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Evolving Leadership Theories: Integrating Contemporary Theories for VUCA Realities

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Abstract: The present study examines the correlation between current leadership models and three key elements of contemporary society: the volatile, uncertain, complex, and ambiguous (VUCA) environment, the rapid digital revolution occurring in our surroundings, and the emergence of the next generation within our organizations. This study presents a framework for successfully incorporating and applying several leadership paradigms in exploratory, reflective, and analytical operations. Effective leadership in the digital era necessitates the use of a variety of leadership styles. Companies must succeed in integrating into the varied and inclusive work environment required by modern society. Achieving the desired results requires not just the abandonment of past methods but also the commitment to applying “next practices”. The current leadership concepts should be in accordance with the prevailing working conditions and beliefs of the current employee and those of future employees. By adopting the viewpoint of the “next up”, existing leadership theories can better accommodate the emotional, historical, and intrinsically imperfect situations that present leadership usually perceives and utilizes to evaluate its activities. The complex structure of this study’s framework enables the use of a single, collaborative, robust leadership model to drive rapid and seamless digital transformation in both enterprises and the contexts that initiate and guide such changes. Furthermore, it enables the exploration of the possible benefits of this approach for both the leaders and team members who struggle with the complexity of these adjustments.

Keywords: contemporary leadership theories; adaptive leadership; heliotropic leadership; VUCA environment; new generational dynamics



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1. Introduction

This integration of digital technologies is fundamentally transforming firms’ operational frameworks. Executives and organizations are under pressure to integrate existing and emerging technologies to fulfill their core purpose of providing high-quality products and services to both direct and indirect customers (Verhoef et al. 2021). Executives now need to ensure that a robust “innovation ecosystem” supports the integration of technology, fostering the development and implementation of new ideas (Colbert et al. 2016; Kane et al. 2015). Meanwhile, Millennials and Generation Z populate the labor market. Today’s technology-savvy generations face unique expectations from employers to smoothly interact with digital systems and engage in the open, always-accessible interactions that have long characterized the “open culture” found within many businesses. From top executives to entry-level employees, the demand for change in the workplace is growing. However, too many businesses are not delivering on the promises they make to their workers, especially when it comes to cultivating new cultures (Hongchai and Weber 2023).

Therefore, there is an increasing recognition among individuals that modern firms need to embrace modern leadership concepts to effectively address such challenges. They must approach this task with utmost dedication by wholeheartedly adopting the fundamental attributes of leaders: flexibility in response to change, ingenuity in thinking, and the technical expertise that is of utmost importance in the contemporary work environment (Uhl-Bien and Arena 2018; Westerman et al. 2014).

Thus, the contemporary corporate environment, which is frequently characterized by uncertainty and fluctuation, is prompting a thorough investigation into the most effective leadership models. Scholars have conducted extensive research on the conventional concepts of leadership, which include both transformational and transactional leadership, particularly in the volatile, unpredictable, complex, and ambiguous (VUCA) context (Bennett and Lemoine 2014; Schoemaker et al. 2018).

However, the fundamental models demonstrate significant limitations when applied to VUCA scenarios. These models frequently struggle to understand the complex realities of VUCA situations and may lack the precision required to handle these environments. Highly stable and predictable environments shaped and practiced the ideals of transformational leadership—motivating and inspiring followers to achieve an even higher level of performance—as well as transactional leadership, which emphasizes structures, systems, and rewards as crucial elements for reaching goals.

The predominant dependence on a specific type of leader, namely visionary leaders, renders many of these models appear to be irredeemably obsolete. Ultimately, how many visionary leaders can an organization locate, particularly in a context characterized by the four fundamental forces of volatility, uncertainty, chaos, and ambiguity? Even where such leaders emerge, there is no assurance that their vision will be accurate, particularly in situations where change is the one consistent factor (Yukl and Mahsud 2010). As such, effective leadership in this new setting needs not just flexibility and resilience but also extraordinary resourcefulness (Johansen 2017; Uhl-Bien and Arena 2018).

Negotiating this “new normal” remains difficult, as the needs of VUCA, for both leaders and followers, deviate from prior expectations (Bennett and Lemoine 2014; Schoemaker et al. 2018). Indeed, these models, which generally might prioritize existing stability and predictability, find it difficult to engage with the intricateness and “wickedness” that many perceive to be present in the VUCA environments experienced by an organization (Johansen 2017; Kuncoro and Thaha 2023). A leader in a VUCA environment, on the other hand, has to cope with either strategy or uncertainty in ways that are more likely to yield successful results in achieving a desired future state (Schoemaker et al. 2018; Wilson and Doz 2011).

In contrast, adaptive leadership has become a more appropriate approach for managing VUCA scenarios. Heifetz et al. (2009) define adaptive leadership as emphasizing the obligation of leaders to possess flexibility and responsiveness to effectively handle swiftly evolving circumstances. This method encourages organizations to learn and evolve in response to difficulties. It is better suited to the needs of VUCA environments, where leaders must constantly adapt their tactics and processes to deal with the uncertainty and volatility of the situation. In addition, it is becoming more and more recognized that cutting-edge leadership, which encourages inventiveness and the probing of new ideas and technologies, is essential for maintaining a competitive edge, especially in today's environment (Anderson et al. 2014).

When turbulence strikes an organization, members can become disoriented and uncertain. They might even become defensive and strike out at one another or the leader. When times get tough, it is good to have leaders who shine a heliotropic light. Heliotropic leadership is about much more than simply “leading in a way that highlights the leader's positive aspects”. Indeed, it is rather like a flower's heliotropic behavior in the sun. It is about creating conditions that lead to the flowering of the organization's members and their well-being (Cameron 2012). A leader who maintains a heliotropic style under such circumstances has to draw on both courage and skills.

Adaptive leadership places significant importance on the qualities of adaptability and resilience, particularly when confronted with change that requires continuous problem-solving (Heifetz et al. 2009). Innovative leadership places great importance on fostering creativity and incorporating technology as essential elements for attaining effective organizational performance (Anderson et al. 2014; Westerman et al. 2014). Heliotropic leadership, a newly established concept, underscores the importance of firms demonstrating excellent

and even virtuous behavior at all levels, especially during challenging periods that could negatively impact employee morale (Cameron 2012; Burke and O'Brien 2021). In the contemporary corporate environment, these leadership paradigms are especially pertinent, as leaders are required to not only address current obstacles but also foresee and adjust to forthcoming intricacies.

These leadership traits are even more important, considering the most recent research. Boateng and Olexová (2023) recently found that an agile leader significantly enhances an employee's perception of an organization's adaptability and performance. Zhiyia and Hongye (2023) further corroborated the close relationship between innovative leadership and an organization's resilience.

Despite the potential techniques offered by these modern leadership theories for dealing with the difficulties of VUCA situations, there is a need for an integrated framework that incorporates their respective strengths. This study explores a comprehensive leadership strategy for VUCA situations, combining modern theories like adaptive, inventive, and heliotropic leadership into a single framework. The aim is to meet the unique requirements of complex and rapidly changing environments.

This study's main objective is to address the absence of comprehensive theory in leadership research. The purpose of this proposed framework is to offer both theoretical and practical value in businesses, specifically developed for professionals in leadership roles. The objective is to assist them in cultivating resilience, innovation, and adaptability inside their companies. Regardless of the particular environmental conditions under which the organization functions, these three characteristics are extremely advantageous to it. Yet, in the VUCA context, they are especially crucial. If nearly all, or perhaps the majority, of people within an organization exemplify this type of leadership, that company will not only endure challenging periods but also overcome them, emerging in a superior condition compared to its initial one.

Current leadership theories are frequently insufficient in portraying the ambiguous contexts in which leaders operate. Even though many leadership models have been researched and applied, there is still an unfilled gap when it comes to the integration of modern leadership theories into VUCA environments. Long-established models of leadership, such as transformational and transactional leadership, frequently fall short when it comes to tackling the urgent and unprecedented challenges imposed by rapid digital transformation and the complexities of modern organizations (Castillo and Trinh 2019). This article responds by proposing a new conceptual framework that effectively captures the essence of effective leadership across diverse contexts. By doing this, it goes beyond specific theories to find the similarities between many leadership model types and investigate how they connect and work together (Anderson et al. 2014; Brown and Treviño 2006).

This research employs a thorough literature review to comprehend leadership ideas. This framework is founded on a meticulous examination of the latest studies pertaining to innovation, technological leadership, and the established notion of "agility" in leadership. The goal is to enhance both the breadth and depth of our perspectives in these crucial areas (Cameron and Spreitzer 2012). It specifically highlights adaptable, innovative, and heliotropic leadership paradigms. The amalgamation of these ideas was executed through a multi-step process: (1) recognizing common elements across the theories, (2) synthesizing these elements into a cohesive framework, and (3) developing testable propositions that align with the characteristics of VUCA environments. The validity and significance of each concept were confirmed by empirical data obtained from recent investigations.

2. Contemporary Leadership Theories and VUCA

2.1. Traditional Leadership Models

Conventional leadership models are rigid, emphasizing stability and control via pre-determined strategies in foreseeable contexts (Kotter 2012). This method, while beneficial under stable conditions, can jeopardize companies when fresh ideas that challenge the status quo emerge (Edmondson 2019; Heifetz et al. 2009). Traditional top-down frame-

works frequently prioritize stability, operating inside domains of assurance. Nevertheless, in the presence of uncertainty, innovative ideas that contest existing hierarchies may be regarded as threats (Kane et al. 2015; Rigby et al. 2016). Although hierarchical authority was once dominant, modern leadership theories now prioritize flexibility, innovation, and technological integration to address today's complex environments (Northouse 2018; Millar et al. 2018; Uhl-Bien and Arena 2018). Effective leaders must coordinate, problem-solve, and adapt in ways that foster organizational success in these dynamic contexts (Heifetz et al. 2009; Dyer et al. 2011).

2.2. Key Components of Contemporary Leadership

Contemporary leadership theories offer a pretty strong and effective solution. They do not just offer a model that leaders can follow but that they can become, that leaders can contort, deform, push apart, stretch, mold, and remold in order to address their own leadership dilemmas (Avolio et al. 2014). The theories also enable leaders to improve their analytical skills and their ability to understand their team or organization (Uhl-Bien and Arena 2018), artfully draw upon a range of management techniques and tools, and employ reasoned and practical decision-making for managing themselves, their team, and their organization (Cameron 2012; Northouse 2018; Guerrero and Urbano 2021). Additionally, these contemporary approaches are essential for maintaining a competitive edge in VUCA environments (Zhiyia and Hongye 2023).

The rapidly developing market requires the constantly evolving generation of new ideas, processes, and even whole new economies. This new innovative leadership encompasses not just technological innovations but new innovative methods of problem-solving in general, as well as new business models and even new economic systems. The leadership we need today is not just about leading change; it is about being it. Innovation in leadership cannot happen unless the leader is also an innovator, and when it comes to being innovative, there are some key behaviors and other aspects of personality that seem to make a person more "wired" for creativity (Dyer et al. 2011; Eisenbeiß and Boerner 2013).

For example, Google's human resources policies encourage innovation and risk-taking. They have a product focus, as exemplified by the policy of allowing employees to spend 20 percent of their work time on personal projects. This policy, for instance, underpinned the creation of Google AdSense and has led to a number of other important Google products. To sustain innovation, Google regularly evaluates how well its management practices and organizational culture align with its goal of fostering the next big breakthrough (Steiber and Alänge 2013).

Similarly, Amazon cultivates a culture of experimentation that drives innovation through data-driven methods, enabling continuous iteration of its products and services. Teams across the company are encouraged to test and scale their ideas, which supports rapid innovation and informed decision-making even when failures occur (Kohavi et al. 2013). Recent studies suggest that this innovative leadership approach enhances organizational outcomes such as creativity, agility, and employee engagement, which are critical in today's dynamic environment (Lee et al. 2020; Tandon et al. 2024).

Being an agile leader means being able to respond promptly and effectively to situations that are constantly changing, especially in a VUCA world (Kane et al. 2015). Such leaders can think and act quickly. They can, when necessary, rapidly change plans and come up with entirely new ones. They can quickly make and correct their decisions. When leaders throughout an organization exhibit such agility, the organization benefits in a variety of ways (Boateng and Olexová 2023; Uhl-Bien and Arena 2018).

The phrase "technological prowess" describes how well a leader understands and uses digital technology to boost an organization's performance (Avolio et al. 2014). This is an element of effectiveness that is particularly important in our present-day economy. Most companies today heavily rely on digital tools for their work. Therefore, leaders that make use of such tools effectively empower their work teams to attain significant improvements in productivity and efficiency (Westerman et al. 2014).

Numerous studies show that leaders familiar with digital work methods generate significant returns through improved communication, better use of resources, and a turbocharged innovation engine (Westerman et al. 2014; Kane et al. 2015; Sebastian et al. 2020). In some way, most companies today exist in a tech-saturated environment. This is why business leaders must see technology as part of the larger business picture. Technology is not some separate thing that only “IT geeks” need to understand. It is an integral part of the modern business world (Sebastian et al. 2020; Wilson and Daugherty 2018).

3. Leadership in VUCA Environments

3.1. Challenges of VUCA Environments

The VUCA world presents enormous challenges to today’s leaders. Currently, the business environment is characterized by rapid and unpredictable changes. This environment, marked by volatility, uncertainty, complexity, and ambiguity, tests their abilities like few others. The conditions necessitate a departure from the conventional methods of leadership, clearly and most assertively on the part of the upper echelons (Bennett and Lemoine 2014; Schoemaker et al. 2018).

During the COVID-19 pandemic, executives must prioritize the continuity of their operations and focus on “emerging prospects”, even if those prospects are at present uncertain. Leaders must make quick and possibly even uncertain judgments to manage these new opportunities and challenges, and be courageous enough to try new methods if the old ones fail to succeed, since they may present new opportunities (Hongchai and Weber 2023).

When faced with uncertainty, leaders should create an environment that encourages adaptability and a continuous learning process (Kotter 2012). At the same time, such leaders also understand that failure is of pivotal importance in the innovation process. They recognize that, in certain aspects, acquiring knowledge from failure is the most efficient route to achieving success. An organization’s strategic goals may not expressly encompass the establishment of failure-oriented cultures. Yet, leaders must make a crucial commitment to renewal, rethinking, and growth (Edmondson 2019).

Having a solid comprehension of systems thinking and collaborative methods is essential for today’s managers. A leader must understand the overall system and how its many parts interact and influence one another (Senge 2006). The role of the leader is to guarantee the smooth functioning of the system and provide timely implementation of required modifications. For a leader, the most challenging aspect is to actively engage in the system in order to perceive its limits, which are frequently concealed and functioning beneath the surface. Once you can “see” the system, you can then move to the second part of the leader’s job: effectively using the influence you have to bring about the necessary changes (Senge 2006; Heifetz et al. 2009).

Situations that are lacking in clarity or certainty call for leaders who can steer the ship. An excellent leader in an uncertain situation is one who is very good at making choices that are not completely informed, and yet, pretty much always seem to work out. What is the big secret? These leaders possess an exceptional level of “ambiguity tolerance”. They are comfortable with ambiguity. The inevitable lack of information, characteristic of many strategic judgments, does not throw them off. And they are not paralyzed by the fog of war or the limitless number of alternatives that might be considered in any precarious situation in which a company might find itself. They are excellent at what they do (Lawrence 2013).

Leadership in VUCA situations calls for the abilities to adapt, be creative, and understand and leverage digital platforms. While it is certainly true that being agile and innovative are vital traits of a leader, it is being adaptable, creative, and technologically literate that really drives companies through the massive and ongoing changes that are ever-present in their external environment (Sebastian et al. 2020; Wilson and Daugherty 2018). Technological improvements are primarily what we focus on when we think of digital transformation, but being a truly digital leader means more than that. It means using

technological advances in ways that create superior company performance (Westerman et al. 2014).

Modern leadership must include disruption and digitalization on top of the conventional VUCA characteristics, making it “D-VUCAD” (Kuncoro and Thaha 2023). Technological developments, market shifts, or global events can cause disruption. These changes may necessitate a reevaluation and potential adjustment of previously successful business strategies. Simultaneously, it is imperative to incorporate technology into all aspects of operations in order to generate favorable effects on the potential for enhanced economic prospects and increased productivity (Verhoef et al. 2021). However, it is only feasible to reimagine your task when each member of the team possesses a remarkable vision of how their variation of next-generation work should be perceived (Hongchai and Weber 2023).

3.2. Adaptive Leadership Approaches

Today’s VUCA world mandates a shift from traditional, top-down ways of leading to those that effectively manage change in adaptive and heliotropic ways (Burke and O’Brien 2021). Most leadership approaches that are still based on very vertical, hierarchical ways of organizing are just too slow, too cumbersome, and too isolated from both the top and the bottom (Kotter 2012; Hongchai and Weber 2023).

Simultaneously, the majority of people in most organizations are struggling to keep up with the rapid pace of change they are experiencing due to the numerous and formidable obstacles that impede their efforts (Denning 2018). And, even when the pace of change slows down for organizations, it keeps a pace that makes it challenging for most individuals in organizations to find even the temporary relief that can come from working “in the zone” in a productive way. Thus, a distinct kind of leader is required in a VUCA setting who can effectively navigate the followers through the complex situation by ensuring clear direction and clarity amidst the changing circumstances. And by leading, they help their teams to maintain momentum and energy in a shifting business landscape.

An adaptive leader’s key characteristic is the ability to diagnose the essence of a problem that requires a different solution, as well as the ability to make the work of solving the problem intelligible and legitimate to the people involved in going through the solution process. The adaptive leader is a kind of catalyst and choreographer for problem-solving processes that require changes in the behavior, values, or other performance characteristics of the people or groups involved (Heifetz et al. 2009).

Adaptive leadership relies heavily on a leader’s capacity to handle conflict and ambiguity (Northouse 2018; Uhl-Bien and Arena 2018). In order to make advancements during challenging periods, leaders must challenge themselves and establish an environment where individuals may engage in discussions and derive insight from their differences. In this process, adaptive leaders prompt and guide a set of vital conversations (Heifetz et al. 2009). Unlike technical leaders, who typically seek immediate resolution to problems based on standard operating procedures, adaptive leaders are more likely to be involved in decision-making processes that require conversation and the reconciling of divergent points of view (Northouse 2018; Heifetz et al. 2009).

3.3. Heliotropic Leadership

Heliotropic leadership is a leadership style that emphasizes promoting positive conduct within an organization. It increases energy and uplifts teams by emphasizing virtues and positive outcomes (Cameron 2012; Burke and O’Brien 2021). This leadership style is so named heliotropic because it imitates the inherent alignment of a plant towards the sun. Heliotropism is the plant’s directional growth in response to sunlight; it is a behavior that allows plants to maximize their exposure to light for photosynthesis (Darwin 1880). Conventionally, we associate this behavior with plants and flowers as they mature and extend towards the sun. Irrespective of their position, they align with the sun to fully exploit illumination and warmth (Cameron 2021).

Leaders use this notion metaphorically to create a conducive atmosphere that fosters positive relationships, boosts employee morale, and encourages resilience, guiding the organization towards favorable results and continuous development, even in the face of situational uncertainty or adversity (Cameron 2012). This leadership model focuses on fostering a positive organizational culture by encouraging behaviors that lead to flourishing and well-being.

Heliotropic leadership practically involves fostering an environment that encourages employees to concentrate on their strengths, optimism, and purpose. Leaders practicing heliotropic leadership aim to cultivate a workplace that nurtures positive relationships, enhances employee morale, and promotes resilience in the face of challenges. The goal is to steer the organization towards the “light” of positive outcomes and sustained growth, even in uncertain or adverse conditions (Cameron 2012; Cameron et al. 2004; Dutton and Spreitzer 2014).

Leaders who are heliotropic cultivate positive and engaged cultures, and within VUCA environments, this is essential to maintaining group resilience (Cameron and Spreitzer 2012). Heliotropic leadership is not quite about being positive in a Pollyanna way; it is really about focusing on the positive while still authentically acknowledging the negative and then using that focus to foster positive changes within the group (Carmeli et al. 2015). Even in adversity, heliotropic leaders help the group maintain a particularly positive and productive outlook (Burke and O’Brien 2021).

Cameron (2012) describes heliotropic leadership as a fundamental principle in positive leadership, which focuses on the intentional creation of environments that foster high-quality connections, positive emotions, and psychological safety. This approach aligns with the broader principles of positive organizational scholarship, which emphasizes the study and application of positive dynamics within organizations (Cameron and Spreitzer 2012). Furthermore, Dutton and Spreitzer (2014) explore the application of heliotropic principles to boost employee engagement, resilience, and overall organizational performance.

4. Empirical Research Review

Overview of Existing Studies

Studies that base their conclusions on evidence find that theories of leadership that emphasize agility, innovation, and technology tend to be the most effective at boosting the VUCA learning environment of organizations (Palanski et al. 2014; Prajogo 2021). Resilience is a quality that allows leaders to negotiate that learning environment, and it is already in place in the increasingly recognized “resilient organization” (Boateng and Olexová 2023).

The agile leadership approach highlights leaders who are quick to respond, who can smoothly move through changes when they hit, and who know how to learn lessons from them. Uhl-Bien and Arena’s (2018) study effectively demonstrates the effectiveness of agile leadership. An agile leader leads an organization more likely to survive and thrive in the face of disruptions (Dyer et al. 2011).

The recent study has further emphasized the importance of these components. Zhiyia and Hongye (2023) conducted a study that drew attention to how vitally important technological expertise is to stimulate innovation and adaptive change. Similarly, Zhiyia and Hongye (2023) carried out a study that emphasized the value of innovation in holding to a sustainable competitive edge, particularly when faced with VUCA circumstances.

The study by Wageman et al. (2012) adds to this body of evidence by showing that the value of an agile leader and the practices that go along with them become very clear when they are in charge of a work unit, especially when the situation is complicated or when people are far away (Edmondson 2019; Heifetz et al. 2009).

Unique and forward-thinking individuals flex their creative muscles. Businesses led by creative and forward-thinking individuals tend to be more prosperous and responsive to their ever-shifting surroundings (Guerrero and Urbano 2021). Indeed, the data substantiate that firms helmed by innovative leaders are more likely to see success across a range of metrics (Anderson et al. 2014; Kane et al. 2015).

Multiple studies have recently verified the significance of these leadership qualities. For instance, a study by [Tandon et al. \(2024\)](#) demonstrated that agile leadership significantly enhances organizational resilience in VUCA conditions. The additional leadership quality of innovative leadership has gained new-found attention thanks to [Boateng and Olexová \(2023\)](#) work. Their study emphasized the importance of innovative leadership in tandem with the more familiar concept of leadership to create necessary business strategy climates ([Zhiyia and Hongye 2023](#)).

[Eisenbeiß and Boerner \(2013\)](#) conducted a similar investigation and found that transformational leadership is most associated with innovative behavior in groups. This is because the characteristics of transformational leaders such as charisma, inspirational motivation, individualized consideration, and intellectual stimulation tend to result in a climate of openness and knowledge exchange that is conducive to both incremental and radical forms of innovation ([Colbert et al. 2016](#)).

Companies with leaders who understand both digital technologies and how to effectively rally resources and inspire employees to use those technologies are the ones that outperform in today's complex business world ([Kane et al. 2015](#)). [Westerman et al. \(2014\)](#) looked at what it takes for organizations to undergo digital transformations and what role leadership needs to play. [Sebastian et al. \(2020\)](#) found that "technologically talented leaders" recognize the need for more than just proficiency in using digital tools; they must also be able to generate the necessary energy and momentum for the effective use of these tools across the enterprise.

Moreover, today's leaders are required to shift from being knowledgeable about hardware to analyzing information effectively and using that analysis to take the most appropriate action. Contemporary leadership means being competent in using the tools of technology to lead for the organization's outcomes ([Wilson and Daugherty 2018](#); [Duan et al. 2019](#)). Too often, leaders think that because they have access to information and data, they are using technology effectively. In contrast, leaders at the forefront of their leadership offer organizations and their units clear, unambiguous instructions for using technology to generate the coveted conditions for transformation ([Kane et al. 2015](#)).

5. Methodology

This paper presents a conceptual framework for integrating adaptive, inventive, and heliotropic leadership models in VUCA situations. Verifying the consistency and interoperability of the components of this integration is a vital component of the study's methodology, which includes several necessary phases. This study employs the PRISMA framework (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) for the literature review, following the technique established by [Moher et al. \(2009\)](#). This study used the PRISMA framework to examine pertinent literature, concentrating on research publications from the last 20 years about leadership in VUCA contexts. This study examines leadership within a dynamic and intricate context, including adaptive leadership, innovative leadership, heliotropic leadership, organizational flexibility, and positive organizational behavior.

A systematic review of academic databases, including Scopus, Web of Science, and Google Scholar, was undertaken to commence the evaluation process. The investigation concentrated on research publications published during the past twenty years that specifically pertain to leadership in VUCA contexts. The search phrases utilized encompassed "leadership in a dynamic and complex organization", "adaptive leadership", "innovative leadership", "heliotropic leadership", "organizational adaptability", and "positive organizational behavior".

This review selected the included research based on their pertinence to the various subjects it addresses. The selection of these papers adhered to rigorous inclusion and exclusion criteria, ensuring that only research closely matched with the target areas was evaluated. A thorough examination of certain scientific papers was performed to identify significant themes and repeating patterns that influenced its results.

This study synthesizes many leadership ideas in a manner that is both pragmatic and intellectually sound. It accomplishes this by clearly delineating the fundamental components of each leadership style and demonstrating the significance of each in addressing the complex challenges of the VUCA environment. The methodologies utilized in the study guarantee that the resultant theoretical framework and conclusions are relevant to contemporary literature and directly applicable to the practical needs of organizations functioning in VUCA situations.

6. Integrated Theoretical Framework and Research Propositions

In today's dynamic, unpredictable, complicated, and uncertain corporate environments, proficient leaders must cultivate and acquire vital talents to succeed in their careers (Cameron and Spreitzer 2012; Uhl-Bien and Arena 2018). Leaders in VUCA contexts can gain advantages by using adaptive, inventive, and heliotropic leadership theories to enhance their viewpoint and techniques for addressing diverse difficulties (Mishra and Jha 2017).

This strategy underscores the necessity for flexibility, diversity, and the development of forward-looking competencies at the upper echelons of the organization. The effectiveness also relies on imaginative and technologically adept leadership that effectively reinforces the expectations set by the company's upper management for its intermediate levels through appropriate organizational behavior.

This research employs contemporary theory and empirical data to assert that adaptable, inventive, and heliotropic leadership styles may assist individuals in navigating the challenges of VUCA situations in seven distinct ways. Each assumption is meticulously delineated, accompanied by a relevant and specific array of theoretical and practical implications.

6.1. Agility

Adaptive leadership prioritizes flexibility and anticipatory actions in reaction to change, especially within VUCA contexts. Research underscores the necessity for leaders to have enhanced agility, problem-solving abilities, and efficient strategies (Uhl-Bien and Arena 2018). Agile methodologies empower firms to rapidly make judgments and adjust to novel circumstances, therefore attaining their objectives in intricate and uncertain contexts (Boateng and Olexová 2023).

Proposition 1. *Adaptive leadership behaviors will positively influence an organization's ability to navigate VUCA environments.*

Heifetz et al. (2009) assert that adaptive leadership is crucial in contexts marked by ongoing change and uncertainty. Executives who foster a culture of adaptation may significantly mitigate unforeseen shocks inside their firms. Effective leaders in VUCA environments guide firms by enabling teams to make rapid evaluations and modify strategies, therefore maintaining stability amid uncertainty.

The empirical findings of Uhl-Bien and Arena (2018) emphasize the efficacy of adaptive leadership in enhancing strategic resilience and fortifying operational resilience in companies, corroborated by analogous research (Kuncoro and Thaha 2023).

6.2. Innovation

An innovative leadership style fosters unusual thought and swift technical progress, resulting in creative solutions to intricate problems. Anderson et al. (2014) assert that organizations led by inventive CEOs are more likely to thrive in complex environments due to their exceptional capacity for innovation and adaptation to technology advancements. The study by Westerman et al. (2014) highlights the importance of technology expertise in steering firms through digital transformation, a vital component for maintaining a competitive edge in constantly changing markets.

Innovation refers to the critical ability to generate novel ideas, approaches, and products that are essential for maintaining a dominant position in a rapidly evolving market. Leadership that displays and promotes innovation fosters an environment of fresh, imaginative thinking (Anderson et al. 2014; Guerrero and Urbano 2021). This kind of leadership is what pushes the boundary of the next big thing. This leadership not only innovates in technology but also advocates for breakthroughs in problem-solving techniques, organizational processes, and business models (Anderson et al. 2014).

Proposition 2. *Emphasizing innovation and technological integration will enhance organizational resilience and competitiveness.*

The foundational work of Anderson et al. (2014) on innovation leadership, coupled with the findings of Westerman et al. (2014) on digital transformation, provides robust support for this proposition. Technological expertise is a key aspect of leading organizations through digital transformation, say Westerman et al. (2014). These same authors also stress that it is not going to be enough just to get by in this new, digital world; they insist that leaders have to be innovative if they are going to make a difference and use technology to solve the complex problems of the day. Moreover, leaders must have sufficient technological acumen to integrate and work effectively in using technologies that enable innovation in their organizations; the research by Hanna et al. (2011) suggests that such integration is one of the conditions leading to improved innovation and marketplace performance.

6.3. Technological Prowess

The term “technological prowess” means that a leader has the understanding, capability, and power to make digital technology a real asset to an organization (Rohrbeck and Kum 2018). Today’s leaders must know how to use digital tools to save time, enhance communication, and enable innovation to improve the performance of a company, especially in VUCA business situations (Sebastian et al. 2020; Wilson and Daugherty 2018).

Proposition 3. *Leveraging technological prowess will significantly improve an organization’s agility and performance in VUCA environments.*

Studies undertaken by Sebastian et al. (2020) and Wilson and Daugherty (2018) have demonstrated that competent CEOs in digital technology can significantly improve the adaptability and versatility of their company. These academics emphasize the substantial influence of technology in enhancing strategic adaptability inside organizations. Moreover, proficiency in using digital technologies enables leaders to effectively navigate the complexities of VUCA environments, therefore enhancing their leadership effectiveness at all levels of the organization (Duan et al. 2019; Westerman et al. 2014).

6.4. Inclusivity and Strategic Foresight

Inclusive leadership involves the recognition and embrace of a wide range of viewpoints, therefore facilitating enhanced decision-making and problem-solving. Carmeli et al. (2015) emphasize that inclusive leadership fosters engagement and innovation by establishing an environment that supports and appreciates the contributions of all individuals within the organization. Research by Nishii and Mayer (2009) supports this proposition by showing that inclusive practices positively affect organizational performance and employee engagement.

Leadership that includes everyone is all about appreciating and acknowledging many different points of view (Shore et al. 2018). It can make the process of solving problems and making decisions seem lengthy, but in reality, the result is much higher in quality (Ferdman and Deane 2014). When you work in an inclusive environment, not only do you feel powerful to make a difference, but you also feel valued for your presence in the workplace. Diverse organizations have told us repeatedly, and science has backed this up,

that when all their employees are at the table in a decision-making process, they make better decisions (Carmeli et al. 2015; Nishii and Mayer 2009).

Proposition 4. *Inclusive decision-making and follower empowerment will foster organizational commitment and innovation.*

Carmeli et al.'s (2015) work research supports this proposition by emphasizing the role of inclusive leadership in fostering engagement and innovation. The work of Carmeli et al. (2015) underscores the importance of inclusive leadership in generating a climate that supports and engages everyone in the organization. Numerous studies have found that the effect of inclusive leadership ripples through an organization to positively affect the engagement of team members (Nishii and Mayer 2009). The potent effect of practices and behaviors that create an inclusive work environment raises a question: why is every leader not an inclusive leader? (Roberson 2019).

6.5. Building a Learning Organization

A learning-oriented culture is crucial for maintaining adaptability in VUCA environments. The systematic review by Edmondson (2019) and Garvin et al. (2008) demonstrates that organizations that foster continuous learning and development are better equipped to respond to challenges and maintain resilience. By encouraging continuous learning, leaders can ensure that their teams are always ready to adapt to new situations and challenges.

The 2015 study by Carmeli, Dutton, and Hardin focused on inclusive leadership in the workplace. It examined the very nature of the work environment and the kinds of spaces leaders can create when practicing inclusive leadership. Nishii and Mayer, in a 2009 study, found two things that back up this study: first, employees feel much more valued and empowered to share their unique perspectives in inclusive workplaces when compared to workplaces where inclusive practices are not common; and second, that there is a clear link between inclusive practices and the overall performance of an organization. So, inclusive leadership not only benefits individuals, but it also helps an organization to perform at its best (Carmeli et al. 2015; Nishii and Mayer 2009).

Proposition 5. *Providing continuous learning and growth opportunities will enhance organizational adaptability and resilience.*

Systematic reviews by Edmondson (2019) and Garvin et al. (2008) demonstrate the critical role of learning organizations in maintaining adaptability and resilience.

Fostering individual learning leads to the development of what Edmondson (2019) calls a “resilient organization”. For a learning organization to exist and be effective, the individuals within it must know how to learn. Individuals in such an organization must not only be able to listen and give positive responses but must also be able to critically reflect on those responses as part of a continuous improvement process. They must be able to learn how to do better. A learning organization can take in VUCA conditions, attend to them sufficiently, and respond well enough in real time to not only deal with the immediate challenges but also learn from those challenges to improve its effectiveness in future instances (Garvin et al. 2008).

6.6. Alignment with Generational Values

To effectively engage and retain employees from newer generations, such as Millennials and Generation Z, it is crucial to comprehend and conform to their beliefs. The research conducted by Twenge (2017) and Wiedmer (2015) emphasizes the need for synchronizing leadership strategies with the principles upheld by younger generations, who highly prioritize diversity, inclusiveness, and achieving a healthy work–life equilibrium. Organizations that adhere to these principles typically exhibit reduced staff attrition and increased employee involvement.

Proposition 6. *Incorporating new generational values into leadership techniques can improve employee engagement and retention.*

To attract and retain Millennials and Generation Z, leaders must demonstrate competence and understand their unique characteristics, fostering an inclusive work environment that accommodates a diverse workforce. Twenge (2017) and Wiedmer (2015) suggest understanding generational differences in professional settings can reduce staff turnover and increase employee engagement, indicating that embracing younger values can lead to these benefits.

6.7. The Effect of Heliotropic Leadership

Heliotropic leadership promotes positive organizational behavior by prioritizing strengths, optimism, and progress, supported by Cameron's (2012) study and Burke and O'Brien's (2021) analyses. Heliotropic leadership fosters a resilient corporate culture by establishing a sense of purpose and well-being within the organization, encouraging individuals to focus on positive performance.

The heliotropic leadership model encourages and drives organizations to exhibit positive behaviors by highlighting their best qualities and projecting an optimistic view of the future (Cameron 2012; Burke and O'Brien 2021). Like heliotropism, where a plant grows toward the most intense light, heliotropic leaders try to ensure that their teams direct their focus toward positive organizational opportunities. As the intensity of the light increases, the heliotropic structure in the plant exhibits more strength and size, resembling a robust and dynamic organization (Cameron 2012).

Proposition 7. *Heliotropic leadership will enhance organizational resilience and strategic foresight through positive organizational behavior.*

The research by Cameron (2012) on positive leadership, along with the analysis by Burke and O'Brien (2021), establishes a strong theoretical and empirical basis for this argument. Cameron (2012) emphasizes the creation of a positive and resilient company culture under the guidance of heliotropic leaders. A study by Cameron and Spreitzer (2012) highlights the positive impact of heliotropic leadership on organizational resilience, highlighting its significance, purpose, and intention.

7. Discussion

This study has demonstrated the theoretical soundness and empirical verification of the proposed framework for leadership in volatile, uncertain, complex, and ambiguous contexts. This framework synthesizes contemporary literature and research on flexible, innovative, and heliotropic leadership strategies, providing a comprehensive and resilient platform for effectively addressing challenges in such contexts.

Uhl-Bien and Arena's (2018) empirical assessment highlights the essential function of adaptive leadership in leading firms toward resilience. This immediately corroborates Proposition 1, which asserts that adaptive leadership practices will enhance an organization's capacity to maneuver through VUCA conditions. Heifetz et al. (2009) assert that adaptive leadership is crucial for effectively navigating the unpredictability characteristic of VUCA contexts. Recent studies demonstrate that firms led by adaptable CEOs are better equipped to navigate unforeseen obstacles and maintain equilibrium (Kuncoro and Thaha 2023). These studies offer unequivocal empirical evidence that adaptive leadership enhances resilience, establishing it as an essential element of leadership in VUCA environments (Bennett and Lemoine 2014).

The research by Anderson et al. (2014) highlights the critical role of leaders in an organization's creative processes, particularly during the age of technology. Proposition 2 asserts that prioritizing innovation and technology integration improves organizational resilience and competitiveness, as evidenced by Westerman et al. (2014) and Hanna et al. (2011).

The authors elucidate how creative leadership directly and favorably influences the development of a creative culture and the effective incorporation of technology inside an organization, particularly in professional businesses. [Guerrero and Urbano \(2021\)](#) demonstrate that prioritizing innovation enhances an organization's likelihood of maintaining a competitive edge in a rapidly evolving market.

Heliotropic leadership, which stimulates constructive organizational behavior and cultivates a supportive workplace, is essential for sustaining employee morale and participation during periods of uncertainty. This backs up Proposition 3, which asserts that heliotropic leadership bolsters organizational resilience and strategic foresight via good organizational behavior, as articulated by [Cameron \(2012\)](#) and [Burke and O'Brien \(2021\)](#). The empirical findings from [Cameron's \(2012\)](#) research work on positive leadership and [Burke and O'Brien's \(2021\)](#) study consistently indicate that heliotropic leadership is essential for establishing and maintaining resilient organizations. This is particularly applicable in firms experiencing constant change and stress, where effective leadership fosters a flourishing workplace culture ([Cameron and Spreitzer 2012](#)).

The suggested approach underscores the significance of inclusivity and is founded on robust research evidencing the efficacy of inclusive behaviors. Proposition 4 asserts that inclusive decision-making and the empowerment of followers would enhance organizational commitment and creativity ([Carmeli et al. 2015](#); [Nishii and Mayer 2009](#)). This study demonstrates that these methods not only improve decision-making but also elevate organizational performance. Inclusive leadership that embraces multiple viewpoints significantly enhances worker engagement and stimulates substantial innovation. Inclusive leaders are more inclined to incorporate other perspectives in their leadership, hence enhancing creativity and performance ([Shore et al. 2018](#)).

Recent literature endorses the notion of technical competence and its influence on leadership effectiveness in VUCA environments. Proposition 5 posits that utilizing technical expertise will markedly enhance an organization's agility and performance ([Sebastian et al. 2020](#); [Wilson and Daugherty 2018](#)). Research by [Sebastian et al. \(2020\)](#) and [Westerman et al. \(2014\)](#) highlights the critical significance of technological expertise for chief executive officers aiming to maneuver through the intricate and swiftly evolving corporate landscape of today. Furthermore, studies indicate that executives proficient in digital technologies may markedly enhance a company's adaptability and efficiency, corresponding with the necessity for agility in fluctuating surroundings ([Duan et al. 2019](#)).

The suggested paradigm is also corroborated by recent studies conducted by [Zhiyia and Hongye \(2023\)](#) and [Boateng and Olexová \(2023\)](#). The findings emphasize the necessity for firms to possess inclusive leaders to provide resilience in uncertain, hyper-globalized, high-tech, and fast-paced contexts. Moreover, empirical evidence indicates that the adoption of inclusive leadership practices enhances both staff engagement and retention. Proposition 6 asserts that integrating contemporary generational values into leadership strategies will enhance employee engagement and retention ([Twenge 2017](#); [Wiedmer 2015](#)). This is especially applicable to the younger workforce, which is increasingly varied and thus places a high premium on diversity and inclusiveness in the workplace. Studies by [Wiedmer \(2015\)](#) show that inclusivity plays a vital role in engaging younger generations, ensuring a more loyal and motivated workforce.

Results confirm what we already knew: organizations need to help their employees become more technologically skilled to drive agility and, therefore, success in today's dynamically changing business environments. This aligns with Proposition 7, which emphasizes the role of continuous learning and creative cultures in enhancing organizational adaptability and competitiveness ([Edmondson 2019](#); [Garvin et al. 2008](#)). Thus, there is support for the idea that technical excellence is a critical aspect of leadership.

8. Implications

This study makes a significant contribution to the field of leadership. It achieves this by incorporating contemporary theories that are appropriate for VUCA environments.

This is crucial for comprehending how leadership can function effectively in environments characterized by volatility, uncertainty, complexity, and ambiguity. Therefore, the opportunity to conduct this study represents a chance to engage with literature that unpacks and sometimes reconstitutes theoretical knowledge of leadership.

This study advances theoretical knowledge of leadership in intricate, fast-changing settings. It does so by synthesizing together three relatively new theories—adaptive, creative, and heliotropic—and a version of the much older transformational theory to make a case for seeing and understanding leadership in this kind of light. That is, leadership can and should go beyond theoretical perspectives. Adaptive, innovative, and heliotropic perspectives on leadership that encompass technological proficiency, creative problem solving, and inclusionary practices ought to undergird our understanding of leadership.

This study recommends that managers who work in environments of constant change and uncertainty should concentrate on fostering adaptability and innovation in their organizations to counter the many pressures and demands of the ongoing revolution. If organizations are to prevail and prosper in these frazzling times, they must have a set of guidelines that can show them where they need to change and how to do it (Dyer et al. 2011). Evaluating the organization's core capabilities, not just its technologies, is an absolutely vital part of any strategy for fostering innovation (Garvin et al. 2008; Kane et al. 2015).

The framework underscores that what matters most for small and medium-sized businesses is their ability to think fast and be innovative. Agility and innovation are critical because the speed at which change happens in the business world is, if anything, a continuous acceleration. The same virtues hold for large firms, but here, “technology comes to the rescue” (Westerman et al. 2014; Sebastian et al. 2020).

To be effective, businesses must possess these attributes and ensure that they are at the heart of their overall game plan and value proposition to their stakeholders. Leaders cannot ignore a company's culture because it defines its value. Indeed, the very word “culture” seems to mean “the way we do things around here”. And when it is not virtuous, a firm cannot expect to produce virtuous results simply by decree. In essence, a productive culture is a critical ingredient for productive firms and their leaders (Carmeli et al. 2015; Nishii and Mayer 2009; Cameron and Spreitzer 2012).

9. Limitations and Future Studies

The present work introduces a comprehensive framework for leadership in VUCA settings, which incorporates adaptive, inventive, and heliotropic leadership models. A systematic strategy for handling VUCA circumstances is provided by the suggested framework. Nevertheless, it is crucial to acknowledge certain limitations of the research and possible problems in its execution. First and foremost, this study depends on a comprehensive literature review, which, while vast, may not include all relevant studies due to publication bias and the inherent limitations of the databases used. While the evaluation is thorough, the scope and availability of the included information impose limitations. The existence of publication bias and the absence of studies conducted in languages other than English may have unintentionally excluded pertinent research that could have directly influenced the results.

Depending only on prior literature could lead to biases linked to the selection of research methodology, thereby restricting the relevance of the findings. Moreover, the literature review overlooks the intricate and complex nature of leadership strategies, which are constantly changing and developing.

A further limitation is the restricted capacity to deploy the technology on an extensive scale. The predominant study referenced is based in Western leadership settings and theoretical paradigms. Although these paradigms provide significant insights, their relevance to non-Western or culturally diverse contexts is probably constrained. Presumably, the models fail to consider the cultural subtleties that impact the effectiveness of leadership in multinational corporations. Therefore, individuals who are required to implement particular leadership principles in international settings, rather than Western ones, may encounter

limitations in achieving desired outcomes due to the lack of universal applicability of these concepts.

The potential difficulties with applying the advised structure seem equally significant. In order to integrate adaptable, innovative, and heliotropic leadership styles, a company must exhibit a robust dedication to change and ongoing learning. However, for long-standing organizations directed by executives with established leadership styles and procedures, implementing such a transition may prove to be difficult. Given the importance of obtaining employee support for leadership changes to avoid opposition, it may appear precarious to propose that leaders embrace a more dynamic and inclusive approach. To what extent is the corporation truly equipped to engage in heliotropic actions?

In addition, the proposed framework has not been validated; thus, its practicality and efficacy need to be confirmed. Because it includes many leadership models, certain overlaps may occur that complicate the adoption process. For its practicality, a significant simplification of the framework is required. Ultimately, the framework must undergo validation through longitudinal studies and be firmly based on the leadership of real organizations to effectively guide those organizations toward enhancing the performance of their members.

Furthermore, the effectiveness of this framework depends on the company establishing a culture of ongoing learning and swift technological adaptability. Effective implementation of this approach requires significant effort and resources, particularly time and financial resources for training and technical support. These resources are scarce in companies without substantial financial resources. Furthermore, the framework presupposes that leaders possess or can cultivate the requisite skills to execute these several types of leadership. However, it is unfortunate that not all leaders possess the same level of ability to successfully execute the seamless integration of adaptive, inventive, and heliotropic leadership requirements of this model. Regrettably, this leadership lottery seems to ensure that high-capacity results will occur only on exceptional occasions.

In order to overcome these constraints, future research should conduct practical experiments on the intended framework in various business and cultural environments. They should consult tests to obtain valuable insights into the operational parameters and relevance of the framework in various cultural settings. Such testing should also provide a substantial understanding of the framework's suitability and use in a global cultural commons. Like any sound theory, the framework presented here may need revising when fresh research and practical implementation emerge.

10. Conclusions

This study emphasizes the significance of leadership skills in negotiating the VUCA environment, specifically focusing on agility, innovation, technical expertise, and heliotropic strategies. The suggested framework prioritizes organizational inclusion and adaptability, recognizing the importance of diversity and empowering people. This presents a comprehensive method for leadership in VUCA situations. It combines adaptive, innovative, and heliotropic tactics to improve the resilience, creativity, and well-being of the business while ensuring a cohesive element for the existing workforce. This entails a comprehensive integration of almost all environmental aspects encountered, particularly the significant dangers and opportunities evaluated and addressed.

It is essential to meticulously assess the limitations and challenges identified in this study before applying the framework in practical situations. Organizations must recognize the potential constraints related to cultural appropriateness, resource availability, and the varied skills of leaders to effectively implement the framework. Future research should focus on empirical analysis of the framework across many organizational settings to validate its effectiveness and explore methods to address implementation challenges. In conclusion, it is essential to see the proposed framework as an initial basis for additional investigation and improvement rather than a conclusive resolution. The suggested framework, although providing a solid theoretical basis for leadership in dynamic and intricate environments,

should act as a platform for more study rather than a conclusive answer. Subsequent inquiry and practical implementation will be crucial to enhance and substantiate the efficacy of the framework.

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