customer value may boost organizational performance.

Entrepreneurial Process. Strategic entrepreneurship and innovation may lead to opportunity recognition, enhanced risk-taking, greater flexibility, and improved organizational performance. The dynamic external business environment warrants firms to rapidly innovate, change and transform, rendering entrepreneurial action an essential

facet of any innovation ecosystem (Chebbi et al., 2020; Minafam, 2019; Tseng & Tseng, 2019). Minafam (2019) recognized that corporate entrepreneurial activities lead to higher innovative product and process development rates. Tseng and Tseng (2019) established six strategic approaches: the need to motivate innovative behavior, concentrate and develop entrepreneurial capabilities, cultivate innovative-minded individuals, reward corporate entrepreneurship, encourage big-picture thinking, and educate employees on corporate entrepreneurship. Chebbi et al. (2020) contended that an internal marketing strategy was needed to help drive internal stakeholder engagement, organizational transformation, and adoption of a corporate entrepreneurship strategy. Through strategic entrepreneurship, business leaders can achieve superior value by establishing an action-oriented entrepreneurial and innovative climate that influences employee innovative work behavior and engagement and leads to the development and adoption of dynamic capabilities. Focusing on internal entrepreneurial activity through effective entrepreneurial strategies and processes can promote innovative thinking, behavior, and performance and is essential to catalyzing innovation performance.

The entrepreneurial process can be defined differently, though models share similar external influencing factors and effects on firm performance. One model, CROWAI, proposed by Carvalho (2022), comprises interconnected and permanently looped entrepreneurial attributes: context, resources, objectives, will, action, and impact. Carvalho's attributes are essential when considering what entrepreneurial strategy or leadership approach to implement, given the unique circumstances a business leader faces and the effect or outcome they wish to achieve. Certain environmental conditions are

more conducive to entrepreneurship. For example, Guerrero et al. (2021) learned that professional support, incubators/accelerators, and R&D investments are favorable, while lack of funding sources, labor market conditions, and social norms are less favorable. The development of incubators/accelerators may serve as a microcosmic ecosystem and can be a powerful approach to innovation while agilely targeting and managing resources. Altaf et al. (2019) reported that management support, work discretion, entrepreneurial education, previous entrepreneurial experience, and time availability significantly and positively impacted business performance and were moderated by an entrepreneurial passion for inventing. Altaf et al. effectually tie in leaders, specifically leadership constructs, as critical components of strategic entrepreneurship often overlooked in more process-oriented models. There is no single approach to strategic entrepreneurship, as the literature supports the significant positive effect that numerous entrepreneurial process constructs have on firm performance. Though, the entrepreneur remains a central tenet of strategic entrepreneurship.

Entrepreneur/Intrapreneur Characteristics. Entrepreneurial intentions, knowledge, skills, and capacity play a significant role in entrepreneurs' success in competitive and uncertain markets. Gieure et al. (2020) upheld that individuals are likely to have an attitude and inclination to be entrepreneurial if they have the necessary skills, knowledge, and capacity. Iwu et al. (2021) asserted that the content and design of entrepreneurial education programs and the caliber of the lecturers influenced individuals' entrepreneurial intentions. Furthermore, subjective norms influenced entrepreneurial intentions and strongly predicted entrepreneurial behavior and action (Gieure et al.,

2020). Su et al. (2020) contended that entrepreneurs gain motivation through happiness and satisfaction in their entrepreneurial pursuits. Positive emotions promote entrepreneurial intention and, subsequently, the acquisition of resources and ability (Su et al., 2020). Lastly, emotional value, like economic value, is a performance and motivational driver within the entrepreneurial process (Su et al., 2020). Business leaders focusing on entrepreneurship training and knowledge management, skill development, and strategic resource management could significantly affect innovative work behavior and foster financial, human, and social capital that capitalize on opportunities to catalyze innovation and create wealth. In addition, business leaders should find ways to foster entrepreneurial interest and competency development through formal training programs and active engagement.

Managerial or leadership practices are critical in the development of entrepreneurial competencies and for forming an entrepreneurial environment and orientation that positively influences firm performance. Pesha et al. (2021) proposed two methods to foster internal entrepreneurship; the first method is to develop a creative environment that stimulates business improvement initiatives, and the second is to leverage employee development programs to implement business projects. Furthermore, Gandhi et al. (2021) proposed that leaders develop intrapreneurs through a tailored incentive system, empowering them to source project resources, holding them accountable for certain risks, connecting them to cross-departmental resources, and establishing an innovation framework comprised of experimentation. Khan et al. (2021) avowed that developing entrepreneurial competencies, culture, and orientation positively

influences firm performance. Leaders are pivotal components of strategic entrepreneurship, as their leadership strategies and approach can yield different results. In addition, leaders applying diverse and contextually based leadership traits with an entrepreneurial orientation can enhance organizational innovation. Leaders could catalyze innovation performance by fostering an entrepreneurial organizational culture and promoting entrepreneurial competencies and innovative work behavior.

Entrepreneurs often work within complex and uncertain environments where resources and key stakeholder relationships, such as mentoring relationships, are essential to successful entrepreneurial outcomes. St-Jean and Tremblay (2020) acknowledged that mentoring supports the development of entrepreneurial self-efficacy concerning opportunity recognition for individuals with low learning goal orientation. Furthermore, the effect of mentoring entrepreneurs decreases once the mentorship ends, emphasizing a need for long-term support (St-Jean & Tremblay, 2020). Entrepreneurs with high learning goal orientation also experience a slight decrease in self-efficacy with intense mentorship (St-Jean & Tremblay, 2020). Entrepreneurs significantly gain from mentoring relationships, with coachable entrepreneurs benefiting the most. Kuratko et al. (2021) recognized that entrepreneurs' coachability positively correlated with goal progress, product innovativeness, firm performance, investment decisions, and mentorship expectations. The literature overwhelmingly supports the need for business leaders to support the growth and development of budding entrepreneurs through training, information sharing, coaching, and mentoring. Active and long-term leadership support, tailored to the idiosyncratic needs of novice entrepreneurs, plays a pivotal role in their

development and success, and can significantly influence their attitude, behavior, and goal attainment. Therefore, effective entrepreneurial leadership strategies, such as coaching and mentoring, are necessary to positively affect innovative work behavior and firm performance.

Strategic entrepreneurship processes, also called intrapreneurship within corporate settings, coupled with adequate resource management and leadership support, can positively influence organizational innovation. Intrapreneurs can enable and revitalize organizational performance through innovation development and implementation if given the necessary resources and conditions to develop and implement innovative ideas and projects (Alpkan et al., 2010; Brigić & Alibegović, 2019; Usman et al., 2021). Brigić and Alibegović (2019) noticed that intrapreneurship activities directly and positively impacted product, process, and marketing innovations. Organizational and environmental characteristics also positively influence intrapreneurship and, subsequently, growth and profitability (Galván-Vela et al., 2021; Usman et al., 2021). Furthermore, management support and risk-taking tolerance significantly influence innovation performance (Alpkan et al., 2010). Though, performance based reward systems and offering employees free time to innovate did not influence innovativeness (Alpkan et al., 2010). For intrapreneurship to succeed, entrepreneurial leadership, entrepreneurship-trained employees, and an entrepreneurial-oriented climate must be present. Strengthening these intrapreneurial facets may promote innovative behavior and result in firm growth and profitability. Business leaders should align the corporate strategy, business environment,

and resources to successfully implement innovation initiatives while supporting strategic entrepreneurship and employee innovativeness.

Summary. As entrepreneurship takes on many forms, it is crucial to note that capitalizing on opportunities and mitigating challenges requires contextually based leadership strategies and approaches. Each strategy will share similar attributes, such as considering the business environment, leadership style, the entrepreneur, and the innovation process. The innovation or entrepreneurial process should factor in knowledge development, skill improvement, and leadership support beyond standard task-oriented procedural steps. Long-term coaching and mentoring are strategies that improve an entrepreneur's experience and output. Formal development programs can encourage innovativeness and provide active leadership support.

Furthermore, a climate that supports opportunity recognition, idea generation, risk-taking, experimentation, and knowledge sharing can further promote entrepreneurship and value creation. Developing entrepreneurship capabilities, such as incubators/accelerators, may enable business leaders to rapidly innovate, change, and transform the organization, leading to firm growth and profitability. To catalyze innovation and firm performance, a business leader must align the strategy, environment, and resources; doing so in an entrepreneurial way may amplify the positive effects.

Entrepreneurial Leadership

The conceptual framework of this study is entrepreneurial leadership theory, which is an amalgamation of leadership theory and entrepreneurship theory. Entrepreneurship is increasingly becoming more popular as individuals pursue

opportunities for financial gain, personal development, and social change, even if they work for an established firm (Renko, 2018). Understanding the relationship between leadership and entrepreneurship is essential in relating to millennials and the future workforce, developing markets and firms that lack structure or legitimacy, and capitalizing on opportunities, market share, and competitive advantage (Renko, 2018). While the definition of entrepreneurial leadership is nebulous, it is imperative to understand it as a contextual phenomenon, company culture, leadership style, and an entrepreneur's leadership characteristics.

Definition. Like the broad definition of leadership, authors use diverse definitions of entrepreneurial leadership within the literature, resulting in a lack of consensual meaning and universally integrated definition (Harrison et al., 2020; Ruttan, 2019). Several authors have leaned toward transformational leadership characteristics, such as influence (Yukl, 1999) and vision (Gupta et al., 2004), while others have described innovation (Fontana & Musa, 2017) or risk-taking (Kuratko et al., 2021) as core tenets of entrepreneurial leadership. Entrepreneurial leadership has been described relative to Bass' (1985) four theoretical constructs of transformational leadership: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. To be successful entrepreneurial leaders are required to be charismatic role models of entrepreneurial qualities, motivationally communicate high expectations and a clear shared vision to inspire commitment and entrepreneurial behavior, challenge followers to think creatively and innovatively, and shape a supportive climate for opportunity recognition, exploitation, and implementation (Northouse, 2019). Renko et

al. (2015) attempted to bridge the gap by defining entrepreneurial leadership in its simplest form, as leaders' ability to influence and direct followers' performance in exploiting entrepreneurial opportunities while pursuing organizational goals. Rost thoroughly analyzed leadership theories, origins, and word use and concluded that definitions are contradictory, models discrepant, and research disconnected from leadership's true nature (Rost & Amarant, 2005). Despite inconsistencies across the literature, the broad definition of entrepreneurial leadership allows researchers and practitioners to apply different lenses that focus on leaders' proficiencies and traits, thus contributing to a deeper understanding of leadership's complexity.

Leadership Characteristics. Unlike other leadership styles, entrepreneurial leadership characteristics are more advantageous in navigating an increasingly complex, turbulent, and competitive business environment. Harrison et al. (2018) determined that to be successful, entrepreneurial leaders should develop skills within the following categories: technical, conceptual, interpersonal, and entrepreneurial. Bagheri (2017) asserted that leaders who demonstrate entrepreneurial leadership principles model entrepreneurial behavior and encourage employees toward new idea creation while fostering an innovative culture. Additionally, Mehmood et al. (2020) confirmed that entrepreneurial leaders, through their creative abilities, motivate, involve, and develop creativity in followers, resulting in exploring and exploiting new entrepreneurial opportunities. Furthermore, supported by Cai et al.'s (2019) study, Mehmood et al. recognized that entrepreneurial leaders create psychologically safe situations in which knowledge and idea-sharing between leaders and followers mediate the relationship

between entrepreneurial leadership and employee creativity. While these recent studies support that entrepreneurial leadership characteristics are similar, in some cases distinct, to other leadership styles, they also support the significant positive influence entrepreneurial leadership has on followers, innovation, and organizational performance. Many influencing factors not evaluated within these studies could affect entrepreneurial leadership. While other mediating factors were not controlled for, it can be inferred from the research that entrepreneurial leadership is an essential leadership style and plays a more significant role in realizing economic value within highly turbulent and uncertain environments.

Summary. Entrepreneurial leadership is a newer leadership paradigm derived from leadership theory and entrepreneurship theory and is the conceptual framework of this study. Currently, there lacks a universal definition of entrepreneurial leadership within the literature; however, countless authors have examined entrepreneurial leadership constructs, such as entrepreneurial orientation, opportunity recognition, risk-taking, and innovative work behavior, and their influence on innovation performance. While other leadership styles share similar leadership traits, skills, and behaviors, entrepreneurial leadership is tailored toward influencing and motivating followers to recognize and exploit new opportunities that create business and social value in complex and dynamic environments. Entrepreneurial leadership constructs have been shown to have a significant positive influence on innovation performance and are discussed within the literature review's *entrepreneurial leadership and innovation* section.

Organizational Innovation

The healthcare industry does not typically foster an entrepreneurial climate; therefore, the onus falls on healthcare leaders to catalyze organizational innovation using entrepreneurial approaches. Leaders who can successfully shape an entrepreneurial climate, embed effective innovation management practices, and promote creative and collaborative partnerships could positively affect healthcare innovation (Kremer et al., 2019; Machon et al., 2019). To achieve remarkable innovation performance, leaders must first develop innovative work behaviors of employees by cultivating opportunities to share knowledge, generate ideas, and collaborate within creative settings.

Healthcare Innovation

Healthcare and pharmaceutical innovation are critical to developing life-saving drugs. However, leaders are faced with significant challenges in supporting innovation diffusion, adaptation, and leadership efforts. Currie and Spyridonidis (2019) recognized that shared leadership significantly impacted innovation diffusion and local adaptation. Furthermore, Crespo-Gonzalez et al. (2020) noticed that the adaptation of innovation was vital to the long-term sustainability of the firm; though, innovation adaptation could also present a barrier due to required maintenance and loss of effectiveness over time. Machon et al. (2019) observed that a leader's ability to adapt to environmental changes and demonstrate a high degree of collaboration were essential to healthcare innovation. While radical innovation can be challenging in highly regulated industries, opportunities exist at the organizational level to foster entrepreneurial climates that promote innovativeness. Entrepreneurial leadership and innovation management play instrumental roles in

healthcare innovation. Leadership characteristics that shape innovative organizational capabilities are critical to innovation performance and sustainability.

Establishing innovation leadership as a core capability can support innovation management and improve firm performance. Innovation leadership is vital for improving quality, productivity, and efficiency, whether managing internal innovation processes or the external pressure from healthcare reform (Dalton et al., 2021). Avby et al. (2019) acknowledged three types of innovation: service, process, and organizational innovation in healthcare systems, and that innovativeness was influenced by entrepreneurial leadership practices, cross-team collaboration, robust performance metrics, and a learning-oriented culture. Avby and Kjellström (2019) described that better innovators are managers and teams who effectively manage development (exploration) and production (exploitation) challenges. Dalton et al. (2021) retrospectively reviewed 953 leadership statements and concluded that health leadership was not clearly recognized within health professional practice standards. If innovation leadership can be embedded in the organization's fabric, leaders may be better positioned to direct the flow of innovation toward new opportunity recognition and match the necessary resources to exploit them. Although the importance of innovation leadership is well established within the literature, there still exists a need for effective leadership frameworks to drive healthcare innovation, reform, and improve patient outcomes. Entrepreneurial leadership practices may help leaders develop individuals’ creativity, establish innovation management processes, and promote a climate that enables exploring and exploiting opportunities and challenges.

Innovation Management

Effective innovation management is essential for establishing an innovative culture and processes that create new business value. Innovation is a significant factor in a firm's ability to enter new markets, increase market share, and realize a competitive advantage and corporate sustainability (Bocken & Geradts, 2020; Kremer et al., 2019). Renkema et al. (2021) contended that human resource management could positively influence employee-driven innovation, specifically, that innovation initiatives form through the organizational route, the formalized-system route, and the project-initiative route. Kremer et al. (2019) further suggested six best practices for managers to become innovation leaders: develop appropriate group norms, design teams strategically, manage external stakeholder interactions, show leadership support, display organizational support, and effectively use performance management. Leaders need to understand how to manage and sustain corporate innovation, promote a culture of creativity, and understand how innovation transcends all aspects of the organization: strategy, structure, processes, incentives, and people (Bocken & Geradts, 2020). An organization’s entrepreneurial orientation is a significant influence on innovation and performance.

Understanding and applying effective innovation management strategies may facilitate enhanced stakeholder engagement and the implementation of innovation using cost-effective or lean processes that contribute to firm performance. Retkoceri and Kurteshi (2019) opined that business leaders associate innovation with ideas and a systematic management process that leads to new products and services. The authors also reported that process innovation was the most common form of innovation, followed by

product and service innovation (Retkoceri & Kurteshi, 2019). Business model innovation is often overlooked, even though it is essential in fostering an innovation culture (Retkoceri & Kurteshi, 2019). Solaimani et al. (2019) explained that using lean methods is a practical innovation approach, especially in coaching leadership, which enables the hard and soft processes that lead to enhanced innovativeness. Furthermore, Leonidou et al. (2020) identified that engaging various internal and external stakeholders through collaborative partnerships can enhance innovation output and entrepreneurship development. Effective innovation management practices are essential in facilitating an innovation process that produces a favorable cost-benefit relationship and creates value.

Innovation Work Behavior

Innovative work behavior is essential to innovation performance as it enables individuals to generate, promote, and implement new ideas. Knowledge management, including information sharing, organizational learning, and diversity, are essential tenets of innovation that drive organizational growth, performance, and sustainability through employee innovative work behavior. Anser et al. (2020) described that functional flexibility and knowledge sharing mediated the relationship between knowledge management infrastructure capabilities and innovative work behavior. More specifically, knowledge management infrastructure capabilities significantly predict functional flexibility and knowledge sharing, positively affecting innovative work behavior (Anser et al., 2020). Furthermore, knowledge sharing moderated knowledge management infrastructure capabilities and functional flexibility (Anser et al., 2020). Battistelli et al. (2019) ascertained that information sharing positively correlated with task-related and

interactional dimensions of work based learning. Furthermore, task-related learning positively correlated with innovative behavior through challenging tasks (Battistelli et al., 2019). Lastly, interactional learning had an indirect, positive relationship with innovative behavior through organizational commitment and challenging tasks (Battistelli et al., 2019). Leaders establishing a robust knowledge management system can foster a learning and knowledge-sharing culture that promotes innovative work behavior leading to idea generation and implementation. Consequently, innovation performance can be enhanced through knowledge management and innovative work behavior.

An innovative climate can help engrain innovative work behavior within the organization's fabric. Antecedents of innovative work behavior, such as employee engagement, knowledge sharing, organizational climate and capabilities, and self-leadership, positively contribute to desired innovation outcomes (Kör et al., 2021). Ali, Farooq, et al. (2020) recognized that organizational climate for innovation and employee engagement had a direct and indirect effect on innovative work behavior and that employee engagement partially mediated the relationship between organizational climate for innovation and innovative work behavior. Kör et al. (2021) contended that perceived organizational innovativeness, self-leadership, and self-leadership strategies were positively related to managers' innovative behavior. Furthermore, self-leadership mediated the organizational innovativeness and innovative behavior relationship, while risk-taking moderated the mediating effect (Kör et al., 2021). Bogilović et al. (2020) confirmed that cognitive group diversity mediated the negative relationship between visible dissimilarity and innovative work behavior. Furthermore,

innovative/entrepreneurial and team/clan climates moderated the relationship between visible dissimilarity and cognitive group diversity, thus reducing the negative effect visible dissimilarity had on innovative work behavior (Bogilović et al., 2020). Fostering innovative work behavior, employee engagement, and self-leadership within an entrepreneurial-oriented culture positively influences innovation performance. Innovation must receive leadership support and be incentivized to encourage employee commitment and the development of creative ideas.

Summary

Leadership is a crucial influencing factor in healthcare innovation, especially as healthcare settings are often less entrepreneurial and risk averse. Entrepreneurial leadership positively influences innovation performance when leaders establish an entrepreneurial orientation and foster innovative work behavior (Bagheri et al., 2020; Bocken & Geradts, 2020). Embedding appropriate innovation management practices is vital to facilitating creative and collaborative internal and external partnerships and diffusing and adapting innovative solutions across and within organizations. Entrepreneurial and innovation leadership has been shown to improve quality, productivity, and efficiency by exploring and exploiting new opportunities and challenges (Avby & Kjellström, 2019). Through entrepreneurial leadership and innovation management, healthcare companies can enter new markets, increase market share, establish competitive advantage, create new business models, and develop new products and services that meet the needs of a rapidly evolving healthcare landscape

(Bocken & Geradts, 2020). Thus, innovation performance can be catalyzed by a suitable entrepreneurial climate, innovative work behaviors, and leadership practices.

Entrepreneurial Leadership and Innovation

Entrepreneurial leaders have an opportunity to shape the healthcare landscape. Healthcare leaders may significantly influence innovation performance by developing entrepreneurial characteristics and demonstrating entrepreneurial behaviors. Leaders who model innovative behavior may encourage others to do the same and cultivate an entrepreneurial-oriented organizational culture, form, and function. Overall, entrepreneurial leadership as an innovation driver could lead to positive organizational performance, growth, and competitive advantage.

Entrepreneurial Orientation

Organizations with an entrepreneurial orientation can convert opportunities and challenges into organizational growth and profit. Organizational strategy, resources, entrepreneurial traits, and entrepreneurial spirit significantly contribute to organizational orientations that influence innovation performance, firm growth, and success. Abou-Moghli (2018) noticed a significant positive relationship between innovative, collaborative, and proactive entrepreneurs and business success, though surprisingly discovered that innovativeness and risk-taking entrepreneurial attributes are not crucial. Jeong et al. (2019) observed that leaders who establish an adaptive organizational culture and people-centered management style influence firm entrepreneurial orientation and performance. Song et al. (2019) further contributed that firm performance is positively influenced by knowledge capabilities fostered through an entrepreneurial and interaction

orientation. Leaders must develop specific entrepreneurial attributes and promote an entrepreneurial culture and orientation to catalyze and deliver positive innovation outcomes. By orienting the organizational culture and processes toward entrepreneurship and innovation, firms can grow and increase profitability.

An entrepreneurial orientation enables leaders to seek new opportunities and affect change that improves organizational performance. The relationship between entrepreneurial orientation and firm performance may be mediated by factors such as the firm's learning orientation, innovation performance, differentiation strategy, and leaders' leadership style. Innovation performance and differentiation strategy mediated the relationship between entrepreneurial orientation and firm performance (Zehir et al., 2015), while learning orientation partially mediated the relationship (Shaher & Ali, 2020). Entrepreneurship and innovation have many constructs, and by understanding the various factors, business leaders could establish a suitable strategy and climate that improves firm performance. An entrepreneurial orientation can stimulate learning, knowledge sharing, idea generation and implementation, risk-taking, and experimentation, all of which contribute toward innovation performance.

Entrepreneurial Culture

Leaders must establish an entrepreneurial culture and promote behaviors that foster innovation to enhance organizational performance. In their analysis, Crespo et al. (2022) determined that employee commitment, implementation of innovative ideas, and team culture supported market competitiveness and organizational performance. Furthermore, Crespo et al. determined that entrepreneurial environments would benefit

from new work culture systems focused on employee engagement and team based workplace situations. Entrepreneurial team culture is especially significant to advancing women's workplace status (Santos & Neumeyer, 2022). Leaders practicing entrepreneurial leadership may foster a team based learning culture oriented to implementing best practices that catalyze innovation performance. Leaders who invest in training and development and build a culture of sharing, creativity, and risk-taking can foster an innovation climate (Chebbi et al., 2020). However, building an entrepreneurial culture relies on leaders' ability to shape innovative employee behavior, foster creativity, and instill a resilient entrepreneurial spirit (Chebbi et al., 2020). Entrepreneurial leadership may significantly affect organizational culture, which fosters an environment conducive to creativity, innovativeness, risk-taking, and growth and development. Leaders shaping an entrepreneurial climate and innovative work behaviors can improve organizational performance.

Entrepreneurial Behavior

Leaders play a pivotal role in shaping employees' innovative work behavior within innovation initiatives. Bagheri and Akbari (2018) determined that leaders' entrepreneurial leadership methods strongly influence innovation work behavior and idea evaluation, creation, realization, and promotion. Additionally, leaders' entrepreneurial leadership encourages and supports employees in exploring and generating new ideas and seizing implementation opportunities (Bagheri, 2017) through empowerment, autonomy, and self-determination (Akbari et al., 2020). Employees who perceive a work environment as innovative and have strong self-leadership can better cope with

complexity and ambiguity and feel empowered to generate new ideas and engage in innovation (Kör et al., 2021). Kör et al. (2021) advocated using entrepreneurial leadership to foster an innovative organizational culture to promote innovative employee behavior. Newman et al. (2018) determined that leaders modeling entrepreneurial leadership behaviors were likelier to stimulate innovative behaviors in employees with higher creative self-efficacy than if they practiced other leadership styles. Recent studies support that leaders practicing entrepreneurial leadership could significantly affect innovative employee behavior. While the research did not control for other personal leadership and employee factors or diverse business contexts, the research still showed that entrepreneurial leadership plays a prominent role in employees' creative self-efficacy, self-leadership, ideation, and opportunity recognition.

Entrepreneurial Skills

Innovation is a pivotal aspect of corporate entrepreneurship and requires unique leadership skills to catalyze innovation performance. To run organizations successfully, leaders must have relevant leadership and entrepreneurial attributes, skills, and competencies to exploit opportunities and overcome challenges (Harrison et al., 2020; Ordu, 2020). Entrepreneurial skills are essential to designing innovative strategies that support exploiting new opportunities within dynamic environments. Like the definition of entrepreneurial leadership, aligning on a determinant set of entrepreneurial skills remains a challenge within the literature. Škare et al. (2022) found that entrepreneurship is strongly related to creativity and leadership and, to a lesser degree, to communication. Entrepreneurial leadership facilitates the generation of competitive advantage and is

supported by entrepreneurial leadership skills and behaviors, cultural values, and mindset (Škare et al., 2022). In addition to risk-taking, creativity, autonomy, and proactiveness, entrepreneurial leaders must be able to create and influence a strategic vision, be efficient with their time and energy, market their value, make rapid decisions, quickly build trust, and facilitate new ideas generation, experimentation, and solution development (Ordu, 2020). Furthermore, effective social skills enhance interpersonal connections and job performance (Niazi et al., 2020). Niazi et al. (2020) found that managerial competency positively influences entrepreneurial leadership, and that entrepreneurial leadership positively influences job performance. Currently, limited studies include an examination of specific entrepreneurial leadership skills across varying contexts, which would require future research. However, there is a good foundation within the literature on the moderating or mediating effects of entrepreneurial leadership influence on various leadership, innovative behavior, and innovation performance relationships.

Negative Entrepreneurial Leadership Traits

The entrepreneurial leadership body of knowledge covers many favorable traits that influence opportunity recognition, entrepreneurial orientation, and organizational performance; however, little is discussed on negative traits or outcomes. Kraus et al. (2020) examined the role of narcissism, Machiavellianism, and psychopathy on opportunity recognition, entrepreneurial activity, orientation, leadership, and motives. Kraus et al. affirmed that narcissism is related to high self-confidence, power, fame, and recognition, leads to higher entrepreneurial risk-taking behaviors, and is commonly found in leadership personalities. The inability to reflect on failures and recognize opportunities

resulted from narcissistic entrepreneurial leadership (Kraus et al., 2020; Liu et al., 2019). While Machiavellianism can be considered manipulative, self-serving, and immoral, coalition-forming and reputation-building traits benefited entrepreneurial leaders who could foster new networks, extract information, and recognize opportunities (Kraus et al., 2020). Psychopathy is related to status and prestige, egocentricity, domination, impulsivity, and imprudent behavior (Kraus et al., 2020; Palmen et al., 2020, 2021). Psychopathy was found to be beneficial for opportunity exploitation; however, entrepreneurial leaders focused on business ideas that delivered them power and rewards and less on social value (Kraus et al., 2020). Kraus et al.'s findings highlight the importance of entrepreneurial leadership integrity. If entrepreneurial leaders can avoid self-serving behaviors and emphasize social entrepreneurship and innovation, they could foster idea generation, opportunity recognition and exploitation, an entrepreneurially oriented climate, and catalyze innovation performance that produces positive business and societal value.

Entrepreneurial Leadership and Innovation Performance

Globalization and rapid technological advancement have encouraged a greater focus on new value creation, product innovation performance, and entrepreneurial management of dynamic business environments (Pinelli et al., 2022; Rehman et al., 2021). The role of leaders is increasingly being analyzed for its effect on organizational vision and strategy, employee performance, and exploitation of innovation opportunities (Miao et al., 2019). Bagheri et al. (2022) asserted that entrepreneurial leadership had a positive relationship with innovative employee behavior within new ventures which

could contribute to organizational innovation strategies, activities, and performance. Conversely, Rehman et al. (2021) argued that entrepreneurial leadership did not directly affect innovation performance, though the literature did not support their findings. Miao et al. (2019) detected that CEO's entrepreneurial leadership was positively associated with the top management team and individual employee performance, further noting that psychological safety mechanisms mediated this relationship. Leaders play an instrumental role in driving innovation through their influence over organizational culture, business practices, and human resource management.

Research indicates that organizational performance is influenced by entrepreneurial leadership. Competitive advantage and organizational sustainability can be created through effective leadership; human capital, resource, and knowledge management; and trust. Simić et al. (2020) insinuated that entrepreneurial leadership strengthens human capital's effect on organizational performance, while Sarmawa et al. (2020) established that ethical entrepreneurial leadership had a profound positive effect on trust between employees and, subsequently, on organizational sustainability. Furthermore, Soomro et al. (2019) noted that entrepreneurial leaders' vision for change could influence followers' ability to create or exploit strategic organizational value. An essential task for business leaders is the promotion of ideal entrepreneurial behaviors and a culture conducive to superior value creation and performance realization.

Entrepreneurial leadership may achieve superior organizational performance that influences future events and supports employee innovativeness. Organizations need experienced entrepreneurial leaders who promote and foster innovative employee

behavior, leading to new customer value and sustainable organizational growth. Developing talent within an organization is necessary, though insufficient, as leaders' entrepreneurial proficiencies play a pivotal role in leveraging employees' abilities to achieve superior performance (Simić et al., 2020). Dabić et al. (2021) concluded that leaders' entrepreneurial leadership behaviors mediate the effect of employees' intellectual agility on organizational innovativeness and performance through community building and future orientation. Shaher and Ali (2020) indicated that an organization's entrepreneurial orientation positively and significantly influences innovation performance. While entrepreneurial leadership positively affected the innovation process, Fontana and Musa (2017) determined that idea selection, development, and diffusion did not necessarily lead to innovation performance. There are many direct and mediating dimensions to innovation and organizational performance, with leaders' entrepreneurial leadership predispositions, knowledge, skills, and abilities playing an influential factor.

Organizational Sustainability

The sustainability of an organization is a true measure of business success, and the leader is the key to delivering it. Pauceanu et al. (2021) argued that it is not enough to have entrepreneurship or leadership characteristics to achieve firm development and sustainability objectives. In a competitive environment, it is essential to have both entrepreneurial and leadership traits, such as entrepreneurial leadership, to innovate, embrace risks, capitalize on opportunities, maximize organizational performance, and thrive (Pauceanu et al., 2021; Sarmawa et al., 2020). Furthermore, entrepreneurial leadership positively influences innovation performance; employee creativity,

innovativeness, engagement, motivation, and trust; job-embeddedness; and overall firm performance; while decreasing employee turnover (Pauceanu et al., 2021; Sarmawa et al., 2020). While entrepreneurial leadership's effect on organizational sustainability requires more profound contextual research, the literature supports a positive relationship through entrepreneurial leadership's direct influence on organizational innovation, including influence on organizational orientation, culture, and human capital.

Social Entrepreneurship and Innovation

Social entrepreneurship and innovation can support organizational and societal sustainability. Social entrepreneurship and innovation comprise the process of new idea creation that confers social benefits and value to multiple stakeholders, such as individuals, businesses, government institutions, and society as a whole (Bodolica et al., 2021; Stirzaker et al., 2021). Leaders can enhance the organization’s bottom line through innovative solutions while imparting positive social change. To effect positive social change through social entrepreneurship, leaders should help cultivate credibility, confidence, and endorse ideas; support the value proposition; and assist in securing adequate resources for broad-scale idea implementation (Bodolica et al., 2021). Leaders should establish corporate social responsibility strategies and entrepreneurial development training programs that elicit authentic motivation from social intra/entrepreneurs to engage in social entrepreneurship (Carvalho, 2022). Leaders motivate others to think and act beyond business performance outcomes. Social entrepreneurship and innovation provide a pathway to contribute ideas and innovative solutions designed to add economic, social, ecological, or psychological value.

Summary

Leaders' entrepreneurial leadership traits, skills, behaviors, and mindsets drastically affect healthcare innovation performance. Leaders who demonstrate entrepreneurial leadership abilities can foster an entrepreneurial orientation and culture that promotes creativity, innovative work behavior, and the exploration and exploitation of new opportunities. An entrepreneurial climate stimulates employee and team commitment and engagement in innovation management and facilitates the implementation of new ideas (Crespo et al., 2022; Santos & Neumeyer, 2022). Training and development and leadership support are essential elements of nurturing entrepreneurial leadership behavior as it leads to enhanced creativity, knowledge sharing, and risk-taking (Bagheri, 2017; Chebbi et al., 2020). Empowerment, autonomy, and self-determination enable employees' innovative work behavior that encourages self-efficacy, new idea generation, experimentation, and implementation (Akbari et al., 2020). Entrepreneurial leadership skills are essential to developing creative strategies and solutions that produce new business and customer value, market competitiveness, competitive advantage, and organizational sustainability through employee innovativeness and innovation performance (Pauceanu et al., 2021; Škare et al., 2022). While there are several negative entrepreneurial leadership traits, such as narcissism, authentic leaders who maintain high integrity, selflessness, and focus on the greater good can positively influence innovation performance and contribute toward social entrepreneurship. Within the literature, entrepreneurial leadership has been shown to

positively influence organizational innovation and help establish an entrepreneurial orientation, culture, and innovative work behaviors that catalyze innovation performance.

Conclusion

As leadership and entrepreneurship theories converge, the universal definition of entrepreneurial leadership may take form, and its influence and effect on organizational performance, innovation, and leaders' proficiencies more precisely measured. Entrepreneurial leadership's broad definition indicates that future studies will enrich the body of knowledge and provide a deeper understanding of the concept within diverse contexts. As the business environment becomes more complex, turbulent, and competitive, leaders must enhance their skills to identify new opportunities, manage uncertainty and failures, and exploit limited resources to achieve strategic value creation (Harrison et al., 2020). Numerous authors' work supported the significant positive relationship between entrepreneurial leadership and innovative employee behavior, emphasizing entrepreneurial leadership's direct role in innovation initiatives (Bagheri, 2017; Dabić et al., 2021; Mehmood et al., 2020; Newman et al., 2018). This positive relationship underscores the importance of developing, adopting, and practicing an entrepreneurial leadership style in influencing followers within creative settings. Leaders' ability to shape an entrepreneurial orientation and culture that supports innovation may achieve superior organizational innovation and performance. Entrepreneurial leadership is a unique style that promotes greater creativity and innovation geared toward superior organizational success. Healthcare leaders who embrace entrepreneurial leadership could help their organizations innovate, navigate complex business environments, establish new

competitive advantages, and experience greater profitability and growth. Future research can contribute to entrepreneurial leadership theory by focusing on the introduction and validity of additional instruments and how researchers and leaders can accurately measure entrepreneurial leadership, considering current theoretical and practical implications.

Transition

Entrepreneurial leadership theory is a new concept and has not been universally defined or broadly applied within organizational contexts. Healthcare business leaders are typically risk averse and often unsuccessful in embedding innovative work behaviors, processes, and orientations that exploit entrepreneurial contexts. Therefore, the purpose of this qualitative multi-case study was to explore entrepreneurial leadership strategies that catalyze innovation performance. Healthcare business leaders who had successfully implemented innovation initiatives using entrepreneurial leadership strategies, specifically within the pharmaceutical, medical device, and consumer sectors, were the target population for this study. The literature review included evidence of entrepreneurial leadership characteristics that promote employee creativity, innovativeness, and experimentation, leading to enhanced innovation performance within complex business environments. The results of this study may contribute to professional practice and positive social change by providing healthcare business leaders with practical strategies for stimulating innovation, thereby creating additional jobs and wealth.

Section 2 comprises the role of the researcher and participants, an outline of the intended research methods and design, population and sampling parameters, ethical research considerations, and an in-depth account of the data analysis process, including data collection instruments and organization techniques, and analytical methods. Research quality management through reliability and validity criteria was also covered in Section 2. A presentation of the research findings and their application to professional practice and social change is reported in Section 3. Furthermore, my recommendations for action and further research were delineated.

Section 2: The Project

Section 2 comprises a restatement of the research problem to remind readers of the focal topic, a description of the researcher's role in the data collection process and their relationship with the topic and participants, information on participant eligibility criteria and strategies for participant access, and relevant ethical considerations. Furthermore, the chosen research methods and design are described, including population and sampling parameters. Lastly, a comprehensive review of the research process surrounding data and research quality management is provided.

Purpose Statement

The specific business problem is that some healthcare business leaders lack entrepreneurial leadership strategies to catalyze innovation performance. Therefore, the purpose of this qualitative multi-case study was to explore entrepreneurial leadership strategies that some healthcare business leaders working in the pharmaceutical, medical device, and consumer healthcare sectors in North America and Western Europe used to catalyze innovation performance.

Role of the Researcher

Data Collection Process

A well-defined data collection process is critical to quality research, and as the researcher of this qualitative multi-case study, I served as the primary data collection instrument. Qualitative researchers aim to evaluate phenomena in their natural settings by uncovering the applied meaning attributed by research participants (Aspers & Corte, 2019). The role of qualitative researchers is to collect and study empirical artifacts, such

as case studies, personal experiences, real-world observations, and interview data (Denzin & Lincoln, 2018). Qualitative research is less standardized than quantitative research, making it essential for qualitative researchers to codify their practices systematically (Aspers & Corte, 2019). Chowdhury and Shil (2021) suggested that case researchers establish research site entry strategies using formal and informal gatekeepers, proactively plan fieldwork, and be knowledgeable about data generation and collection procedures and analytical techniques that enhance the validity, reliability, and generalizability of the case study data. This doctoral study comprises a qualitative multi-case study design.

As the researcher and primary data collection instrument, I appropriately selected participants and collected data from multiple sources, such as semistructured interviews and archival records. My role as the researcher started with defining the case or cases; developing a theoretical perspective aligned with my research design; identifying, collecting, and triangulating multiple data sources; and including opposing views to address the research question comprehensively. Ubochi et al. (2021) used a purposive sampling technique to explore the perceptions, meanings, and practices of entrepreneurship among nurses. Similarly, Avby et al. (2019) used purposive sampling to ensure that a variety of aspects, such as location, were included in their study to determine what enables healthcare innovation. However, Avby et al. stated that purposive sampling may have affected their results. Therefore, I selected participants based on a purposive sampling technique with elements of convenience sampling, built trusting relationships, and actively managed selection bias. Miller et al. (2020) found that

semistructured interviews were conducive to collecting data on the effect of using iterative circles within innovation management practices. Likewise, Murray and Palladino (2020) used semistructured interviews to investigate modern entrepreneurs' human capital. Hence, I used semistructured interviews to determine successful entrepreneurial leadership strategies that catalyze innovation performance.

Relationship With the Topic, Participants, or Research Area

The relationship between the researcher, the research area, and the participants is essential to the topic under evaluation and the research outcome. While close relationships may exist, the researcher must build trust while remaining objective, maintaining adequate distance, and limiting the influence of their biases or positionality (Thurairajah, 2019). Qualitative researchers must engage in continual reflexivity, internal dialogue, and critical self-evaluation of their positionality and how it may influence their research process and outcome through enhanced analysis and interpretation (Calabria, 2019). Research quality may be improved through reflexivity, thus lending credibility, transparency, and ethical considerations to the research by establishing boundaries and following basic guidelines.

As the researcher, I had experience and knowledge in and had led organizational innovation initiatives. Accordingly, I was familiar with implementing strategies surrounding organizational innovation. Inspired by the topic of innovation leadership, I sought to gain a deeper understanding of entrepreneurial leadership strategies that may catalyze innovation performance. Thus, a research question was formed surrounding this topic as a basis for inquiry. Moreover, as the researcher, I had no preestablished

relationships with participants other than the potential of a limited professional networking relationship developed from working within the healthcare industry. Each participant was expected to provide truthful and unprejudiced responses about implementing successful entrepreneurial leadership strategies to catalyze innovation performance. I practiced continual reflexivity to mitigate potential bias based on my past experiences with the research topic and limited relationships with participants.

Research Ethics

Ethical behavior is the linchpin of quality research, emphasizing the need to protect research participants' best interests. Protecting participants' rights includes ensuring respect for persons, beneficence, and justice, which capture the ethical values inherent in quality research (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research [NCPHSBBR], 1979; Schupmann & Moreno, 2020). It is the role of the researcher to treat participants autonomously, fairly, and openly to make informed choices concerning the extent and risks of participation through a robust informed consent process before engaging in research activity (NCPHSBBR, 1979; Schupmann & Moreno, 2020). Subjects inherently trust researchers; therefore, a researcher's role is to understand and communicate the nature and scope of the study's risks and benefits, ensure an acceptable benefit-to-risk ratio, and distribute risks equitably (NCPHSBBR, 1979; Schupmann & Moreno, 2020). Fundamentally, respect for persons, beneficence, and justice are research values and principles captured in the Belmont Report and must be adhered to by researchers.

As the researcher, I mitigated bias, ethically treated participants, and collected and reported data in alignment with the Belmont Report. Following the Belmont Report's guiding principles, I treated participants with respect through a robust informed consent process, including assessing the risks and benefits of participation and ensuring fair treatment throughout the research study. Furthermore, participants' time and effort were appreciated, their individual needs met, and their contributions recognized and connected to the overall study outcome. Participants and company identifiers were masked using pseudonyms, such as P1 or Company 1, to protect privacy. As a doctoral student researcher, I completed the collaborative institutional training initiative (CITI Program) certification (Record ID 42431199), which prepared me to follow ethical research principles. I adhered to the Belmont Report's tenets of respect for persons, beneficence, and justice within this doctoral study.

My role as the researcher and primary data collection instrument was to mitigate bias, including avoiding data interpretation through a personal lens. My use of a case study interview protocol (see Appendix A) and semistructured interview format enabled greater flexibility in the data collection process. Furthermore, the interview protocol and semistructured format facilitated open dialogue, in which interpretations and misunderstandings between me as the researcher and the participant were clarified or expanded upon. External validity is contingent on well-defined cases and research protocols that establish the rules to be followed (Quintão et al., 2020). Thus, by detaching preformed personal perceptions and opinions regarding the topic and using an interview protocol, I was able to mitigate personal bias. Quintão et al. (2020) suggested that the

protocol contain data collection techniques, such as interview recording, response coding, and data analysis methods. Therefore, I defined in the protocol my process to memorialize interviews via video and audio-recording, transcribe responses, and conduct member checking to mitigate personal bias and ensure that the data truly reflect participants' views.

Participants

Participant Eligibility Criteria

Ensuring that the right participants are included in a study based on predefined criteria is crucial to quality research. Eligibility criteria, inclusion, and exclusion are key characteristics of the target population used to answer the research question and mitigate a potentially unfavorable study outcome (Patino & Ferreira, 2018). The target population of this study involved healthcare business leaders who had successfully used entrepreneurial leadership strategies for catalyzing innovation. Furthermore, study participants were creative, strategic thinkers who had contributed to innovation initiatives within the last 5 years. Creative leadership was an essential component of the study to explore how leaders tap into their innate entrepreneurial mindset and ability to lead themselves and others in achieving organizational goals (Gheerawo et al., 2020). Strategic management skills, innovation, and leadership capabilities enable leaders to play a significant role in delivering entrepreneurial outcomes, such as job creation, R&D, and organization competitiveness (Abou-Moghli, 2018). Thus, creativity, strategic management, knowledge, and relevant experience were vital criteria for study eligibility and evaluation.

Strategies for Establishing Participant Access and Relationships

Access to participants begins with institutional review board (IRB) approval of the study proposal to ensure the ethical protection of participants. An investigator then must seek, negotiate, obtain, and explain the research study to prospective participants through a well-documented informed consent process (Vuban & Eta, 2019). Using personal contacts and gatekeepers within the investigators' network may be an effective strategy for gaining access to research sites and participants (Vuban & Eta, 2019). Providing incentives, such as research outcomes or the study report, may mitigate the challenge of participant access within and across organizations. Additional access strategies may include supporting organizational initiatives, securing administrative permits well in advance, using participants' preferred time and location for interviews, and reassuring anonymity and confidentiality of participation (Vuban & Eta, 2019). The proactiveness and flexibility of researchers can remove barriers or limit challenges to participant access.

Following Vuban and Eta's (2019) recommendations for negotiating access to research sites and participants, I emailed and sought approval from senior business leaders (gatekeepers) by explaining my research study and process, including participant selection criteria, interview format, data collection and analysis, member checking process, and the voluntary and confidential nature of the study. I requested access to participants and pertinent archival records, documented all approvals, and engaged recommended participants in the informed consent process. If additional participants had been needed to reach data saturation, I would have identified and recruited, through

personal contacts, business leaders who met the eligibility criteria, such as successfully using entrepreneurial leadership strategies to catalyze innovation performance.

Access to sites and participants may come with inherent challenges. The researcher–participant relationship can be complex due to fundamental disparities in personalities, power relations, needs, perceptions, biases, and other demographic factors (Vuban & Eta, 2019). Researcher positionality may help gain access to participants, shape the lens of the research, and bridge the gap between researcher and participant through shared experiences (Calabria, 2019). Maintaining a steadfast distance between the researcher and participant may limit the depth and breadth of data; therefore, a semipermeable but objective relationship built on trust may uncover the participants' truth (Thurairajah, 2019). Forming partnerships with participants through active engagement in the research protocol, data collection and validation, and dissemination of results may establish greater vested interest and compliance with the research process, avoid power disparities, and open up access to participants' lived realities (George et al., 2020). The researcher–participant relationship may be positively influenced by trusted partnerships and shared experiences that increase confidence in the researcher and research outcomes. Greater trust and confidence in the relationship should lower access barriers, increase participation, and lead to quality data.

To reduce access barriers and increase the likelihood of participation, I facilitated the informed consent process using trust and rapport-building approaches without jeopardizing my position as the researcher. Furthermore, following Calabria's (2019) recommendation to leverage the researcher's positionality, I discussed shared experiences

surrounding the topic and relevant life experiences or circumstances. Thurairajah (2019) determined that a semipermeable relationship is beneficial between the researcher and participant; therefore, I established semirigid boundaries that fostered a trusting relationship while objectively uncovering participants' stories. To form and maintain working relationships with participants, I followed George et al.'s (2020) process of building rapport and trust early, guiding them through data collection, including interviews and data analysis, and engaging them through member checking and disseminating results. Having well-defined recruitment strategies for the identification and inclusion of participants increased the likelihood of participation, supported the attainment and verification of participant responses, and led to high quality research outcomes.

Research Method and Design

Research Method

This doctoral study's focal topic was entrepreneurial leadership strategies that healthcare business leaders use to catalyze innovation performance. The chosen research method for this study was a qualitative approach. While qualitative, quantitative, or mixed methods research methods may be appropriate for use in a doctoral business study (Stake, 2005), several authors have recognized the growing emphasis on qualitative methods within the medical or healthcare industry (Rankl et al., 2021; Vindrola-Padros et al., 2020), which is relevant to the business environment under evaluation. A qualitative approach supports an in-depth exploration of the meanings' healthcare workers attribute to their surroundings and enables rich insight into their experiences (Rankl et al., 2021).

Therefore, using qualitative methods to conduct an in-depth inquiry into entrepreneurial leadership strategies, their application to innovation management, their effect on innovation performance, and business leaders' individual experiences within healthcare settings supported the methodological choice for this doctoral study. The nature of qualitative methods, contrary to quantitative and mixed methods, allows for smaller sample sizes, more profound and rapid inquiry into concepts and individual perspectives, and the necessary flexibility to respond and adapt to research findings in real time (Vindrola-Padros et al., 2020). As this doctoral study's qualitative multi-case study design comprised a small sample size, a rapid and flexible inquiry to reach data saturation made a qualitative approach preferential.

Quantitative and mixed methods research was not a suitable methodological choice for this doctoral study. Quantitative research comprises hypothesis testing, assumptions about relationships between variables, representative samples, and variables' measurement and statistical testing (Bloomfield & Fisher, 2019). This study was not hypothesis-directed nor did it begin with a theory, and it was not my intention to set out to prove or disprove a theory. Mixed methods researchers focus on creating generalizable outcomes from a qualitative approach using quantitative and qualitative methodologies (Strijker et al., 2020). Strijker et al. (2020) recognized that within the literature, there are many examples in which a mixed methods approach has been shown to provide greater insight into real-world problems; however, the authors acknowledged that those studies were not at the single-paper level and were better suited for larger projects. Quantitative and mixed methods research would have added unnecessary structure and adversely

affected the true exploratory nature of this study. Therefore, quantitative and mixed methods research were not appropriate for satisfying the research objectives of this doctoral study.

Research Design

The chosen research design for this study was a qualitative multi-case study approach and was selected over phenomenological, grounded theory, ethnographic, and narrative inquiry research designs as more suitable for meeting the research objectives. Case studies have roots in the medical, legal, and psychological research fields (Chowdhury & Shil, 2021). Evaluating multiple cases enables a researcher to identify a phenomenon's holistic and meaningful attributes within specific contexts (Chowdhury & Shil, 2021). A researcher using multi-case study strategies investigates specific case subjects, such as persons, groups, organizations, processes, or events (Yin, 2018). A phenomenon is explored in real-life settings (Yin, 2018). Qualitative multi-case study designs can lead to rich, empirical descriptions and theory development, allowing a researcher to make analytical rather than statistical generalizations (Yin, 2018). Bounding the cases, expressly participant and time boundaries are critical in determining the scope of the data collection and what data are relevant to the phenomenon or external to the cases (Yin, 2018). Adequately defining the case boundaries is crucial for doctoral students to ensure an appropriate time horizon, research focus, and minimal cost associated with conducting their research. The doctoral study was a qualitative multi-case study.

Alternative qualitative designs include phenomenological, grounded theory, ethnographic, and narrative inquiry. Phenomenological research designs are used to capture the participants' lived experiences of the phenomenon (Pathiranage et al., 2020; Renjith et al., 2021). Like case study research, phenomenological researchers seek to identify meaning through rich descriptions. However, phenomenological research is focused on capturing textural and structural descriptions of what and how the phenomenon was experienced (Renjith et al., 2021). Participants' lived experiences were not a part of the scientific inquiry or the study's unit of analysis. Therefore, a phenomenological research design was not suitable for this study.

The primary purpose of a grounded theory researcher is to construct a theory in the context of the social process under evaluation using data generated from the study (Chun Tie et al., 2019; Renjith et al., 2021). Grounded theory is often used to explore the participant's process, action, or interaction with the phenomenon (Pathiranage et al., 2020). Theory generation and development are not a part of the research objectives of this study; therefore, grounded theory was not selected as a suitable research design.

Ethnographic research is rooted in anthropology and helps researchers understand participants' cultural-specific knowledge and behavior within their natural settings (Ghirotto et al., 2020; Pathiranage et al., 2020; Renjith et al., 2021). Ethnographic research is often conducted by directly observing events unfolding and may or may not include interviewing participants (Ghirotto et al., 2020). Observing participants' social actions and interactions within a given context is not a part of the design for this study; therefore, ethnographic research was not a suitable design methodology for this study.

Narrative research is a valuable method for exploring an individual's life and capturing and revealing personal stories of their lived experiences (S. J. Murray & Tuqiri, 2020; Renjith et al., 2021; Sonday et al., 2020). Storytelling is the predominant form of communicating participants' lived experiences (Renjith et al., 2021). While participants may incidentally share stories to validate actual experiences within their interview responses, a narrative inquiry was not the intended research strategy for this study.

Data saturation is a critical element of research quality and is associated with sampling strategies and size. Data saturation is considered the pinnacle of data collection and can be reached once no new information is received from participants (Alam, 2021; Morse, 1995). For this doctoral study, I interviewed healthcare business leaders until no new information contributed to the database, no additional themes were generated, and additional data did not contribute value to answering the research question. Data from multiple sources, such as organizational business strategies and websites, and six business leader interviews, was collected and analyzed to reach saturation. Additional interviews would have been conducted until data saturation was reached. The qualitative multi-case study design and use of multiple data sources within this study enabled the collection of quality evidence and the need for fewer participants.

Population and Sampling

Sampling Method

The targeted population involved healthcare business leaders in North America and Western Europe working in the pharmaceutical, medical device, and consumer healthcare sectors who successfully implemented entrepreneurial leadership strategies to

catalyze innovation performance. The sampled population from whom data were collected involved six healthcare business leaders who had demonstrated evidence of successfully applying entrepreneurial leadership strategies to catalyze organizational innovation. The following key eligibility criteria were used within the study: healthcare business leaders who (a) have been successful in implementing entrepreneurial leadership strategies to catalyze innovation performance, (b) are creative, strategic thinkers, and (c) have led or significantly contributed toward strategic decisions within healthcare innovation initiatives within the last 5 years.

A nonprobabilistic, purposive sampling method was selected for this study. The process included an element of convenience sampling; however, the specific nature of the criteria for involvement made this design purposive. Campbell et al. (2020) contended that purposive sampling better matches the sample to the research aim and objectives. As I sought to recruit healthcare business leaders who had successfully implemented entrepreneurial leadership strategies to catalyze innovation performance, in alignment with Campbell et al.'s contention, a nonprobabilistic, purposive sampling method was appropriate for the study as it aligned the sample with the research objectives. Furthermore, depth of understanding is increased through a small and purposively selected sample of participants that may provide meaningful insight while efficiently using limited research resources (S. Campbell et al., 2020; Denzin & Lincoln, 2018). Purposive sampling supports the study rigor and trustworthiness of the data (S. Campbell et al., 2020). Purposive sampling was selected as it aligned my research methodology, aims, and objectives, thus contributing to the research rigor of the doctoral study.

Data Saturation and Sample Size

In qualitative research, the sample size is often justified based on the principle of data saturation. Data saturation is defined as data adequacy and is reached once no new information is received from participants, and a full range of ideas has been proffered (Alam, 2021; Morse, 1995). The higher quality of data provided by the participants; the fewer participants are needed for the study (Gill, 2020). Furthermore, data saturation may be reached more rapidly through data triangulation of multiple data sources (Denzin & Lincoln, 2018; Fusch et al., 2018). A researcher determines the data's adequacy and comprehensiveness of the results as patterns and themes emerge from rich, detailed descriptions of the phenomenon under evaluation (Morse, 1995). As a first step, the presence and frequency of themes are identified; however additional data may be required to reach data saturation to understand better the issue's depth, breadth, and nuance and its applied meaning (Hennink et al., 2019). This study involved multiple data sources to generate higher quality data through fewer participants, including six in-depth, semistructured interviews and a review of participant-provided evidentiary documentation, such as organizational business strategies and websites. Therefore, targeting six case studies (two for each healthcare sector) was anticipated and justified to reach data saturation. If saturation did not occur after collecting data and interviewing six participants, the data collection process would have continued with the recruitment and interviewing of additional participants until saturation was achieved.

Interview Setting

This qualitative multi-case study involved six semistructured interviews conducted virtually via Microsoft Teams or Zoom. The rise of conference calling tools has provided qualitative researchers with cost-effective and convenient alternatives to in-person interviews (Gray et al., 2020). Gray et al. (2020) determined that remote interviews via conference calling tools were convenient and easy to use, enhanced personal connections, allowed for greater accessibility over various devices, and saved participants' travel time. The virtual nature of the interviews gives participants more control over the time and location that is most convenient for them; therefore, interviews for this study were scheduled according to participant preferences. The advent of technology has enabled more economical, diverse, and geographically dispersed research.

Ethical Research

Ethical research practices are critical to quality research outcomes and the protection of participants. This study's ethical oversight included university and IRB approvals (# 09-22-22-1058822), doctoral committee oversight, and a well-documented informed consent process. Researchers must obtain informed consent from potential participants before conducting research (Jacquier et al., 2021). Informed consent is a means to ensure that participant autonomy is respected, and that each participant has received adequate information about the study (Jacquier et al., 2021; Sandu, 2020). Furthermore, by helping potential participants grasp and willfully agree to the details of the study, the researcher demonstrates respect for persons and abides by ethical research standards (NCPHSBBR, 1979; VandeVusse et al., 2022). Before proceeding with this

research study, I obtained Walden University committee and IRB approvals and then fully consented participants. Having adequate research ethics oversight contributed to research rigor and helped protect participants from undue harm.

Challenges still exist even though the informed consent process is well-established in research. Several authors have highlighted concerns in the literature surrounding informed consent in qualitative research (Douglas et al., 2021; VandeVusse et al., 2022). For example, participants may be reluctant to provide consent knowing their responses will be shared, rendering data sharing highly selective (Jacobs et al., 2021; VandeVusse et al., 2022). Furthermore, the study's validity may be questioned if participants are self-conscious about responding to sensitive topics (MacLean et al., 2019; VandeVusse et al., 2022). Additionally, Douglas et al. (2021) observed that many participants signed consent forms without actually reading them. VandeVusse et al. (2022) suggested that researchers assess participants' willingness to share their data, their understanding of data sharing, and their motivations for consenting or not consenting to have their data shared. Having clear mitigation strategies and close researcher involvement may alleviate participation concerns.

To mitigate these challenges, I sent the informed consent form to potential participants via email for prereview, addressed questions or concerns through discussion, and confirmed consent aspects at the interview's beginning. Participants were reminded that highly sensitive information would not be collected, that responses are confidential and masked using pseudonyms (such as P1 or Company 1), they had the opportunity to review their responses, and the opportunity to withdraw their consent to participate at any

point via face-to-face, telephone, or written means and be removed from the study. Furthermore, study participation would have been paused or terminated if any signs of discomfort with the research were observed. Taking the time to ensure consent is documented and well-understood enhanced research credibility and validity.

Researchers must ensure that high ethical research standards are adhered to before, during, and after the conduct of a study (Denzin & Lincoln, 2018); therefore, I completed the collaborative institutional training initiative (CITI Program) certification (Record ID 42431199) as a doctoral student researcher. Furthermore, unwavering adherence to the Belmont Report's ethical guidelines was followed. Specifically, I respected participants' autonomy, protected them from harm while maximizing benefits, and promoted equitable representation of the risks and benefits. I made participants aware of all relevant study information, including risks and benefits, so they could make a voluntary and fully informed decision to participate. Full disclosure of the doctoral study's procedures and any benefits or risks to the participants was provided to Walden University's IRB for approval before any participant recruitment, data collection, or dataset access was conducted. I leveraged the restricted set of case study procedures, agreements, and consent forms that already had procured IRB preapproval. After IRB approval was confirmed and partner agreements were established, the participant contact information was solicited, individual interviewees were given study details and an informed consent form, interviews were scheduled, and supporting documentation was collected. The final doctoral manuscript includes the Walden IRB approval number to attest that Walden University's high ethical standards have been met.

Within this study, informed consent included details surrounding the study purpose, relevant procedures, voluntary nature of participation, any risks or benefits, and the researcher's contact information. Privacy is a vital aspect of the informed consent process. Therefore, potential participants were made aware of the steps to protect their confidentiality, including the masking of any identifiers with pseudonyms (such as P1, P2) and how data is kept secure for at least 5 years, such as restricted access, password protection, data encryption, use of codes in place of names, and data destruction. A participant could withdraw consent anytime via face-to-face, telephone, or written means and be removed from the study. There were no incentives for participation in this study, though participants who completed the study may be provided a copy of the study summary report.

Data Collection Instruments

As the researcher of this qualitative multi-case study, I served as the primary data collection instrument. Yin (2018) suggested that a case study protocol comprises an overview of the case study, data collection procedures, protocol questions, and a tentative outline for the case study report. Although a protocol includes a set of substantive questions used in data collection, it serves more than a conventional questionnaire or instrument (Yin, 2018). Yin advocated that the protocol contains questions about each case representing a line of inquiry and not just questions to be verbalized to the interviewee. Designing protocol questions based on a line of inquiry adds flexibility and adaptability and emphasizes the researcher as the primary data collection instrument of

case study research. Thus, I served as the primary data collection instrument for this doctoral study based on Yin's proposition.

The data collection for this doctoral study involved multiple data sources following a formal case study interview protocol (see Appendix A). The interview protocol guided me in gathering evidence, data analysis, and case study reporting, thus ensuring better research quality. Yin (2018) described reliability and validity in simple terms: reliability refers to replication and consistency, while validity refers to the suitability of the research measures used, the analytical accuracy of the results, and the generalizability of the study's findings. In the context of qualitative research data analysis, dependability, bias, cultural differences, transferability, and credibility are potential areas of data quality issues (Yin, 2018). The six primary sources of evidence that ensure methodological rigor are documentation, archival records, interviews, direct observations, participant observation, and physical artifacts (Varela et al., 2021; Yin, 2018). The data collected for this study included multiple data sources, including six in-depth, semistructured interviews and a review of participant-provided evidentiary documentation, such as business strategies and websites.

A robust and well-documented research process is imperative to research quality. It is vital for students to comprehensively and transparently describe their research process, analysis, and conclusions to ensure study rigor (Shufutinsky, 2020). Standardizing the data collection and analysis process may enable other researchers to reveal similar information (Yin, 2018). Reliability and validity are enhanced if other researchers can replicate the study, even in theory. It is essential for students conducting

qualitative research to use multiple data sources or repeated measures of a phenomenon to establish the truth of their doctoral research study findings (Varela et al., 2021). A valid study demonstrates what truly exists and could be as simple as accurately gaining knowledge and understanding of the nature of a phenomenon (Cypress, 2017). The validity of a qualitative study's findings is related to the meticulous recording, transcription, repeated verification, and interpretation of the data (Cypress, 2017). Students are expected to maintain the highest levels of research rigor as other seasoned researchers. Therefore, students need to understand and be prepared to conduct quality research.

To ensure research rigor, students should focus on the reliability and validity of their research process and data. To increase reliability and validity within their doctoral study, students should ensure that the research question is well-defined and substantiated, the study design is appropriate for the research question, appropriate application of purposeful sampling strategies, and that multiple data sources are collected and managed systematically and accurately analyzed (Varela et al., 2021; Yin, 2018). The triangulation of multiple data sources leads to data saturation (Fusch et al., 2018) and results in the presentation of the corroborated experiences of a shared phenomenon (Denzin & Lincoln, 2018), thus enhancing reliability. Students should also ensure adequate exposure to the phenomenon to build rapport with participants to collect and deeply understand multiple perspectives and reduce potential bias (Elgabry & Camilleri, 2021). Additional techniques, such as member checking, reflection or field notes, transcription review, and peer examination of the data, help clarify researcher interpretations and add depth to the

data (Caretta & Pérez, 2019), thus enhancing data quality. Using a case study protocol and database and maintaining a chain of evidence significantly contribute to establishing reliability (Varela et al., 2021; Yin, 2018). To establish construct, internal, and external validity, Yin (2018) proposed several tactics, such as using multiple sources of evidence, pattern matching, and using theory or replication logic within case study research.

There are many techniques to the data collection process that can support research reliability and validity. Based on the recommendations by numerous authors (Caretta & Pérez, 2019; Elgabry & Camilleri, 2021; Varela et al., 2021), the following steps were followed to enhance research reliability and validity. I defined and aligned the study's research methodology to the research question and developed meticulous sampling and recruitment strategies. I built rapport and trust with participants early in recruitment to aid data collection from semistructured interviews. I followed an interview protocol (see Appendix A) to ensure consistent research practices across participants. Multiple data sources were triangulated, for example, public company information, such as corporate websites, was reviewed, and participants were asked to share archival and current documentation as evidence to support innovation performance beyond interview data. Furthermore, participants were allowed to review and comment on a written summary of my interpretations of the research data through the member-checking process.

Data Collection Technique

The data collection techniques used in this study included data collected from multiple sources, such as semistructured interviews, archival and current records, and company websites. The triangulation of multiple data sources offered more profound

insight into healthcare leaders' entrepreneurial leadership strategies to catalyze innovation performance. Furthermore, the triangulation of multiple data sources enhanced reliability and construct validity, helped mitigate bias, and supported data saturation. The member-checking process helped me as the researcher corroborate interviewer interpretations and added to research rigor.

Data Collection Process

Within research, each author may use various data collection techniques that support their unique research design and goals. DeJonckheere and Vaughn (2019) identified 11 steps in the qualitative research process necessary to successfully conduct semistructured interviews in healthcare settings. DeJonckheere and Vaughn advocated that the researcher (a) determine the purpose and scope of the study, (b) identify participants, (c) consider ethical issues, (d) plan logistical aspects, (e) develop the interview guide, (f) establish trust and rapport, (g) conduct the interview, (h) take memos and reflect, (i) analyze the data, (j) demonstrate the trustworthiness of the research, and (k) present findings in a paper or report. DeJonckheere and Vaughn’s 11-step process is robust and was followed in this doctoral study. In addition, as preliminary steps, Walden University and IRB approvals were obtained before any study conduct, and participants consented through a documented informed consent process and form. A pilot study was not intended to be conducted nor applicable to this doctoral study.

Semistructured Interviews

This doctoral study involved video and audio-recorded semistructured interviews conducted via videoconferencing software, such as Zoom or Microsoft Teams.

Semistructured in-depth interviews are commonly used within qualitative research, guided by an adaptable interview protocol, and augmented by probing and follow-up questions (DeJonckheere & Vaughn, 2019). An advantage of semistructured interviews is that they facilitate the collection of open-ended data and enable the researcher to explore participants' thoughts, feelings, and beliefs (DeJonckheere & Vaughn, 2019). Furthermore, semistructured interviews are flexible in structure, iterative, and permit advanced scheduling (DeJonckheere & Vaughn, 2019). A disadvantage of semistructured interviews is that novice researchers and those with few resources must develop a robust data collection strategy and the skills necessary to execute it effectively (DeJonckheere & Vaughn, 2019). Novice researchers must be prepared to navigate challenging interviewing situations, including disengaged or emotional participants, especially if sensitive or personal topics arise (DeJonckheere & Vaughn, 2019). As I had previous interviewing experience as a researcher, conducting semistructured interviews was an appropriate data collection technique for this study. Using a semistructured interview approach enabled the flexibility to adapt my data collection techniques to accommodate participants and ensure high quality research outcomes.

The subsequent steps were followed in conducting this study's semistructured interviews. A convenient time for the participant was set up in advance. At the beginning of the interview, a brief overview of the study was provided, consent was confirmed, and the interview format and agenda were reviewed. A friendly, nonjudgmental attitude, conversational tone, and active listening approach was adopted to mitigate any potential power differential between the researcher and participant. An interview protocol (see

Appendix A) was utilized to keep interview questions consistent and aligned with the scientific inquiry and research question. Probing and follow-up questions were used to clarify, explore, and elaborate on participants' responses. Additional notes and observations were captured using a notepad or OneNote digitally.

Member Checking

Member checking serves as an essential verification tool to support research validity. Member checking is the process the researcher undertakes to solicit feedback from the participant on the researcher's interpretation of the data and is often considered the gold standard of qualitative research (Lincoln & Guba, 1985; Motulsky, 2021). Member checking allows participants to review, expand, or comment on the researcher's interpretative summary of interview data or research results to improve accuracy and transferability and ensure alignment with their views (Brear, 2019; Busetto et al., 2020). Member checking may reveal researcher bias, errors, or misrepresentations; enable further investigation of emerging themes or interpretations; and empowers participants to shape the prioritization of issues or insights (Brear, 2019). While considered the gold standard for verifying validity and trustworthiness, researchers should consider member checking as one of many available tools, factor in participant experiences with the process, and adopt a more reflexive approach instead (Candela, 2019; Motulsky, 2021). The member checking of researcher interpretations is a vital facet of research quality for this study.

Within this doctoral study, I conducted member checking using Marshall and Rossman's (2016) approach of reviewing and interpreting interview data, synthesizing

responses for each interview question, providing participants the synthesized summaries, confirming the accuracy of my interpretations, and collecting more data until no new information was collected. Member checking was conducted via phone discussion to support the validity of this study's research. A 30-minute recorded virtual conference call was set up at the participant's convenience to review and confirm my interpretations of the data and make relevant revisions.

Documentation Review

Within this doctoral study, an assessment of archival and current records, such as presentations, reports, dashboards, and processes or procedures, provided insight for scientific inquiry. Documentation is critical for recording strategy, objective setting, progress measurement, and outcome evaluation within healthcare (Martin et al., 2020). Furthermore, good documentation practices can shape leadership decisions, though Martin et al. (2020) advised that documentation should be objective and free of implicit or explicit superfluous attitudes and biases. Archival records shed light on the historical activity of organizations, individuals, and events and can be used to establish an evidentiary foundation. Documentation review was essential for triangulating multiple data sources to reach data saturation.

Through the recruitment process, I asked business leaders to consent to participate in the study and provide relevant source data that may contribute toward addressing the research question. Documentation was reviewed and analyzed for how leaders successfully used entrepreneurial leadership strategies to catalyze innovation performance. Including documentation review in the data collection and analysis process

offered a historical and prospective outlook into how leaders set strategy and objectives, evaluate and measure progress and outcomes, and capture lessons learned that shape future direction. Additionally, through documentation review, I corroborated interviewee responses to establish truth in the data set or raised questions that may have required further substantiation. Disadvantages of documentation review included the volume, confidential nature, and lack of context inherent in the records. Moreover, static documents served as snapshots that created gaps in the overall picture and required onerous and in-depth exploration. Requests for supporting documentation may have posed a challenge if leaders did not have easy access to documents or were reluctant to provide them due to the sensitivity of the information.

Company Websites

Company websites contain a wealth of information and can be a beneficial source of data to support this doctoral study. Company websites are used to disseminate information to various stakeholders, such as healthcare workers, patients, shareholders, and the community. An advantage to including company website data is that global public information on corporate vision, mission, values, culture, history, innovation programs, and financial performance can be collected across the pharmaceutical, medical device, and consumer healthcare sectors. Furthermore, public data can be analyzed and benchmarked against industry, sector, and other healthcare organizational data.

Company websites for each participant in the study were reviewed, and information pertinent to organizational entrepreneurship and innovation was assessed for inclusion in data analysis. The sheer volume of information and ease of navigation of

company websites could have posed a disadvantage as it may have required substantial time and participant guidance to assess relevance to the study. Another disadvantage was that company website information is public and, although trustworthy, needs to be corroborated to generate reliable and valid insights and conclusions. Like internal documentation review, company website information was essential to triangulating multiple data sources to reach data saturation.

Data Organization Technique

Suitable data organization techniques can support the efficient and effective collection of data. Yin (2018) proposed six sources of case study evidence: documents, archival records, interviews, direct observations, participant observation, and physical artifacts. Furthermore, Yin advocated four prevailing principles essential to data collection: using multiple data sources, creating a case study database, maintaining a chain of evidence, and exercising care with social media or other electronic sources of evidence. Therefore, suitable data organization techniques are critical to high quality case study research and one of the first steps in qualitative analysis (Yin, 2018). Effective data organization techniques contributed to the reliability and validity of the research study.

Interviews are one of the most valuable sources of case study evidence. Audio recordings of interviews provide a more accurate representation of the interview versus taking notes (Gray et al., 2020). Accordingly, interviews within this doctoral study were conducted and recorded using Zoom or Microsoft Teams conferencing tools. Zoom and Microsoft Teams safely captured and secured interviews and supported the automatic transcription of interview recordings, making it a valuable tool for systematically

organizing interview data. Furthermore, digital memos, logs, and reflective journals were created to facilitate study conduct. I used Microsoft OneNote to track scheduled interviews and capture additional interviewer questions, annotations, and meaningful interpretations for data analysis, my synthesis of individual interviews, and personal reflections on the research process to support real-time modifications. As outlined in the interview protocol and informed consent form, participants were asked to consent to the recording and secure storing of interview data and other documents, such as digital notes.

Research databases are an essential tool for efficiently collecting and managing data. Organizing and documenting the data collected in a comprehensive database is a fundamental principle of case study research and may be subject to secondary analysis (Yin, 2018). The database within this doctoral study contained the full array of compiled data, kept separate, and maintained in a well-organized and retrievable form. The data retention protocol used in this study is to securely store all research documentation for at least 5 years. Thus, electronic data, such as interview recordings, digital notes, and the research database, is preserved in an orderly filing system using structured nomenclature, stored in personal, restricted, and dedicated OneDrive folders, backed up and password-protected on a flash drive, and secured safely for 5 years.

Data Analysis

This doctoral study involved the triangulation of multiple data sources to mitigate bias, enhance reliability and construct validity, and reach data saturation. Fusch et al. (2018) emphasized the importance of triangulation to support research reliability and validity, enabling a researcher to saturate the data. As initially conceived by Denzin in

1970 and 1978, there are four types of triangulation: data, investigator, theory, and methodological (Denzin & Lincoln, 2018; Fusch et al., 2018). Methodological triangulation involves using multiple methods to obtain a more comprehensive and in-depth understanding of the phenomenon (Abdalla et al., 2018; Fusch et al., 2018). Thus, I used methodological triangulation by collecting data using multiple data collection methods, such as semistructured interviews, and review of organizational business strategies and websites. The interpretation process occurred as the data was collected from multiple sources.

Researchers widely use thematic analysis to analyze qualitative data. The thematic analysis process involves theme generation and coding and is a widely recognized case study data analysis method. The first step is the transcription of audio interview recordings and then cross-checking transcripts with researcher field notes (Rashid et al., 2019). The interviewee's transcription verification or member checking is conducted for accuracy (Yin, 2018). Once the transcripts are verified as representative, the transcribed narratives are coded, and concepts are developed (Deterding & Waters, 2021). Concepts are then combined into categories based on collected evidence sources (Rashid et al., 2019). The thematic analysis processes proposed by numerous authors (Deterding & Waters, 2021; Rashid et al., 2019) are robust approaches suitable for interpreting this doctoral study’s qualitative data. I started data analysis by generating transcripts of the audio-recorded interviews. In addition, interview data were synthesized, and researcher interpretations were verified through member checking. Subsequently, I coded the narratives and formed concepts and themes that addressed the research

question. Using methodological triangulation with thematic analysis helped thoroughly evaluate the study data and address the research question.

Following a systematic methodology, such as thematic analysis, adds transparency to the data analysis process and can enhance research quality. A four-step approach: prepare, exploration, specification, and integration (PESI), can be used for data interpretation (Rashid et al., 2019). First, the researcher familiarizes themselves with the evidence and carefully organizes, sorts, and builds an interpretation frame (Rashid et al., 2019). This data processing step includes indexing the interview transcripts, checking field notes, organizing and examining documents, and consulting the literature review (Rashid et al., 2019). Second, initial or key codes are developed and transformed into concepts (Rashid et al., 2019). Third, associations between concepts are amalgamated into categories or themes based on discernible patterns, the conceptual framework under evaluation, and an understanding of contemporary literature (Rashid et al., 2019). Fourth, cross-case patterns are identified and interpreted between cases (Rashid et al., 2019). The PESI approach is a robust methodology and was used for data interpretation within this doctoral study.

Computer-assisted qualitative data analysis (CAQDAS) tools, such as NVivo, can simplify data analysis. Case study data can be analyzed in various ways, including examining, categorizing, tabulating, testing, or recombining evidence (Yin, 2018). While CAQDAS tools may facilitate data analysis, researchers still need an analytic strategy to define relevant codes and interpret observed patterns (Denzin & Lincoln, 2018; Yin, 2018). Yin (2018) suggested using the following five techniques for analyzing case

studies: pattern matching, explanation building, time-series analysis, logic models, and cross-case synthesis. NVivo was the CAQDAS tool used in this doctoral study to store, organize, analyze, and represent qualitative data. NVivo software helps in the thematic analysis of the data, explicitly transcribing interviews; constructing code, themes, and categories; and may be used in data analysis to understand the research inquiry better (Alam, 2021; Deterding & Waters, 2021). NVivo offers greater flexibility in the categorization of large amounts of rich text, improves the quality of results, reduces time and effort in data analysis, aids in the identification of trends and themes through the cross-examination of information, and supports data visualization for an adequate representation of relationships between concepts (Alam, 2021). Furthermore, NVivo supports the trustworthiness and transparency of the data analysis process (O'Kane et al., 2021). Finally, key themes derived in this study were correlated to the literature on leadership, entrepreneurship, innovation management, and the conceptual framework of entrepreneurial leadership. A review of new studies within the body of knowledge discovered since the time of proposal writing and germane to addressing the research question was added to the final doctoral study. As the doctoral study researcher, I trained on NVivo before data analysis to ensure an adequate examination, categorization, tabulation, recombination, and presentation of the evidence to support addressing the research question. A thorough analysis and correlation of study findings to contemporary research supported an in-depth scientific inquiry and satisfied the goal of this study.

Reliability and Validity

The concepts of reliability and validity are fundamental tenets of all research and are essential for establishing the trustworthiness of qualitative research (Rose & Johnson, 2020). Reliability and validity cannot be declared based on the study's conclusions; they must be built into the research process (Chowdhury & Shil, 2021). Furthermore, the verification process is a continuous assessment of validity and reliability throughout all research phases (N. Singh et al., 2021). A common criticism of case study research is low validity and reliability; however, this can be mitigated by adopting a theoretical stance (Quintão et al., 2020). Yin (2018) affirmed that high quality case study research must have construct validity, internal validity, external validity, and reliability. Though, dependability, credibility, transferability, and confirmability replace the commonly accepted criteria of reliability and internal and external validity (FitzPatrick, 2019). The relevancy and application of the contemporary research lexicon are further elaborated in the following sections on reliability and validity.

Reliability

The concept of reliability in qualitative research is problematic because reliability is assumed to be demonstrated when repeated measures of a phenomenon produce the same results using objective methods (Rose & Johnson, 2020). Reliability is often synonymously likened to replicability, repeatability, and stability (Cypress, 2017). However, these views take a positivist or postpositivist lens often applied in quantitative research, while qualitative research is based on a constructivist paradigm that is better suited for naturalistic inquiry (Rose & Johnson, 2020). Thus, reliability within qualitative

research should focus on the consistency of transparent research practices, analysis, and conclusions that factor in the limitations of the research (Quintão et al., 2020). The ultimate goal is to minimize research errors and biases to strengthen reliability.

Dependability

Dependability is associated with reliability as it comprises steps necessary to improve the consistency of methods and processes during data collection and analysis (N. Singh et al., 2021). Written procedures or an audit trail enhance dependability (N. Singh et al., 2021). This study incorporated a research protocol and case database. A protocol establishes the research practices, while the case database contains the collected data (Quintão et al., 2020). Several techniques may be used to enhance the reliability and dependability of the study cases, such as recording the interviews, coding the responses, member checking, and using analytical data analysis methods (Quintão et al., 2020). Furthermore, analytical rigor can be enhanced by training qualitative researchers conducting the interviews and coding the data (N. Singh et al., 2021). To ensure the reliability of the study data, I, as this study's sole researcher, have completed the CITI Program (Record ID 42431199) and NVIVO training courses.

Furthermore, a trail of emergent research steps, theme identification, analysis, and memos were kept, authenticating the decisions, methods, and analysis presented in the study. Lastly, I conducted member checking using Marshall and Rossman's (2016) approach of reviewing and interpreting interview data, synthesizing responses for each interview question, providing participants the synthesized summaries, confirming the accuracy of my interpretations, and collecting more data until no new information is

collected. Member checking was used to achieve methodological rigor and reliability based on a mutual analytical understanding between participants and myself as the study researcher.

Validity

The reliability of the data collected contributes toward internal validity, whereas external validity is concerned with the generalizability of the data across persons, settings, and times (Chowdhury & Shil, 2021). In the case of study research, validity can be difficult to establish; however, triangulation can resolve challenges, especially *within the method* triangulation that can increase researcher confidence (Chowdhury & Shil, 2021; Rose & Johnson, 2020). The critical aspect of internal validity is to ensure that the researcher can construct a plausible causal argument that supports the results (Quintão et al., 2020). On the contrary, external validity depends on the research protocol and defined cases and is more concerned with analytical generalization over statistical generalization (Quintão et al., 2020). To ensure external validity, case study selection should be justified, case study contexts presented, and patterns identified that allow readers to generalize the results (Quintão et al., 2020). In the following sections, validity is presented as credibility, transferability, and confirmability to align with commonly used terms in qualitative research. In addition, the effect of data saturation on research rigor is described.

Credibility

Credibility is associated with internal validity and refers to the extent to which the research findings are believable or probable (N. Singh et al., 2021). Verification

strategies include the appropriateness of the research methods; prolonged participant engagement; member checking; peer scrutiny; source, method, and investigator triangulation; reflective commentary; and deviant case analysis (N. Singh et al., 2021). To enhance credibility, this study comprised a research protocol with appropriate research methods, allowed participants to review interview transcripts to verify the adequacy and accuracy of responses and their applied meaning or interpretations, and triangulated data methods. Interviewee transcript review allows the researcher to share and check the accuracy of interview transcripts with participants and ensure they are representative of their experience (Rowlands, 2021). Alternatively, member checking is a distinct process the researcher undertakes to solicit feedback from the participant on the researcher's interpretation of the data and is often considered the gold standard of qualitative research (Lincoln & Guba, 1985; Motulsky, 2021). Member checking is the most significant contributor to credibility as it allows researchers and participants to recapitulate, refine, review, and expound on the findings during data analysis (DeCino & Waalkes, 2019). Furthermore, member checking contributes toward data saturation and the fidelity of the data and analysis.

Transferability

Transferability is associated with external validity and refers to the generalizability of the findings (Langtree et al., 2019). In qualitative research, a researcher enhances the degree to which results are transferable to other contexts or settings through thick or dense background descriptions (N. Singh et al., 2021). This study comprised thick descriptions of participants, the research process, and any contexts

of behaviors and experiences that may be meaningful to others. Thick descriptions enable the reader to make transferability judgments that apply to their circumstances (Langtree et al., 2019). Several other techniques may enhance transferability, such as triangulation of sites or contexts and nominated, purposive, or theoretical sampling (N. Singh et al., 2021). Triangulation and purposive sampling were used in this study.

Confirmability

Confirmability is concerned with establishing that the data and the researcher's interpretations of the findings result from the data and are verifiable by other researchers (Moorley & Cathala, 2019). Confirmability is similar to objectivity or neutrality in quantitative research and is used to corroborate that the findings are unyielding to the researcher's characteristics, biases, or assumptions (Moorley & Cathala, 2019). Like dependability, an audit trail can enhance confirmability. This study contained a complete set of notes on decisions, reflections, sampling, the emergence of the findings, and information about data management. Practicing self-reflexivity, managing positionality, and minimizing research biases strengthened the credibility and confirmability of the study.

Data Saturation

Data saturation is the most commonly used method to increase research rigor and judge data adequacy for a purposive sample (Hennink et al., 2019; Morse, 1995). When using a structured approach, such as semistructured interviews, data is analyzed at the end of the data collection phase; therefore, an adequate sample is needed to ensure data saturation is reached and data can be replicated (Gill, 2020). Beyond replication, data

saturation helps establish connections between similar concepts and processes across various situations, experiences, contexts, and events, thus developing congruence with the data set at a conceptual level (Denzin & Lincoln, 2018). At some point within the data collection process, no new information is presented, issues begin to be repeated, and any further data collection becomes redundant (Hennink et al., 2019). This study included a similar method used by Hennink et al. (2019), in that code saturation and meaning saturation were evaluated. Code saturation was achieved when no new information was presented, and the codebook was stabilized. While meaning saturation was achieved when I, as the researcher, fully understood the data and no further insights or nuances were realized. Evaluating code and meaning saturation led to this study's breadth and depth of high quality data.

Transition and Summary

Some healthcare business leaders lack entrepreneurial leadership strategies to catalyze innovation performance. Therefore, the purpose of this qualitative multi-case study was to explore entrepreneurial leadership strategies that some healthcare business leaders working in the pharmaceutical, medical device, and consumer healthcare sectors in North America and Western Europe used to catalyze innovation performance. As the primary data collection instrument, I defined the case or cases; developed a theoretical perspective aligned with my research design; and identified, collected, and triangulated multiple data sources to address the research question comprehensively and enhance credibility, transferability, and confirmability. A limited relationship existed between me and the topic and me and the participants based on work experience in innovation and

networking exposure. Research ethics training was completed to ensure that I conducted research in alignment with tenets of the Belmont report and that a robust informed consent process was applied to protect participants.

A qualitative multi-case study approach was selected to explore specific cases, and purposive sampling was used to recruit participants who had successfully implemented entrepreneurial leadership strategies to catalyze innovation. I used a case study protocol comprising an overview of the case study, data collection procedures, and protocol questions to minimize researcher bias and ensure consistency across the research process. The methodological triangulation of multiple data sources; such as semistructured interviews, organizational business strategies and websites; was performed to mitigate bias, enhance reliability and construct validity, and reach data saturation. I conducted thematic analysis, including providing opportunities for transcript review and member checking, and correlated key themes with contemporary literature from the time of proposal writing.

Section 3 comprises the presentation of the doctoral study findings, any application to professional practice and social change, and recommendations for action and further research. The doctoral study concludes with prominent take-home messages regarding the value of the research.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this qualitative multi-case study was to explore entrepreneurial leadership strategies that some healthcare business leaders working in the pharmaceutical, medical device, and consumer healthcare sectors in North America and Western Europe used to catalyze innovation performance. Data were collected from six participants using semistructured interviews and a review of organizational strategy documents and websites to achieve methodological data triangulation, with no new information emerging to reach data saturation. Six key themes relevant to healthcare innovation emerged from the data: innovation management, innovation strategy, innovation performance, innovation leadership, innovation and change, and innovation orientation. From the six themes, eight subthemes emerged relevant to healthcare business leaders' entrepreneurial leadership strategies to catalyze innovation performance.

Presentation of the Findings

The overarching research question for this doctoral study was the following: What entrepreneurial leadership strategies do some healthcare business leaders use to catalyze innovation performance? Semistructured interviews of six business leaders were performed, and upon data saturation, a thematic analysis was conducted that resulted in six themes and eight subthemes (see Table 1). The review of organizational strategy documents and websites corroborated the emergent themes from interview data. The presentation of the findings section was structured by theme, including subtheme context,

and discretely tied to the entrepreneurial leadership conceptual framework and contemporary literature.

Table 1

Key Innovation Themes, Subthemes, and Frequencies

Theme	Subtheme	Frequency	Percentage
Innovation management	Innovation process Idea management Customer orientation	348	29
Innovation strategy	Business strategy Strategic analysis Project & risk management	247	21
Innovation performance		199	17
Innovation leadership	Leadership proficiency Leadership style	164	14
Innovation and change		144	12
Innovation orientation		83	7
Total		1,185	100

Theme 1: Innovation Management

Entrepreneurial leadership and innovation management play instrumental roles in healthcare innovation. Effective innovation management fosters an innovative culture and processes that generate new business value. P6 urged entrepreneurial leaders to work with an appropriate sense of urgency:

> The longer it takes to develop a product and get it in front of patients and consumers, the higher the markets' expectations are because we're all innovating and trying to move forward in these key areas of health and innovation. And so, if

> it takes you too long, or you don't start, and ignore a differentiated position, by the time you get to market, you may not be meeting a consumer or patient need.

An entrepreneurial leader's role is to establish effective innovation management processes, innovative behavior, and an entrepreneurial climate conducive to the rapid development and implementation of innovative solutions. For example, based on Company 4's website, the organization used its breadth, scale, and experience to reimagine the way healthcare is delivered and help people live longer healthier lives. The research findings on innovation management confirm Kremer et al.'s and Machon et al.'s (see Kremer et al., 2019; Machon et al., 2019) position that leaders who can successfully shape an entrepreneurial climate, embed effective innovation management practices, and promote creative and collaborative partnerships could positively affect healthcare innovation. Healthcare leaders must innovate with speed and agility to create new business value, build dynamic capabilities and partnerships, and deliver healthcare solutions within a competitive healthcare environment. Innovation management is a fundamental aspect of innovation performance and was discussed using three key subthemes: innovation process ($f = 229$), idea management ($f = 68$), and customer orientation ($f = 51$).

Innovation Process

Emerging from the data was a consensus that no one-size-fits-all innovation models exist. Instead, innovation initiatives are case-dependent, and the strategic innovation framework used should be balanced between a structured and flexible approach. Across innovation's early, mid, and late stages, entrepreneurial leadership

activities (see Table 2) are essential to successfully guide employees through innovation development and value delivery.

Table 2

Innovation Process Codes and Frequencies

Code	Frequency	Subtheme percentage
Analysis & reflection	42	12
Innovation processes	40	11
Asking critical questions	18	5
Experimental design	18	5
Impact analysis	18	5
Implementation challenges	17	5
Continuous improvement	16	5
Business case	14	4
Project scaling	13	4
Novel approach	12	3
Innovation importance	10	3
Design thinking	8	2
Feasibility	3	1
Total	229	66

A key concern of study participants was keeping pace with rapidly evolving customer and market needs. All six business leaders confirmed that acting with speed and agility is essential. P1 noted that making innovative solutions “as real as possible, as fast as possible” was crucial to healthcare innovation success. The overarching objective of innovation, as proposed by P2, is to create, develop, and deliver “the right solution, designed and implemented the right way, to create maximum value for patients, for sites, for ourselves.” Ideating, experimenting, and developing innovation solutions with speed and agility confirms Prince et al.’s (2021) conceptualization of entrepreneurship as the development and validation of ideas, recognition, and creation of opportunities that

generate value. Leaders who begin with the right analytical processes and act quickly may help their business keep pace with the rapidly evolving market and consumer needs and create value for customers sooner. While speed and agility are essential to innovation, designing the right solution takes a fundamental understanding of the problem or opportunity.

Delivering value begins with defining the problem through analytical exercises that generate a comprehensive set of assumptions, hypotheses, critical questions, knowledge gaps, and needs that inform the experimental design and eventual project business case. Within P2's strategy documentation, the evaluation of ideas was noted as a critical first step leading to qualitative opportunity assessment and a business case. Design thinking methodology was advocated, by P4 and P5, as a practical approach to empathize, define, ideate, prototype, test, and implement innovative projects. P5 stressed the criticality of analysis and reflection across the innovation lifecycle. While defining the business problem upfront and conducting postmortem lessons learned was commonly practiced, according to P5, spending more time in early-stage "premortem analysis" to calibrate to evolving market and customer needs and reflect on innovation performance more frequently to proactively and strategically pivot was needed. Robust early-stage innovation management processes, such as adequately defining the problem or opportunity, may facilitate or hinder innovation performance. Innovation success also hinges on developing and implementing innovative solutions, not just generating ideas.

While many employees enjoy the ideation phase of innovative projects, study participants emphasized the dire need to deliver solutions. As noted on their website, Company 5 delivers life-enhancing, first-to-market innovation by combining the power of science with meaningful human insights and digital-first thinking. According to P1,

> very few people come to entrepreneurial roles that are hardcore deliverers that don't like to cultivate, so usually, that's not the issue. On the other side, you have people who continually want to innovate and don't know when to stop.

The inability to effectively charter projects and shepherd employees through the innovation management process can lead to a perpetual state of creation at the sacrifice of delivering value. Innovation cannot be forced but must come from creative, analytical, and transparent processes.

Candid and transparent communication is the backbone of effective decision-making and vital to the success of rapid innovation projects. P3 cautioned business leaders not to “force-fit” or “wedge-in” solutions from the “inside-out,” urging them instead to be courageous in saying that the “solution sucks, it’s never going to work,” appreciate feedback offered, and “work like hell to change it.” Effective communication and strategy reanalysis is key to innovation performance. P5 often requested employees to escalate development and implementation issues expeditiously if they were “banging their head against the wall for longer than the week.” Furthermore, P5 found that “almost all the people were scared to say I couldn't get this done; when it was nothing to do with their fault, or their abilities, or the competencies, whatsoever.” Fear of failure may hamper innovation progress, emphasizing the importance for employees to raise concerns

and leaders to build a culture where failure is acceptable. Innovation performance begins with engaging employees in the transparent cultivation and management of ideas.

Idea Management

Adopting a practical approach to cultivating ideas may foster an entrepreneurial or innovative climate, increase employee engagement, and enhance innovation performance. Emerging from the data was significance surrounding efficient idea management practices, especially for problem-solving and recognizing and exploiting opportunities (see Table 3).

Table 3

Idea Management Codes and Frequencies

Code	Frequency	Subtheme percentage
Opportunity recognition	24	7
Problem-solving	23	7
Idea management	21	6
Total	68	20

Idea management is a vital step in producing value through the innovation process. Within the strategy documentation provided by P2, idea profiles were noted as the basis for effective decision-making, and it was indicated that opportunity assessment requires a high-level of collaboration between idea owners and other business partners. According to P3, holding ideation sessions using whiteboards helped facilitate "provocative conversations," scenario planning, and the formation of strategic roadmaps. Entrepreneurial leaders who effectively led idea management practices enabled employees to identify, raise, critically challenge, and backlog ideas. Leaders who exhibit

entrepreneurial leadership principles and behaviors tend to encourage employees toward new idea creation while fostering an innovative culture (Bagheri, 2017). P1 found that constructing “killer questions” during early-stage innovation allowed leaders to differentiate between critical and trivial insights that would potentially solve the business problem or opportunity. P1’s strategy documentation included tools to facilitate the idea management process, encourage innovation teams to ask the right questions at the right time, and help structure and challenge their thinking to aid decision-making and communication. Having well-defined processes for managing how ideas are generated, prioritized, and backlogged can support progress during later innovation stages. A crucial element of idea management is the inclusion of ideas from various stakeholders, such as internal business leaders, external partners, and customers.

The collection of ideas from and involvement of diverse thought leadership was deemed an essential element of idea generation. As described by P1 and P2, thought leadership often came from senior leadership advisory within innovation or risk-assessment councils. Consulting senior leadership, for example, through quarterly planning sessions or stage gates, also ensured that innovation team outputs linked to the overarching organizational strategy. Beyond the innovation project team or senior leadership advisory, P6 found that crowdsourcing ideas and implementing innovation challenges were valuable means to increase the breadth and depth of idea management. Upon review of various crowdsourcing platforms (websites), organizations 1 and 7 published innovation challenges that allowed innovators to submit ideas through an idea portal that led to partnerships and funding to bring to market products that will improve

people's lives. Company 1's innovation performance document verified that 78 challenges were launched, and $13.3M+ in grant funding was offered to innovators. Crowdsourcing ideas and innovation challenges established connections between innovators with potential solutions to unmet needs and helped advance scientific breakthroughs in healthcare. Developing an innovation strategy and customer-oriented processes, such as crowdsourcing, is vital to innovation performance.

Customer Orientation

Customer centricity (f = 27) and user experience (f = 24) are critical components in any organizational strategy delivering business and customer value. Company 3's strategic focus, as noted in P1's strategy documentation, was aspiring to deliver more ambitious patient-centric innovation to create value and win in a rapidly evolving market. For P2, exposing and calibrating the innovation portfolio every 6 to 12 months with internal and external audiences and environments is critical to ensuring a balanced portfolio. P2 suggested that internal audiences look for connections to the broader portfolio, question the strategic focus and space appropriateness, and assess if their problems would be solved. Furthermore, P2 indicated that external audiences gauge whether the company is "working on yesteryear stuff" and how congruent it is with evolving market and customer needs. Thus, P3 advised that entrepreneurial leaders be "hyper-connected to the customer" and develop the ability to "really dig into and understand what it is they value, and what are the problems they're looking to solve." Being hyper-focused on the customer to deliver value extends F. Li et al.'s (2021) finding that an employee customer-orientation mediates the effect leadership has on employee

behavior. Leaders influencing an employee's customer service orientation may positively influence innovation performance and deliver enhanced customer value.

Understanding evolving customer needs and engaging customers through the innovation lifecycle may enhance innovation performance. P3 believed that a central focus of an entrepreneurial leadership strategy should be “what’s in it for me [customer]?” and “how is this [innovation] landing with the customer?” Thus, the customer's voice is critical in informing innovation strategies. However, P3 highlighted that it is not always what the customer is saying; “it’s what they’re not saying, it’s what’s missing in the process, they didn’t tell us.” P3 suggested that entrepreneurial leaders keep their finger on the pulse and listen to and stay connected with the “undercurrent feedback along the [innovation management] process.” As suggested by P5, having a customer orientation embedded in the innovation management process helps to ensure that “the purpose of the innovation remains at the forefront and is designed and produced in a way that will be innovative and useful to someone in the marketplace.” Producing an innovative healthcare solution that customers do not use fails to generate value and wastes precious organizational resources. Thus, involving the patient or customer throughout the innovation lifecycle is essential for developing the right solution for the right person at the right time.

Ties to Contemporary Literature

Innovation management is essential for conceptualizing, developing, diffusing, and adopting innovative solutions. A systematic, planned, and controlled innovation management process can help healthcare business leaders materialize ideas into

innovation (Sharma et al., 2022). Furthermore, embracing agile philosophies and techniques can support leaders' ability to be adaptive, be flexible, and rapidly act to respond to external market, economic, and social risks (Sharma et al., 2022). The findings of the doctoral study on innovation management were consistent with Sharma et al.'s study (see Sharma et al., 2022), which indicated that organizations would benefit from structured but flexible innovation management processes that enable rapid development and implementation of innovative ideas. The implementation of innovation projects was a common subject amongst participants and included as a critical aspect within participants' innovation strategy documents. Business leaders often used an experimental design in their innovation initiatives, which was consistent with van Beest et al.'s findings (see van Beest et al., 2022) that health innovations are successfully implemented when the potential solution is explored in real life. For example, through prototyping, knowledge gained through the process aids in the constant adaptation of the potential solution, and changes are made for the solution to be adopted. Effectively chartering innovation projects through an innovation management process may catalyze innovation performance. The study findings substantiate Bocken and Geradts's (2020) notion that leaders need to understand how to manage and sustain innovation and how it transcends all aspects of the organization: strategy, structure, processes, incentives, and people. Innovation management begins with idea generation facilitated through structured processes and is boosted by innovative approaches, such as crowdsourcing.

Another finding of the doctoral study was the advantage of using crowdsourcing ideas to drive innovation. The doctoral study findings on crowdsourcing confirmed Sarić

et al.'s (2022) notion that crowdsourcing fueled the involvement of key stakeholders within the innovation process to better design and develop products and services that met their needs. Doctoral study participants spoke to the criticality of involving customers throughout the innovation lifecycle, from concept through implementation. Furthermore, a customer orientation was deemed impactful to innovation performance. Liu et al. (2022) found that a customer orientation can promote incremental innovation, though an effect on radical innovation was unclear. Getting too close to the customer may influence radical innovation and limit organizations to incremental innovation (Liu et al., 2022). Contrary to Liu et al.'s view, participants in the doctoral study were able to implement transformative, innovative solutions based on a deep relationship with customers and a fundamental understanding of their needs. The study findings fortify Kremer et al.'s (2019) position that innovation leaders should develop appropriate group norms, design teams strategically, manage external stakeholder interactions, show leadership support, display organizational support, and effectively use performance management. Business leaders must develop suitable relationships with stakeholders given the strategic intent, context, and needs of the innovative solution and end users. An innovation management framework that clearly defines how ideas are amassed and transformed into viable solutions tied to customer needs may enhance innovation performance.

Association With the Conceptual Framework

The conceptual framework of this doctoral study was entrepreneurial leadership. Innovation is critical to organizational competitiveness and survival, underlying the importance of effective innovation management processes. A leader's role is to foster an

innovative climate, motivate innovative work behavior, and embed organizational processes that exploit entrepreneurial opportunities. Entrepreneurial leaders have distinct qualities and a prominent role that enable them to shape conditions that influence innovation management, such as identifying new trends, reducing uncertainty and complexity, and developing creative talent (Cucino et al., 2021). Entrepreneurial leadership was found to significantly influence employees' innovative work behavior and foster an innovative culture and climate in which employees can confidently explore, share, and apply ideas and concepts (Malibari & Bajaba, 2022). Furthermore, entrepreneurial leaders influencing innovative work behavior can shape a customer orientation that better serves evolving customer demands, increases customer satisfaction and loyalty, and improves company performance (Hoang et al., 2022; Karatepe et al., 2020). Business leaders who effectively apply entrepreneurial leadership strategies can profoundly affect innovation management processes and talent that lead to positive organizational outcomes. Improved organizational performance positions companies to be more competitive and contribute more toward the innovation ecosystem. Thus, innovation management, specifically the innovation process, idea management, and customer orientation themes, are influenced by entrepreneurial leadership and tie into the conceptual framework.

Theme 2: Innovation Strategy

Innovation strategy is vital to business leaders as a strategic tool to assess the healthcare landscape, set goals and objectives, evaluate performance, make informed decisions to stay the course or pivot, and navigate a complex healthcare environment. In

Company 2's strategy document, P4 ensured that the strategic plan contained an innovation roadmap that delineated a clear path to achieve value-add outcomes by bringing the organization the best-in-class capabilities. Additionally, as stated on Company 2's website, the organization's strategic intent was to couple its strong internal capabilities with the most compelling external science to transform how diseases are thought of being treated, cured, prevented, and intercepted in the future. This study's findings on innovation strategy supported Benevolo et al.'s (see Benevolo et al., 2020) research on how strategic frameworks can support global strategy creation, especially in entrepreneurial firms seeking to exploit global opportunities. Furthermore, the research findings confirmed Bagheri et al.'s (see Bagheri et al., 2022) assertion that entrepreneurial leadership positively affected innovative employee behavior and could contribute to organizational innovation strategies, activities, and performance. Entrepreneurial leaders can align the organizational strategy, business environment, and resources to successfully execute innovation initiatives while promoting strategic entrepreneurship and employee innovativeness. Innovation strategy is a vital component of healthcare innovation and a key driver of innovation performance and was discussed using three key subthemes: business strategy (f = 116), strategic analysis (f = 96), and project and risk management (f = 35).

Business Strategy

Innovation strategy is a significant component of business strategy. At the core of an entrepreneurial and innovative healthcare organization is "the pursuit of the highest value opportunities to address unmet needs using best-in-class solutions," as expressed

within P2's organizational strategy documentation. Furthermore, P4's ambition was to "bring best practices, capture feedback, and create an environment for continual growth in the [healthcare innovation] space." A common objective between healthcare business leaders is their goal to define opportunities, foster internal and external business partnerships, understand the market and consumer trends and unmet needs, and assess the competitive landscape to bring cutting-edge innovation to patients and customers. Emerging from the study data were seven fundamental factors that influence a business innovation strategy (see Table 4).

Table 4

Business Strategy Codes and Frequencies

Code	Frequency	Subtheme percentage
Strategic focus	38	15
Unmet need	18	7
Strategic road map	16	6
Strategic framework	15	6
Organizational growth	15	6
Competitive advantage	10	4
Strategy	4	2
Total	116	47

For many entrepreneurial leaders, confusion arises regarding the best innovation approach. P1 inferred that there is no best innovation strategy, model, or process, as they "all follow a similar road map: uncover unmet needs; evaluate against current strategy, technology, and capabilities; risk reduction; business case, and so forth." Furthermore, P1 advised picking a suitable fit-for-purpose model and getting the entire stakeholder set aligned to follow that specific process. According to P3, to catalyze innovation

performance, entrepreneurial leaders must “acknowledge and accept where they are, yet not allow themselves to get comfortable and stay in the space but think beyond.” P3 insinuated that avoiding complacency is “what separates those companies that are going to take us into the future.” To deliver healthcare innovation, leaders must have a fundamental understanding of the innovation management process but not be too restrictive on the exact model they use, as a rapidly evolving environment compels constant reanalysis and strategic pivoting. To catalyze innovation performance, innovation strategies should delineate the chosen process while innovation leaders seek business partner alignment on the strategic approach to solving the business problem or opportunity and delivering unmet needs.

A leader’s ability is indispensable to innovation strategy formation and implementation. To succeed, entrepreneurial leaders must be technical, conceptual, interpersonal, and entrepreneurial (Harrison et al., 2018). P4 confirmed Harrison et al.’s (see Harrison et al., 2018) sentiments on leadership competencies. According to P4, entrepreneurial leaders who are strategic visionaries, lead by example, and are apt at influencing others, can quickly build confidence and trust in the innovation strategy to get key stakeholders on board. Furthermore, P4 leans toward differentiation strategies that shake-up the status quo, improve poor or subpar performance, or target areas where people have business problems to solve yet act risk averse. Similarly, P5 sought out “new growth opportunities that are outside traditional need states by thinking critically and examining internal and external innovation drivers, such as consumer, market, and technical feasibility perspectives.” Even empowered with entrepreneurial leadership

strategies, P5 conceded that “getting the organization to buy into working differently from an entrepreneurship or an innovation perspective is hard.” Consequently, P5 attested that influencing key business partners to do things differently with “high levels of risk, high levels of uncertainty, and a high potential for failure is hard.” An effective business strategy is only as good as the leader’s ability to influence others to follow. Strategically communicating strategy in terms of consumer and market direction, competitive positioning, and organizational growth potential may sway decision-makers to invest in innovation. While influence is critical for strategy adoption, a business strategy must be founded on solid strategic analysis.

Strategic Analysis

The external marketplace and consumer needs are constantly evolving, and healthcare is becoming more complex and competitive, underscoring the need to innovate unrelentingly. Where one-off innovation may transform a start-up into a multimillion-dollar business based on a single idea, it often does not work for large multinational firms with extensive portfolios of products or solutions. P2 advocated the following:

> A need for continuous input from several sources on where we can make inroads doing things differently, take advantage of opportunities we find elsewhere that we want to internalize, and find transformative solutions to sticky business problems. Problems that don't resolve through a continuous improvement or iterative approach but may benefit from radical change.

Thus, strategic analysis by entrepreneurial leaders is an essential aspect of innovation management and requires an in-depth understanding of the internal and external business

environment; the organization's design, including capabilities, competencies, and technologies; and areas of opportunity for transformative growth. This study's findings on strategic analysis extend Altahat and Alsafadi's (see Altahat & Alsafadi, 2021) view that an entrepreneurial mindset and creativity are required to create strategies that promote corporate entrepreneurship. Strategic analysis is fundamental to creating innovative strategies that entrepreneurial leaders use to deliver healthcare solutions. Table 5 contains the underlying factors that emerged from the data surrounding strategic analysis.

Table 5

Strategic Analysis Codes and Frequencies

Code	Frequency	Subtheme percentage
External analysis	27	11
Leveraging technology	21	9
Organizational design	16	6
Complex environment	14	6
Breakthrough/disruptive innovation	10	4
Business transformation	8	3
Total	96	39

The healthcare environment is very complex and, by its very nature, poses challenges for disruptive or radical innovation. P4 described the healthcare environment as heavily regulated, quality-focused, and process driven, in which entrepreneurial strategies may carry substantial risk and mistakes could have a significant effect on the well-being of others. Over the next 3 years, P3 anticipates an increased number of hospital mergers, closing of medical practices, and increased patient care demands, and is not sure Company 4 is "set up to meet or exceed the patient experience necessary to get

us where we need to go and allow for products being created or innovated to meet that end user where they are." Nevertheless, P3 believed there still exists an opportunity to disrupt and innovate:

> Against significant headwinds within a fragile healthcare industry, by striking a delicate balance between real innovation that is a delighter but not too disruptive that it spooks them [customers] into taking a step back, instead by meeting them where they are, holding their hand, and walking them into the sunset.

Strategically analyzing the evolving healthcare landscape is vital to innovation strategy and performance. Leaders must develop the right capabilities and competencies to match rapidly changing market and customer needs and develop external partnerships where internal capabilities are deficient.

Innovation through external partnerships can be a strategic and cost-efficient way to generate business value and deliver unmet needs. In Company 5, P6 worked with various business partners to "express healthcare challenges." P6 affirmed that to "deliver on our purpose and develop the most transformational technologies and solutions to patients and consumers, we have to partner and collaborate externally." According to P6, "there is no shortage of solutions, ideas, and technologies out there," making it essential for business leaders to "scientifically and strategically assess, focus, and prioritize efforts in the right spaces." A key strategy in catalyzing innovation performance is constantly assessing the business landscape and innovation ecosystem for opportunities to partner externally. Company 5 used a venture investment or corporate venture capital function that identified innovative solutions to business or customer needs and provided equity to

companies for their growth and an eventual return on investment (ROI). As acclaimed in Company 5's strategy document, they are the oldest corporate healthcare venture capital firm with nearly 50 years of experience and 156+ active companies in their portfolio. As an additional benefit, business leaders provided mentorship or sat on the board of directors as advisors to help cultivate innovation development. While a financial return is an essential indicator of innovation performance, P6 advocated that the most significant benefit is the development of strategically valuable solutions that advance the healthcare innovation ecosystem and bring new therapies or technologies that meet patient and consumer unmet needs. Fostering strategic external partnerships requires meaningful customer focus, though once the relationship is established provides an opportunity to catalyze innovation by exploiting the capabilities and competencies of multiple partners. An internal or external innovation strategy may bring different inherent risks, though fundamental disciplines of project and risk management remain vital to the effectiveness of innovation strategy.

Project and Risk Management

Risk management plays a pivotal role in shaping an innovation strategy, fostering a climate of risk-taking, and evaluating the risk-benefit of implementation. Project management practices effectively enable the delivery of value of innovation to customers. The frequencies of project and risk management practices were captured in Table 6, and although small, the values denote project management and risk management disciplines as facilitative capabilities that drive innovation.

Table 6

Project and Risk Management Codes and Frequencies

Code	Frequency	Subtheme percentage
Risk management	16	6
Project management	10	4
Risk-benefit analysis	9	4
Total	35	14

Effective risk management and project management are vital to strategy formation and implementation and can influence innovation performance. According to P2, "The essence of innovation is to create value or avoid costs, and you want to contain the cost from experimentation to the lowest possible value." P2 suggested that entrepreneurial leaders within strategic innovation functions could help innovation teams define the value of projects, gauge risk, and form an innovation strategy that includes proof of concepts and rapid iteration experimental design, to avoid unnecessary failures and cost over time. Furthermore, P4 suggested that teams "understand where they can apply risk or not and create mitigation plans where things could go wrong." The practical strategies provided in this study's findings extend Zaman et al.'s view (see Zaman et al., 2020) of a leader's role in inspiring creativity, unique problem-solving, and risk-taking. Leaders who materialize risk-based strategies and foster a risk-tolerant culture can influence innovative behavior, value creation, and sustained competitive advantage. Applying risk strategies, such as portfolio de-risking, are critical to catalyzing innovation performance.

Using a risk-based leadership lens could affect the constitution of an organization's innovation portfolio. According to Company 1's website, examples of

risks and uncertainties included product research and development challenges, the uncertainty of commercial success, manufacturing difficulties and delays, competition, changes in purchasers' behavior and spending patterns, government reform, and changes to laws and regulations. A practical approach used by P5 is to balance risk across the portfolio and multiple objectives by using "different technical strategies, commercialization, and market opportunities." Diversifying and de-risking the innovation portfolio can lead to business growth, even though some innovation projects may fail. According to P6, within early-stage innovation, creating de-risking and learning plans are crucial to innovation development, learning about new spaces, and downstream success. Acknowledging and understanding the organization's risk tolerance, de-risking the portfolio, and establishing risk-based practices and culture are vital to innovation performance. In addition to risk management, project management is vital in delivering healthcare solutions.

Innovation requires a flexible yet structured approach within large healthcare organizations. Innovation projects are often sanctioned through formal processes of writing a project proposal or charter, establishing a business case, and seeking senior management approval and funding. Within Company 3 and Company 8's strategy documentation, the proposal, charter, and stage gate processes provided the overall innovation project context; however, it was noted that they were not consistently applied due to limited tools and methodology. The use of stage gates was deemed instrumental in progressing projects across the innovation management process. Stage gates effectively allow innovation teams to use collected data to seek senior leadership advisory and

support, obtain go-no-go decisions, pause or kill projects, and receive additional funding for incremental stages of R&D. Formal processes, such as business case approval and stage gates, allow senior leaders to assess progress, provide guidance, and adequately fund innovation.

Effective project management may lead to delivering business and customer value on time and within budget. While project management is a fundamental aspect of innovation development and commercialization, P5 cautions that project managers are "incentivized to stay on time and on budget and do not necessarily care about how it [innovative solution] does in the market." While time and budget limitations are a normal part of R&D, P5 suggested that focus and effort be on creating desirable value for customers as "it's important to be right, not six weeks early." Influencing and steering stakeholders toward common goals is an essential aspect of a leader's role and confirms Dalton et al.'s (see Dalton et al., 2021) opinion that innovation leadership is vital for improving quality, productivity, and efficiency while managing internal innovation processes. While rapid innovation is essential within healthcare, business leaders should know that delivering desirable products is critical to generating customer value. Strategically analyzing risks and managing progress using project management methodologies is fundamental to innovation performance.

Ties to Contemporary Literature

Robust innovation and business strategies are critical to firm performance. As uncovered within the doctoral study, business leaders must think critically and examine internal and external drivers of innovation to influence stakeholders to adopt new ways of

working and develop and implement innovative solutions. The role of strategic analysis purported by participants as essential to innovation performance supports Lai et al.'s (2022) notion that knowledge is critical for firms' survival in highly complex business environments, such as the healthcare industry. Furthermore, strategic alignment between stakeholders is essential to catalyzing innovation, business performance, and competitive advantages (Lai et al., 2022). Furthermore, an innovation strategy may lead to a competitive advantage through better products, reputation, and market performance (M. Ali, 2021; Gallardo-Vázquez et al., 2019), which is corroborated by the study findings. An innovation strategy incorporating strategic analysis tied to evolving market and customer needs enables business leaders to leverage innovation to create and capture new value through innovation management.

According to doctoral study participants, the development and implementation of innovative solutions were key factors of innovation performance. While project management was an underlying theme based on study data, participants did not communicate deep insight into innovation project management practices. Zaman et al. (2022) demonstrated that project management innovation positively influenced project success and was boosted through the moderating effect of project governance and high performance work practices. Zaman et al.'s findings underscore a need for novel ways of working within entrepreneurial and innovative climates and hold strategic value for business leaders driving organizational innovation initiatives. Infusing innovative approaches within project management methods, robust governance structures, and high performing work practices may irrevocably influence innovation performance.

Due to the nature and complexity of the healthcare environment, innovation projects experience unexpected risks, high levels of uncertainty, and significant effect of change. A consensus from doctoral study participants was that healthcare stakeholders are typically risk averse, though risk management practices were crucial to evaluating and de-risking innovation projects and portfolios. The doctoral study findings extend Feld et al.'s (2022) impressions that healthcare risk management is vital to understanding risks through analysis and deriving acceptable mitigations and preventable measures to lower potential patient or consumer harm. Furthermore, the study findings are consistent with Zaman et al.'s (2020) view that innovation project leaders need to inspire creativity, unique problem-solving, and risk-taking to foster innovative behavior, value creation, and sustained competitive advantage. Innovation project and risk management practices may achieve a sustainable competitive advantage, deliver high project value, catalyze continuous innovation performance, and protect users if strategically ensconced within the innovation strategy.

Association With the Conceptual Framework

A highly competitive healthcare business environment beset with complexity may benefit from leaders with an entrepreneurial mindset and honed entrepreneurial leadership strategies that influence organizational performance. Ersarı and Naktiyok (2022) found that an entrepreneurial mindset positively affected entrepreneurial leadership and that entrepreneurial leadership positively affected business performance, cost leadership, and differentiation strategies. Entrepreneurial leaders may exercise greater discretion while strategically analyzing new opportunities, developing innovation

capabilities, and significantly influencing organizational value-generating strategies and performance (Nguyen et al., 2021). Entrepreneurial leaders who think strategically give the company a competitive edge and help create value by developing rapid, more efficient, higher quality, and adaptable innovative products (Farida et al., 2022). Leaders with an entrepreneurial mindset that think strategically and create innovative strategies may influence organizational performance within complex healthcare environments.

Entrepreneurial leaders are apt to take risks, especially in ambiguous and uncertain environments, and can shape a risk-taking culture (Raby et al., 2023). Strategic entrepreneurship and entrepreneurial leadership may significantly affect the healthcare environment as leaders with entrepreneurial mindsets form risk-based strategies that cultivate new ideas, advance innovation efforts, and generate business and customer value. Entrepreneurial leaders who develop and implement effective strategies can catalyze innovation performance and competitive advantage. Thus, innovation strategy, precisely business strategy, strategic analysis, and project and risk management themes are influenced by entrepreneurial leadership and tie into the conceptual framework.

Theme 3: Innovation Performance

Managing and measuring innovation value starts with defining what success looks like and identifying key milestones that deliver an expected ROI. According to P1, the best entrepreneurial leaders demonstrate value by cultivating innovation and delivering it simultaneously. Furthermore, P2 proposed that greater value can be created if entrepreneurial leaders “work on difficult problems that they [stakeholders] care about and cannot resolve themselves or present solutions in a way they [stakeholders] haven't

thought of themselves." In addition, P4 asserted that internal stakeholders want to know the ROI before engaging in or supporting innovation efforts. However, according to all study participants, the ambiguity of innovation makes it challenging to define innovation performance metrics precisely. Nine factors associated with innovation performance emerged from the study data (see Table 7).

Table 7

Innovation Performance Codes and Frequencies

Code	Frequency	Subtheme percentage
Value-add	35	18
Performance measurement	26	13
Productivity	25	13
Defining success	22	11
Benefit realization	20	10
Performance management	20	10
Resource utilization	20	10
Funding	17	9
Goals & objectives	14	7
Total	199	100

Extending beyond customary financial measures of innovation performance is a challenge for healthcare leaders. Like traditional projects, metric-driven behavior influences innovation performance. Though, P3 affirmed that "you can't really be prescriptive in terms of exact measurement of an innovative idea." Producing "what metrics matter most in getting that wheel to catch can be the detriment" to entrepreneurial leaders who cannot strike a balance between their creative and structured, performance-driven selves. Traditional measures, such as the health of the innovation pipeline (innovation throughput), the execution of strategy (milestone achievement), new product

development, commercialization, scalability of projects, stakeholder adoption and impact, and various financial metrics, are all effective measures of innovation performance. In reviewing organizational documents, Company 3 used the number of patents applied for as a measure of success, while Company 2 used innovation cycle times to determine adequate progress. While traditional hard metrics are easily defined, innovation leaders would benefit from demarcating alternate measures of innovation performance. Qualitative measures may be more meaningful within earlier innovation stages.

Innovation performance within healthcare is complex and can be measured at multiple levels. P2 noted that, like an onion, innovation may have "many layers of impact at the process, system, individual, organizational, and industry levels." Thus, it may be more appropriate to gauge early-stage innovation using qualitative measures and development and implementation stages using hard metrics. Nontraditional measures may include engagement scores, adoption of new ways of working, stage gate approval records, pausing or killing failing projects, sustained funding, and user experience. Furthermore, nontraditional measures could include innovation outputs, such as addressing assumptions, hypotheses, and critical questions; ideas generated; quality of provocative conversations; scenarios planned and tested; overarching commitment to the innovation process, and various tenets of an entrepreneurial climate, such as innovation work behavior and risk-taking. This study's findings extend Su et al.'s (see Su et al., 2020) research that positive emotions promote entrepreneurial intention and that emotional value, like economic value, can be a performance driver within the entrepreneurial process. Appling supplementary nontraditional measures may provide

leaders with a more accurate assessment of innovation performance, uncover bottlenecks or hurdles, and lead to more strategic decision-making. Whether using qualitative or quantitative measures of innovation performance, metrics must be established based on meaningful expected outcomes and progress gauged periodically to drive innovation strategy effectively.

Innovation performance measures must be reviewed periodically, linked to the overall organizational strategic objectives, and used to pivot strategically. All participants interviewed utilized periodic progress checks and quarterly planning and review sessions in which they initially set goals and objectives and evaluated the success of the innovation portfolio and individual projects. Dashboards were leveraged to create transparency, provide access, overcommunicate, and report on innovation progress. P5 conceded that entrepreneurial leaders need to "provide assurances that they're competent enough not to waste money and learn and fail productively, so stakeholders don't feel like they're burning money, (that) they're actually spending and taking risks appropriately." To catalyze innovation performance, entrepreneurial leaders must keep their fingers on the pulse. To keep abreast of and connected to the rapidly changing healthcare environment, according to Company 1's website, business leaders fund innovation challenges to bring forward groundbreaking ideas or technologies that aim to enhance scientific progress. P5 cautioned that if leaders are disconnected from strategy and progress, they "may get to the end of the line where you ship something, but it doesn't look anything like what you thought you were going to achieve in the first place." Thus, it is imperative to periodically validate assumptions and hypotheses, connect back

to the original strategic intent and objectives, make necessary adjustments or pivot, and refresh the innovation strategy toward future growth.

Ties to Contemporary Literature

The doctoral study findings provide practical implications that extend the body of knowledge on innovation performance management and measurement. The literature contains theoretical implications on innovation value. For example, Guo et al. (2022) found that value proposition innovation initiates value creation and value capture innovation that enhances organizational performance. How organizations create new consumer relationships or markets, use their resources and process capabilities to create new value, and how it develops revenue models or cost structures to capture value is essential in understanding how to compete within complex and ambiguous innovative healthcare environments. Trachuk and Linder (2022) noted that the use of financial and nonfinancial measures of innovation performance are highly variable and depend on the type of innovators, such as radical innovators, technological innovators, effective producers, creators, and imitators. Trachuk and Linder also found that the most common indicators of innovation performance are sales growth from new products, patents implemented, and total R&D expenses per thousand dollars of revenue. According to Avby et al. (2019), healthcare innovation is influenced by entrepreneurial leadership practices, cross-team collaboration, robust performance metrics, and a learning-oriented culture, and confirmed by the study findings. No solitary metric can capture the complexity of innovation. Therefore, business leaders must understand the meaningful indicators of innovation performance based on the innovation outcomes they strategically

plan to achieve for the specific innovation project. This doctoral study contributed new indicators of innovation performance, such as engagement scores, adoption of new ways of working, and sustained funding.

Association With the Conceptual Framework

Measuring innovation performance is challenging and requires leaders to define success and expected value upfront. Ricci et al. (2022) found leadership's positive and significant effect on entrepreneurial capital and innovation performance. Similarly, Farida et al. (2022) found that a strategic mindset and strategic leadership led to value creation and better decision-making, resource management, and management of an entrepreneurial culture. Entrepreneurial leadership constructs, such as creativity, innovative work behavior, opportunity recognition and exploitation, are essential to generating value within innovative environments. If business leaders can foster an entrepreneurial orientation and influence employees to work more innovatively, they can improve productivity, catalyze innovation performance, realize benefits, and generate an ROI. Measuring innovation performance and value may be done in numerous ways. An entrepreneurial leader must define the goals, objectives, metrics, and other performance measures most suitable for the specific innovation based on what key stakeholders value most. Entrepreneurial leadership has been shown to affect innovation performance directly; thus, managing and measuring innovation value is tied to the conceptual framework.

Theme 4: Innovation Leadership

The conceptual framework of this study was entrepreneurial leadership. Leaders who establish innovation leadership, specifically entrepreneurial leadership, as a core organizational capability can support innovation strategy, management, and performance. Leaders may possess numerous leadership traits, skills, behaviors, and mindsets conducive to catalyzing innovation performance. P1, P3, and P4 noted that diversity of thought was critical to healthcare innovation. The significance of leadership diversity was corroborated by Company 1's website, in which the CEO stated that "the best innovations can only come if our people reflect the world's full diversity of individuals, opinions, and approaches." Leading various stakeholders in the formation and execution of innovation strategy via robust innovation management processes may lead to rapidly creating and delivering healthcare solutions that serve unmet needs. The study's findings confirm Dalton et al.'s (see Dalton et al., 2021) notion that innovation leadership may improve quality, productivity, and efficiency, whether managing internal innovation processes or the external pressures within healthcare. Entrepreneurial leaders must eliminate impediments and provide the necessary support, resources, information, and rewards to motivate employees to act creatively, take risks, and increase their discretionary effort. Innovation leadership is a central aspect of healthcare innovation and a significant influence on innovation performance and was discussed using two key subthemes: leadership proficiency (f = 88) and leadership style (f = 76).

Leadership Proficiency

Leadership proficiency may be the most significant healthcare innovation driver. According to P1, the "biggest gauge of whether [innovation] strategy is effective is if it can withstand new leaders." Entrepreneurial leadership plays an influential role in healthcare innovation. The ability of an entrepreneurial leader to influence the conditions for innovation, for example, the innovation management process and organizational climate, can be consequential to innovation performance. Emerging from the data were six factors that affect entrepreneurial leadership proficiency (see Table 8).

Table 8

Leadership Proficiency Codes and Frequencies

Code	Frequency	Subtheme percentage
Leadership ability	33	20
Entrepreneurial mindset	22	13
Creativity	11	7
Evidence-based management	9	5
Resilience	7	4
Perseverance through failure	6	4
Total	88	54

An entrepreneurial mindset is a fundamental principle of entrepreneurial leadership. P1 hires and develops entrepreneurial thinkers with diverse skill sets that can lead and deliver within ambiguous environments. P1 goes as far as to say the "most successful entrepreneurial leaders balance innovating and delivering well with their teams, hire people that do both of those things well, or specifically have two groups that do each of it well." P2 commented that proficient entrepreneurial leaders have a curiosity-driven mindset, higher tolerance to risk, autonomy in decision-making, and grit

and can establish new ways of working by fostering innovative work behavior. Diverse thought leadership, strategic vision, and courage are essential traits of an entrepreneurial leader, according to P3. However, P3 cautioned that some creative leaders could get stuck in a perpetual state of creation at the sacrifice of delivering value. P3 revealed that "even creative, big thinkers can fail to see what was so obvious to me from a structured business side, which was, you have to show them [stakeholders] the return, you have to show them why it [innovative solution] matters." Leveraging the unique leadership skills and behaviors of various business partners may enhance innovation performance by balancing the creative and execution facets of innovation management. Excelling in healthcare innovation begins with choosing the right people to lead, influence, and deliver an innovative culture, community, and projects.

The innovation process and best practices are often a central focal point of innovation. As stated in Company 2's strategy document, the organization brings in best practices, captures feedback, and creates an environment for continual growth in the [innovation] space. According to P5, "people underestimate talent, especially in big organizations, because people assume that a competent professional, is a competent professional, is a competent professional and that people are interchangeable, especially in more ambiguous higher risk roles." Having the wrong leader in the role can be detrimental to innovation performance, and due to the rapid pace of innovation can make it hard to change without adversely impacting the team's ability to learn and deliver. P4 recommended that "senior leaders be thoughtful in terms of whom they put in these roles and what purpose they serve" and if it is suitable for the individual and the organization.

Conversely, P6 stated that business leaders “cannot purely rely on the great minds within our organization... that it doesn't matter how big and incredibly talented employees are, you can't have everybody who's talented within the industry in the organization.” The research findings support Simić et al.’s (see Simić et al., 2020) notion that developing talent is necessary but insufficient and that qualified entrepreneurial leaders must leverage employees’ abilities to deliver superior performance. Choosing a leader with entrepreneurial leadership proficiencies is instrumental in creating an entrepreneurial climate and developing innovative employee behavior. A leader that can leverage external talent through creative means may enhance innovation performance.

Developing an external innovation network may catalyze innovation performance and be a cost-efficient strategy within the healthcare innovation ecosystem. To deliver on Company 5’s innovation strategy, P6 established highly collaborative partnerships with external talent that bring new capabilities and competencies into the organization. Emphasis was given on Company 1’s website to accelerating early-stage innovation through strategic partnerships, as great ideas can come from anywhere, and it takes a partnership to turn ideas into breakthroughs. Additionally, P6’s organization used innovation incubators that “allow us to not just physically host companies in labs and give them access to [internal] capabilities, but also have people be able to sit down with those companies and mentor them.” The incubator process shaped an external innovation ecosystem that fosters strategic collaborations, future growth potential, cross-pollination of expertise, and, eventually, an ROI. Business leaders should nurture and encourage internal entrepreneurial leadership and a mindset that fosters scientific and innovative

behaviors, thinking, and resilient working methods. In addition, leaders should incorporate external capabilities and competencies within the innovation strategy to exploit opportunities in solving healthcare challenges.

Leadership Style

A leader's approach to influencing talent and an innovative culture may determine innovation performance. According to P1, the successful implementation of an innovation strategy hinges on business leaders' leadership style and people management ability. Entrepreneurial leaders who can effectively engage (f = 33), empower (f = 7), and recognize (f = 3) employees may significantly catalyze innovation performance. Emerging from the data were seven factors that are relevant to leadership style (see Table 9). Employee engagement had the most substantial influence over innovation performance, underscoring the importance for entrepreneurial leaders to design and execute effective engagement strategies.

Table 9

Leadership Style Codes and Frequencies

Code	Frequency	Subtheme percentage
Employee engagement	33	20
Leadership approach	13	8
People management	9	5
Communication	7	4
Employee empowerment	7	4
Active listening	4	2
Employee recognition	3	2
Total	76	46

A distinct leadership style may yield a considerably different outcome than another and is highly dependent on situational context. Understanding leadership styles, behaviors, and competencies influencing creativity are essential in catalyzing innovation performance (Mehmood et al., 2020). Micromanagement was deemed, by P1, to stifle innovation performance by creating distrust in the team's ability to deliver. Furthermore, P2 stated that entrepreneurial leaders' "patience and grit" are the most prominent innovation challenges. P3 found a clash between leaders with "outlandish thinking" versus "structured experience," though blending the leadership traits could "push healthcare innovation to new places." In cases of differing leadership styles, P3 suggested a "divide and conquer" approach to shepherd projects through innovation. However, a symbiotic relationship between diverse leaders must be established to be successful. Like transformational leadership, entrepreneurial leaders must influence their strategic vision by getting stakeholders to believe and adopt the organizational vision and objectives. Projecting confidence, building trust, and leading by example were leadership traits that P4 believed to be essential to influencing others. While there are countless leadership traits, proficient leaders who model entrepreneurial leadership characteristics may significantly influence innovative behavior, culture, and performance. Employee engagement is a crucial driver of innovation performance.

Inspiring passion and a sense of purpose are admirable qualities of entrepreneurial leaders. As advocated by P1, "happy people make great products," and engaged employees reduce headcount turnover. Key stakeholders must be strategically engaged and aligned to successfully develop and execute innovation strategies. To P1, "strategy

alignment is just getting the right people in the room for the conversation, who are the decision-makers who can make or break this." Through coaching, P2 engaged enthusiastic, resilient, and willing employees to push forward, stating that an entrepreneurial leader's role is to "help people do their job and allow people to contribute with ideas that can be rewarded by adoption." The research findings confirm Bagheri's (see Bagheri, 2017) notion that entrepreneurial leadership encourages and supports employees in idea and opportunity recognition and implementation. Influencing creativity, innovative work behavior, and discretionary effort may significantly enhance innovation performance. Effective leadership also includes managing situations or conflicts that may detract from achieving organizational objectives or hinder innovation performance.

Stakeholder engagement, especially within project teams, is not always positive and can lead to conflict. P5 acknowledged that the demands of rapid innovation can lead to increased stress and that leaders should expect and embrace conflict, though leaders must "make sure the team feels supported, they're not burning the candle at both ends, and that they're not burned out." Furthermore, P5 advocated that entrepreneurial leaders be cognizant of employee well-being, specifically their mental health, to remain highly engaged and functional. From P5's perspective, the strongest engagement comes when cross-functional partners are interconnected, empathize with each other's role, and think and speak about the project holistically. As described by P5, leaders can recognize a highly engaged and functioning team when, for example, "you hear technical folks using marketing justifications, and marketing folks asking the right questions about the

technical program, and when they're presenting to the senior leadership, you almost don't know who's playing what role on the team." All participants' strategy documents contained an element of stakeholder engagement, albeit focused on adopting and delivering healthcare solutions. The emphasis on stakeholder engagement within the research findings confirms Mulligan et al.'s (see Mulligan et al., 2021) concept that engagement is a leadership mechanism that positively facilitates innovation. To foster a highly engaged innovation team and drive innovation performance, an entrepreneurial leader must be highly engaged and foster interconnectedness between all stakeholders.

Ties to Contemporary Literature

Innovation leadership plays a crucial role in top-level and mid-level management for inspiring employees to be creative and deliver on innovation goals. The findings within the doctoral study are consistent with the body of knowledge on innovation leadership. Ye et al. (2021) noted that employee innovative work behavior is the source of organizational development, survival, and competitive advantage. The challenge lies with leadership to foster an environment in which employees demonstrate innovative behavior through the generation and implementation of new ideas. Furthermore, leadership creativity, such as with entrepreneurially minded leaders, is critical to navigating increasingly complex decision-making environments, such as healthcare, and innovation performance that may lead to competitive advantage (Ye et al., 2021). However, the doctoral study findings extend Ye et al.'s notions by cautioning exceptionally creative leaders to develop a balance between hyper-creativity and structured progress or leverage others that can drive the advancement of new ideas and

demonstrate an ROI. Furthermore, the study findings were congruent with Ali, Farooq, et al.'s (2020) results that leaders fostering an innovative organizational climate and high employee engagement can positively affect employee innovative work behavior that enhances business performance. To catalyze innovation performance, business leaders need to be proficient in fostering an innovation orientation at the organizational and individual levels and balance uninhibited creativity with progress.

Competent professionals are central to innovation success, and promoting innovativeness is a vital strategy for enhancing organizational performance. Developing leadership characteristics, behaviors, and styles conducive to influencing entrepreneurship and innovation may support employee performance. For example, organizational innovation and transformational leadership positively affect employee creativity and performance (Nasir et al., 2022; Zaman et al., 2020). Furthermore, employee creativity leads to increased performance through enhanced abilities, knowledge, and experiences that enable employees to achieve organizational objectives (Nasir et al., 2022). The doctoral study findings, such as diversity of thought and provocative conversations, were consistent with participation and consideration leadership styles studied by Saythongkeo et al. (2022), which facilitates open idea exchanges; critical feedback; cross-functional questioning, disagreements, and negotiation; and shared decision-making.

There is potentially no best leadership style to catalyze innovation, as each leadership style may comprise beneficial traits that influence employee innovativeness. However, the study findings are congruent with multiple authors such that leaders who

demonstrate entrepreneurial leadership principles model entrepreneurial behavior and encourage employees toward new idea creation while fostering an innovative culture (Bagheri, 2017). Furthermore, effective entrepreneurial leadership strategies may promote an entrepreneurial culture and orientation conducive to superior performance (Dabić et al., 2021; Kör et al., 2021; Shaher & Ali, 2020). Entrepreneurial leadership, the concept under study, is purported to be the most suitable leadership style to foster an entrepreneurial orientation and employee innovative work behavior. Fundamentally, leadership styles empower business leaders to create a vision and motivate employees to achieve innovation strategies.

Association With the Conceptual Framework

Leadership proficiency and style are central to the entrepreneurial leadership conceptual framework. Leaders' strategic role and ability to foster new ideas, exploit opportunities, create value, and effectively mobilize resources are essential to catalyzing innovation, generating business value, and creating competitive advantage (Haim Faridian, 2023). Entrepreneurial leaders influence employees through social processes and interactions, such as framing challenges and goals, absorbing uncertainty, path clearing, building commitment, and forming shared understanding (Haim Faridian, 2023). An entrepreneurial leader's strategic vision is critical to creating value through governance within the innovation process (Haim Faridian, 2023). Furthermore, Raby et al. (2023) found that entrepreneurial decision-making skills were critical for resource utilization, funding estimation, and relationship building. Entrepreneurial leadership skills, such as creative forward-thinking, are essential to assess and respond to current or

emerging problems in developing and commercializing innovative products (Raby et al., 2023). A core role of an entrepreneurial leader is to influence employees' innovative work behavior. Central to the success of entrepreneurial leadership is the leader's ability and behavior which results in new opportunity recognition and value creation. Innovation leadership, adopting entrepreneurial leadership proficiencies and style, is directly tied to the conceptual framework.

Theme 5: Innovation and Change

Innovation and change, explicitly change management, is vital to creating and delivering innovation value. According to Company 1's website, the organizational goal was to foster structural and systemic change by supporting the global startup community and expediting whole-scale impact toward health equity. A comprehensive change management approach is essential to get stakeholders on board, embrace the change process, and eventually adopt innovative solutions. Table 10 contains factors that emerged from the data associated with innovation and change.

Table 10

Innovation and Change Codes and Frequencies

Code	Frequency	Subtheme percentage
Stakeholder management	46	32
Strategic communication	21	15
Adopting change	18	13
Change resistance	13	9
Speed of adoption	12	8
Barriers to change	10	7
Status quo	10	7
Ambiguity	8	6
Radical change	6	4
Total	144	100

Engaging stakeholders early and often, such as internal business partners and external customers, is critical in informing the innovation strategy, developing the right solutions, and laying the foundation of the value of the respective change. Upon review of organizational strategy documents, Company 2 used a change strategy blueprint that provided "a vision for what good looks like and recommended strategies and guidelines for ways of working and stakeholder engagement via a thorough current state assessment." Furthermore, it was noted within Company 2's document that comprehensive change strategies helped "define rules of engagement between decision-making stakeholders and principles of communication with impacted internal and external groups to enable progress toward change." An effective strategy for facilitating change is establishing and leveraging change networks of highly engaged change champions. The prioritization of stakeholders, especially early adopters, supported by change champions can drive up adoption rates and help others navigate ambiguity.

The innovation climate can be wrought with complexity, ambiguity, and uncertainty. As described by P1, the healthcare climate could be considered a "blackhole that many different groups connect to." Open and transparent communication is critical during change efforts. This study's emphasis on effective communication may disconfirm Škare et al.'s (see Škare et al., 2022) finding that entrepreneurship is minimally linked to communication. A challenge for P3 is working in larger company environments that are often siloed or functionally compartmentalized, in which incoming insights or feedback may inconsistently land with stakeholders. According to P3, the lack of solid interconnectivity has led to new product development delays and weaker innovation

launches. Not only is it essential that key stakeholders be a part of innovation development, but it may also be critical that they engage in change efforts surrounding innovation adoption. Engaging people in shaping the change reduces resistance and helps them navigate through ambiguity, build trust, and better understand the ROI of innovation efforts.

Resistance to change can be debilitating to innovation performance. When it comes to driving innovation, several business leaders noted employee resistance to change, especially in ambiguous environments and when bringing external innovation in-house. P4 emphasized the importance of entrepreneurial leadership practices to "help support people that usually operate within very structured process-driven environments to thrive within innovative spaces." To overcome change resistance, P2 suggested that "instead of imposing innovation on people, you identify gaps, and you help people see that there's no other way, and at the end of the day, the value created is in people's best interest." Furthermore, P2 identified a "self-fulfilling prophecy," in that people resist change when they are already successful at their jobs and recommended directly addressing the "what's in it for me? why should I care?" attitude by revealing the value that change brings to people's lives and jobs. A leader's role in overcoming employee resistance to change found within this study extends Mukaram et al.'s (see Mukaram et al., 2021) and Soomro et al.'s (see Soomro et al., 2019) research that there exists a significant positive relationship between leadership and organizational readiness for change and that entrepreneurial leaders' vision for change could influence followers' ability to create or exploit strategic organizational value. Leaders are pivotal in reducing

resistance to change, shaping followers' experiences, and driving the adoption of healthcare innovation. Healthcare leaders still face the challenge of building employee confidence in managing uncertainty within ambiguous environments.

Fear of uncertainty was revealed from the study data. According to P6, employees are experiencing a "not invented here" syndrome, in which they are less interested and likely to adopt innovative solutions that their organization did not invent. In P6's perception, the fear stems from employees' belief that they "don't know how to do it, don't have the skill set to do it, or are not the right people to do it." The fear of uncertainty found within this study confirms Gieure et al.'s (see Gieure et al., 2020) findings that individuals are likely to have an attitude and inclination to be entrepreneurial if they have the essential skills, knowledge, and capacity. Leaders must reduce fear of uncertainty and adequately prepare their employees for innovation and change through practical change management principles, training and knowledge management, skill development, and strategic resource management. Fear of the unknown may immobilize employees and lead to change resistance, adversely impacting innovation performance.

Another challenge impacting innovation performance and leading to change resistance uncovered in the study is the concept of "innovation fatigue." Several participants noted that employees are becoming tired of constant innovation. Innovation fatigue may stem from the bastardization of the term innovation, often used broadly and not reserved for the top prioritized or idiosyncratic projects with significant portfolio impact and value. As noted by P4, "people don't want to be guinea pigs; they don't want

to try new things constantly. A lot of people want something that's fully baked and already done and ready [to go]; they don't want to take that risk." The innovation process may be another reason for innovation fatigue. Overburdening processes create frustration and discount innovation's genuinely creative and agile spirit. As cautioned by P2, innovation fatigue can also affect the organization's "capacity to absorb change," consequentially "exhausting the organization," leading to inadequate innovation performance. Innovation fatigue can be a significant roadblock and adversely affect healthcare innovation. Leaders must be mindful of the organization's capacity to innovate, absorb constant change, and strategically prioritize or rebalance the innovation portfolio accordingly.

Ties to Contemporary Literature

Change is an integral part of innovation, and change management is a fundamental discipline essential to the innovation management process and value delivery. Effecting change, primarily breakthrough or radical, often requires transforming organizational structures, processes, and practices. The most impactful detractor to effecting change is getting people on board and adopting the change. Harrison et al. (2022) affirmed that change readiness was a significant precursor to whether employees accepted and adopted a change initiative. The study findings were congruent with Mukaram et al.'s (2021) findings that leadership is vital to entrenching organizational readiness for change. The significance of strategic communication and preparing stakeholders to be change ready through active stakeholder management were uncovered

in the doctoral study findings and provide valuable practical insight to inform the change management practices of healthcare business leaders.

Given innovation's significant effect within the healthcare industry, overcoming resistance to change is vital to creating and delivering innovative solutions. Kashan et al. (2022) noted that organizational resistance to change is a significant obstacle to implementing new ideas. Furthermore, existing innovation models do not necessarily account for the role of individuals and how to engage them in the innovation implementation process (Kashan et al., 2022). The use of change agents and networks was a principal finding within the doctoral study on innovation and change and congruent with Kashan et al.'s focus on people who are active agents within the innovation process. Establishing a support system to overcome resistance to change may catalyze innovation performance.

Leaders are instrumental in effecting change by eliminating or limiting barriers to innovation. Five significant management barriers that hinder innovation performance are management support, low motivation, resistance to change, risk avoidance behavior, and financial resource (Adegbite & Govender, 2022). The doctoral study findings indicated that leaders profoundly support, motivate, and inspire change through leadership influence, funding, and fostering a climate of risk-based decision-making. The doctoral study finding on the phenomenon of "innovation fatigue" adds to the body of knowledge and contributes theoretical and practical implications to change management theory. To successfully implement novel, innovative solutions, change management practices should be holistically embedded within the innovation management process.

Association With the Conceptual Framework

Organizations must change in lockstep with evolving customer and market needs to be competitive. To achieve fundamental change and organizational transformation, business leaders must implement novel methods, systems, ways of working, and innovations (Kassa & Getnet Mirete, 2022). Kassa and Getnet Mirete (2022) found that entrepreneurial training, attitude, and leadership significantly affected innovation. Entrepreneurial leaders, like transformational leaders, are pivotal to launching dramatic change and innovation. Furthermore, entrepreneurial leaders can reduce change resistance and foster new ways of working by inspiring creativity and positive attitudes in employees (Kassa & Getnet Mirete, 2022). To gain a competitive advantage, develop new technologies, better respond to market changes, and catalyze innovation performance, entrepreneurial leaders should foster an entrepreneurial orientation and drive organizational change focused on customer preferences, quality, and technology interfaces (Siriram, 2022). Within any change initiative, a leader's role is essential in creating awareness, desire, and knowledge, upgrading employees' ability to adopt the change, and positively reinforcing and embedding the change within the organizational structure, processes, and culture. Proficient entrepreneurial leaders may leverage their skills to reduce barriers and increase adoption amongst stakeholders. Innovation and change, precisely the change management theme, is influenced by entrepreneurial leadership and tied to the conceptual framework.

Theme 6: Innovation Orientation

To catalyze innovation performance, fostering a culture of curiosity, learning, creativity, and risk-taking is imperative. Instilling a sense of purpose and igniting employee passion is essential to establishing an organizational innovation orientation within the business structure and individuals. As espoused on its website, Company 1 has created an innovation orientation that tackles some of the world's toughest healthcare challenges by ensuring that those directly affected by a [healthcare] problem be at the forefront of designing its solution. Furthermore, an emphasis is placed within Company 3's strategy documentation on pursuing the highest value opportunities to address unmet needs using best-in-class solutions that are enabled by a patient-centric innovation orientation. Emerging from the study data were seven factors that may influence an innovation orientation (see Table 11).

Table 11

Innovation Orientation Codes and Frequencies

Code	Frequency	Subtheme percentage
Organizational culture	22	27
Purpose-Passion	21	25
Learning	20	24
Positive reinforcement	9	11
Diversity	5	6
Storytelling	5	6
Social change	1	1
Total	83	100

An innovative entrepreneurial climate is often prone to high-risk and uncertainty. However, in a structured and regulated healthcare environment where employees are

often risk averse, P4 advised entrepreneurial leaders to influence an environment in which employees "feel safe." Furthermore, P4 recommended that entrepreneurial leaders build risk tolerance by helping employees form risk-based decisions and learn from past failures and successes. To cultivate psychological safety and commitment, P5 urged entrepreneurial leaders to encourage employee participation by inspiring their passions and stimulating a "willingness to try" by developing a "coaching culture of curiosity, openness, transparency, and candor." The research findings confirm St-Jean and Tremblay's (see St-Jean & Tremblay, 2020) discovery that mentoring produces employee self-efficacy and Kuratko et al.'s (see Kuratko et al., 2021) findings that coachability is correlated with goal progress, product innovativeness, and firm performance. Employee engagement and participation are influential factors in establishing psychological safety, reducing risk-aversion, and fostering an innovation orientation. Coaching and mentoring innovation leaders may lead to higher engagement and positive performance outcomes.

The entrepreneurship environment may be drastically different from the corporate environment, though parallels may be drawn. Participants who previously had startup experience and now work in large healthcare organizations noted the profound difference in organizational culture and governing systems between the two business environments. P3 attested that leaders could strategically change direction with minimal approval in a startup environment. Having an agile mindset and being able to pivot swiftly meant that innovation teams could remain closer to evolving consumer needs, iterate quicker, and adapt more markedly than within traditional corporate environments. While the healthcare environment is less tolerant of unbridled creativity, P2 advised entrepreneurial

leaders to “help individuals remain motivated, optimistic, and constructive in the face of these challenges” and emphasized that employee “passion and grit” are vital to catalyze innovation. According to P2, funding innovation and awarding entrepreneurial behavior of individuals who create good for the [innovation] ecosystem will benefit the company and others and spur a new wave of innovation at little cost. This study’s findings may disconfirm Abou-Moghli’s (see Abou-Moghli, 2018) conclusion that innovativeness and risk-taking entrepreneurial attributes are not crucial to business success. While notable differences exist between entrepreneurship and corporate environments, entrepreneurial leadership plays a significant role in catalyzing innovation performance in both contexts.

Ties to Contemporary Literature

Senior and mid-level leaders are imperative in developing employee innovativeness and promoting an innovative climate. Lek et al. (2022) found that the top management team's innovation orientation positively mediates the organizational learning and innovation performance relationship. The doctoral study findings are consistent with Lek et al.'s results that senior leaders oriented toward and committed to innovation can leverage institutional support to foster an innovative or entrepreneurial climate that promotes learning and catalyzes innovation performance. Orienting leaders toward entrepreneurship may support the formation of innovation strategies and plans and the implementation of innovation outputs such as novel ideas, technologies, and processes. Furthermore, the knowledge, skills, and abilities of leaders oriented toward innovation influence their strategic choices, thus impacting innovation performance and

organizational learning culture (Lek et al., 2022). Leaders committed to innovation and able to nurture a learning culture may catalyze innovation performance.

Leaders with an entrepreneurial orientation may be predisposed to other business orientations that enhance healthcare innovation. Mohungo et al. (2022) found that an entrepreneurship orientation significantly and positively influences a market orientation, aesthetics innovation, and business performance. Similarly, Giri et al. (2022) found that entrepreneurial orientation and culture positively and significantly affected business performance and innovation. The doctoral study findings were consistent with Mohungo et al.'s and Giri et al.'s results, as having an agile and entrepreneurial mindset helped leaders foster an entrepreneurial and market orientation that brought their organizations closer to consumer needs and effectively facilitated the development and commercialization of innovative solutions that generated business value. The study findings also supported Jeong et al.'s (2019) observations that leaders who establish an adaptive organizational culture and people-centered management style influence firm entrepreneurial orientation and performance. Fundamentally, proficient leaders with an entrepreneurial or innovation orientation have the propensity to act more independently and creatively, take calculated risks, make strategic decisions to explore and exploit new opportunities tied to the market and consumer needs, and develop an organizational culture and followers to do the same.

Association With the Conceptual Framework

Entrepreneurial leaders who foster an entrepreneurial orientation and culture can help employees be creative, identify and exploit new opportunities, take calculated risks,

and achieve personal development within an ambiguous environment. Passion is an essential aspect of entrepreneurship, and entrepreneurial leaders who can instill a sense of passion and connect employees' innovative work behavior to a common purpose may have a positive influence on entrepreneurial intentions, motivations, persistence, commitment, innovation performance, and business growth (Dhakal et al., 2022). Learning is also essential to an entrepreneurial orientation and indispensable to leadership development in forming entrepreneurial knowledge, skills, and abilities. Rugpath and Mamabolo (2022) found that meaning-making, redefining the purpose, entrepreneurial competencies, leading self, leading others, and functioning as a jack of all trades are essential to positive learning outcomes. Proficient entrepreneurial leaders had an open and agile mindset, self-efficacy, took calculated risks, and solved problems, thereby accelerating their learning development, and promoting a learning orientation coupled with an entrepreneurial orientation to improve entrepreneurship and business performance (Rugpath & Mamabolo, 2022). Entrepreneurial leadership promotes an environment where employees can feel safe to be innovative, contribute ideas, and accomplish goals without feeling intimidated (Malibari & Bajaba, 2022). Entrepreneurial leaders who instill employee passion, purpose, and learning may positively affect employee innovative work behavior and shape an innovation climate that catalyzes innovation performance by transforming opportunities and challenges into growth and profit. Thus, innovation orientation and climate themes are influenced by entrepreneurial leadership and tied to the conceptual framework.

Applications to Professional Practice

Applications to professional practice involve empowering healthcare business leaders with theoretical and practical implications for applying entrepreneurial leadership strategies to catalyze innovation performance. The doctoral study research findings apply to professional practice in the healthcare industry, specifically pharmaceutical, medical device, and consumer healthcare sectors. The research findings inform healthcare business leaders of the significant effect entrepreneurial leadership has on setting the strategic vision and action plans; engaging and motivating stakeholders; developing innovative solutions; implementing change; and creating, capturing, and measuring value. Healthcare leaders may enhance business and innovation performance and acquire competitive advantage by understanding the antecedents and drivers of innovation. The research findings may also extend and enhance business practices within other industries.

Innovation Strategy, Management, and Performance

The healthcare industry encompasses numerous organizations vying for customers, market share, and competitive positioning. To survive and remain competitive, healthcare organizations must create partnerships, share specialized knowledge, cut costs, and mitigate risks while rapidly developing innovative healthcare solutions (Akay et al., 2022). Innovation within a highly complex and risk averse healthcare environment has challenged business leaders (Dube et al., 2022). Within the research findings is an emphasis on innovation strategies to adopt a market and customer orientation, to create value above base business, and for leaders to construct a robust innovation framework and roadmap that defines success. While noted in the research

findings that there is no secret formula to innovation, leaders may successfully innovate within a highly challenging healthcare environment by forming innovation strategies and action plans that comprise well-defined goals and milestones tied to strategic organizational objectives, distinct ROI, and a sense of purpose. To achieve innovation success, leaders must establish a robust innovation process.

The innovation process is fundamental to delivering business and customer value. Haring et al. (2022) found that an in-depth appreciation and understanding of healthcare innovation processes were lacking and that challenges to overcome barriers were common to all stakeholders. Therefore, implications surrounding the three core phases of the innovation process, early, mid, and late stages, were accentuated within the research findings. Within early-stage innovation, business leaders advocated that idea management was imperative to promote idea generation, critical examination, and prioritization of concepts. In addition, including multiple stakeholders within the idea management process is essential to patient-centered care (Välimäki et al., 2022). An experimental design that includes forming assumptions and hypotheses, opportunity recognition and problem-solving, testing and piloting concepts, and a suitable funding and governance structure to steer innovative projects was recognized as essential to innovation development within mid-stages. Key findings from Moss et al.'s (2022) study are that organizational commitment to and financial support of innovative pilots was crucial and can be influenced by intrapreneurial champions. The creation, testing, and financial support of ideas play an instrumental role in driving healthcare innovation. Leaders must balance the creative development phases with implementation and

measurement phases of innovation management to deliver healthcare solutions effectively.

Effective implementation and measuring innovation performance were instrumental to late-stage innovation. Numerous measures of innovation are used by organizations and vary in complexity and effort in collecting and analyzing data (Trachuk & Linder, 2022). While measuring the value of ideas was deemed challenging to business leaders, the research findings supported by the literature (Trachuk & Linder, 2022) bestowed several financial and nonfinancial measures that leaders could apply to innovative projects. Using qualitative and quantitative measures beyond financial metrics can enhance the management and oversight of healthcare innovation. Leaders who understand innovation drivers within each stage of the innovation process can affect professional practice by critically analyzing healthcare's most challenging problems and fully exploiting opportunities that deliver innovative healthcare solutions and enrich business performance.

Innovation Leadership, Orientation, and Change

Entrepreneurial leadership's effect on healthcare innovation was the focal topic of the doctoral study. The research findings supported the central role that healthcare leaders play in fostering an innovation orientation, highly collaborative stakeholder engagement, and novel ways of working. Festa et al. (2021) advocated that pharmaceutical leaders develop competitive strategies surrounding their strengths which are focused on differentiation or niche orientation toward enhancing innovation. Furthermore, leaders are instrumental in helping employees navigate ambiguity and champion change

adoption. Lindsay (2022) found that it is essential to develop and support leaders in strengthening their voice, confidence, influence, and capability in their leadership practice and using creativity and action amid uncertainty and ambiguity. Leaders prepared to manage ambiguous environments may better support employees through uncertainty. Developing innovation strategies and fostering an entrepreneurial climate that promotes innovative work behavior, such as creativity, may catalyze innovation performance and adoption of healthcare solutions.

Employees that demonstrate innovative behaviors may help drive innovation in a complex, challenging healthcare environment. Entrepreneurial leadership stimulates employee self-initiated, innovative behavior within ambiguous and uncertain environments and leads to the recognition and improvement of entrepreneurial opportunities (Bilal et al., 2022). A pivotal aspect of leaders' roles is to nurture ideal organizational citizenship behavior that facilitates innovative work behavior and the development and adoption of new capabilities and competencies. By leveraging the insights and strategies of the doctoral study research, business leaders can affect professional practice by inspiring employees to be more curious and creative, think critically, take calculated risks, rapidly experiment, learn from failure, and shape an entrepreneurial mindset that catalyzes innovation performance, heightens customer satisfaction, and delivers business value.

Implications for Social Change

Beyond business success, organizations can contribute to society through social change initiatives. Social entrepreneurship is a paradigm that enables leaders to derive

answers to societal problems in education, environment, health, and human rights (Valle-Mestre et al., 2022). While social entrepreneurship is still in its infancy, it is increasingly recognized as impactful to a nation's social, economic, cultural, and environmental wealth (do Adro & Fernandes, 2022). This doctoral study's research findings could contribute to social entrepreneurship and innovation in several ways. Proficient business leaders may generate interactive and collective learning, institutional change, and the creation of entrepreneurial capabilities that lead to social innovation (Naranjo-Valencia et al., 2022). Furthermore, entrepreneurial leaders may help discover societal opportunities and explore answers to social problems that generate income or support global economic and environmental sustainability (do Adro & Fernandes, 2022). Through this doctoral study, healthcare business leaders are better informed on strategies that catalyze innovation performance through effective innovation management processes, strategy formation, and leadership practices that foster an innovation orientation and drive change adoption. Business leaders may effect positive social change by developing new leaders.

Business leaders who produce innovative healthcare solutions could shape economic and social survival strategies for rural communities and deprived nations (Naranjo-Valencia et al., 2022). A key research finding was that coaching and mentorship of individuals within innovative programs benefited individual growth and resulted in enhanced innovation performance. Entrepreneurial leaders practicing social entrepreneurship may coach and mentor external talent that can achieve societal goals, provide insights to the organization, and potentially create job opportunities for individuals seeking to enter the industry. Organizations that outperform competitors in

social innovation may differentiate themselves and achieve competitive advantage and long-term organizational sustainability (do Adro & Fernandes, 2022). Valle-Mestre et al. (2022) noted that social innovations are created based on social dimensions and not on organizations' economic interests. With the in-depth insights and practical strategies to foster organizational entrepreneurship and innovation provided in this doctoral study, business leaders focused on positive social change could extend the same strategies across external individuals, communities, organizations, institutions, cultures, or societies to solve healthcare challenges.

Recommendations for Action

As found in this doctoral study, entrepreneurial leadership strategies are effective in catalyzing innovation performance. Navigating complex and uncertain business environments, such as within healthcare, is an essential facet of entrepreneurial leadership and innovation performance. To conceive, develop, and implement healthcare innovation using entrepreneurial leadership, business leaders should consider the following recommendations:

1. *Innovation Management:* Choose an innovation framework that facilitates idea generation, opportunity recognition, and problem-solving via crowdsourcing and premortem analysis; experimental design comprising hypothesis testing and prototyping via rapid iterations; senior leadership and diverse thought leadership consultation via innovation councils; and constant introspection to pivot strategically. Ensure a robust communication strategy is

in place across the innovation lifecycle. Lastly, periodically calibrate the innovation strategy and progress with internal and external stakeholders.

2. *Innovation Strategy:* Seek growth opportunities outside traditional need states and beyond base business while leveling risk across the portfolio. Clearly articulate goals, objectives, performance measures, and expected outcomes tied to consumer and market direction, competitive positioning, and organizational growth potential. Stay abreast of the rapidly evolving healthcare landscape to identify and exploit opportunities, uncover unmet needs, and inform the innovation strategy. Develop and invest in external partnerships, especially where dynamic capabilities do not exist internally. Embed project management and risk management principles throughout the innovation strategy and process.
3. *Innovation Performance:* Clearly define customers' needs and what success looks like and identify key milestones that generate an ROI. Foster metric-driven behavior, though discerning between early- and late-stage innovation performance measures. Adopt more qualitative measures during early-stage innovation and more quantitative ones during development and implementation.
4. *Innovation Leadership:* Hire, develop, and retain leaders with an entrepreneurial mindset who can lead and deliver within ambiguous environments. Establish a training program to develop entrepreneurial leadership traits needed to foster an entrepreneurial and innovative orientation

and propagate innovative work behavior amongst employees. Analytically identify suitable employees to lead innovation projects, avoid rotating key leaders, and reward teams for positive performance and failures. Leverage an entrepreneurial leadership style to engage, empower, recognize, and inspire passion and a sense of purpose within employees. Lastly, establish a coaching and mentorship program to develop employees on entrepreneurship principles and practices.

5. *Innovation and Change:* Manage innovation change using a robust change management framework, such as Prosci ADKAR. Establish and develop a change network that leverages change agents and early adopters. Create a strategic communication plan inclusive of key messages. Analytically prioritize key stakeholders, break down silos, and fortify interconnectivity between key business partners. Strategically optimize, prioritize, and communicate innovation initiatives to lessen innovation fatigue, limit resistance to change, and augment change readiness.
6. *Innovation Orientation:* Cultivate an entrepreneurial and innovative culture by materializing psychological safety when dealing with high-risk and uncertainty. Embed agile philosophies, as appropriate, to swiftly pivot in line with rapidly evolving market and customer needs. Establish an organizational risk tolerance, nurture risk-based decisions, and empower employees with decision-making autonomy. Encourage employees' creativity and willingness

to try by inspiring passion, grit, and a sense of purpose tied to organizational objectives.

Three approaches will be used to disseminate the doctoral study findings. First, a high-level summary of the findings will be provided to business leaders who participated in the study for consideration and potential adoption within business practice. Second, the study will be published in Walden University's ProQuest database for the benefit of future scholars. Lastly, I will work with my doctoral study chair and second committee member to adapt and publish the research within a reputable journal.

Recommendations for Further Research

The purpose of this qualitative multi-case study was to explore entrepreneurial leadership strategies that some healthcare business leaders working in the pharmaceutical, medical device, and consumer healthcare sectors in North America and Western Europe used to catalyze innovation performance. Six business leaders from independent organizations across three large multinational firms were interviewed to answer the research question. Recommendations for further research include expanding the breadth and depth of the research. Including diverse industries, sectors, firms, and geographies and increasing the number of participants may add to the generalizability of the research findings. Furthermore, interviewing employees that implement the entrepreneurial leadership strategies of business leaders would add additional insight into the approach and effect of the strategies. Longitudinal studies comprising larger sample sizes or controlled conditions could provide better insights into how entrepreneurial leaders catalyze innovation. Entrepreneurship and innovation were the primary foci of the

research. While the doctoral study covered several leaders with past entrepreneurial startup experience, further research should include interviews with leaders directly in the entrepreneurial space instead of the corporate environment. Comparing and contrasting corporate intrapreneurship versus entrepreneurship would enhance the value of insights. The last recommendation for further research would be to quantitatively examine each theme or subtheme and its relationship with entrepreneurial leadership and innovation.

Reflections

Approximately 10 years had elapsed since I started my MBA. The 3-year MBA journey significantly shaped my academic and personal life and prepared me for realizing my dream of achieving a doctorate. While being conferred as a doctor is a significant life achievement, the doctoral journey has shaped my personal, academic, and career life. The doctoral study process provided a valuable blend of scholarly and practical research. A doctorate program demands time, focus, commitment, and energy. More importantly, pursuing a doctorate requires an unrelenting spirit and a healthy appetite for learning.

Furthermore, I found that having a suitable support network, such as family, friends, and colleagues, facilitated the journey and significantly contributed to a positive outcome. The DBA journey was one of self-discovery that broadened my horizons and enriched my intellectual faculties. The research study deepened my strategic mindset on various organizational constructs and emboldened me to pursue my future goals of starting a leadership consulting business focused on entrepreneurship and innovation and giving back to the community through professorship.

Having close to 20 years of experience in healthcare, specifically, the pharmaceutical sector, brings a wealth of knowledge and experience. The potential for preconceived personal biases to creep into the research was present during the study design and conduct stages. However, practicing constant reflexivity, comprising self-examining biases and assumptions, helped minimize or avoid researcher bias. Interviewing participants within a close network could introduce participant bias in which the participant may respond in a way they perceive as matching up to the desired results of the researcher. Participant biases were minimized by asking participants clarifying or probing questions, requesting examples, and conducting member checking, ensuring a proper understanding and interpretation of the data. Rapport was built early with participants, and a comfortable virtual setting was used to conduct interviews, limiting researcher influence, and allowing participants to speak candidly about their organizations and personal experiences.

Conclusion

Globalization, rapid technological advancement, and significant hurdles in diffusing, adapting, and leading innovation efforts have challenged healthcare leaders. Healthcare business leaders are compelled to catalyze innovation performance through effective entrepreneurial leadership strategies that enhance economic growth and profitability and deliver improved patient and customer outcomes. As found within this research study, improving healthcare innovation outcomes takes cutting-edge strategies, agile processes, effective leadership practices, holistic change systems, an entrepreneurial climate, and a community of talented, passionate, and purpose-driven employees. While

not extensively adopted within business practices, healthcare leaders are encouraged to embrace entrepreneurial leadership to create organizational strategies that lead to differentiation, profit, and competitive advantage. Beyond improved business performance, proficient entrepreneurial leaders may return value to society through social entrepreneurship and innovation.

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Appendix A: Case Study Interview Protocol

Case Study Interview Protocol

Overview

You have been selected to participate in this doctoral study as a business leader with relevant experience in healthcare innovation. The research goal of this study is to understand entrepreneurial leadership strategies that catalyze innovation performance.

Data Collection Procedures

To facilitate notetaking, I would like to record our conversation today and can provide you with a copy of the transcript, upon request. As outlined within the informed consent form and as a reminder, your participation is confidential and voluntary. You may withdraw your consent to participate at any point should you feel uncomfortable.

This interview is planned to last no longer than one hour. During this time, I have several questions that I would like to cover. A 30-minute follow-up phone call will be scheduled at your convenience to share my interpretations of the research findings and solicit your feedback. Thank you for voluntarily agreeing to participate.

Interview Questions

1. How are you involved in leading innovation within your organization?
2. What entrepreneurial leadership strategies have you used to foster an innovative or entrepreneurial orientation within your organization?
3. What challenges have you faced embedding an innovative or entrepreneurial orientation?

4. What entrepreneurial leadership strategies have you used to manage and implement innovation initiatives?
5. How do you judge the effectiveness of those entrepreneurial leadership strategies?
6. How do you know when to apply specific entrepreneurial leadership strategies?
7. What challenges have you faced in using those entrepreneurial leadership strategies?
8. What have you done to meet those challenges effectively?
9. How do you measure innovation performance?
10. What additional information would you like to share about using entrepreneurial leadership strategies to catalyze innovation performance?