THE INFLUENCE OF INNOVATIVE LEADERSHIP ON TEACHERS' GREEN BEHAVIOR: THE MEDIATING ROLE OF PSYCHOLOGICAL CAPITAL

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Abstract

This study examined the interplay between innovative leadership, Psychological Capital, and teachers' environmentally responsible behavior in educational institutions. It discovered a strong positive link between innovative leadership and teachers' green actions, emphasizing leadership role in driving educational Sustainability. Furthermore, it established a significant connection between innovative leadership and teachers' Psychological Capital, which included self-efficacy, optimism, hope, and resilience, highlighting the need to cultivate innovative leadership among educational leaders for improved outcomes. Additionally, it found that teachers with higher Psychological Capital tended to engage more in eco-friendly behavior, emphasizing the importance of psychological resources in promoting Sustainability among educators. The study also revealed that Psychological Capital mediated the relationship between innovative leadership and green behavior, although there was a negative direct effect, emphasizing its role in encouraging eco-conscious actions. In conclusion, this research underscored the complex relationships between innovative leadership, Psychological Capital, and teachers' green behavior, offering valuable insights for educators and organizations aiming to promote environmental responsibility within educational settings. Future research in this field should focus on developing and implementing leadership training programs tailored to foster innovative leadership qualities among educational leaders. Additionally, exploring the role of psychological factors beyond Psychological Capital in influencing green behavior among teachers could provide a more comprehensive understanding of the underlying mechanisms.

Keywords: Innovative Leadership**.** Green Behavior**.** Psychological Capital

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Introduction

In recent years, the rapid expansion of industrial civilization has led to increased productivity but has also resulted in severe environmental issues, including ecosystem degradation, a decline in biodiversity, and more frequent natural disasters, which has raised widespread concern about environmental problems (Inauen et al., 2021), with repercussions extending to human health and well-being (Evans, 2019). Organizations have responded by proactively addressing environmental challenges (Wolff et al., 2018) due to growing apprehension about the long-term adverse effects of climate change and environmental deterioration (Aguinis and Glavas, 2012). Previous research has indicated that encouraging green behavior among employees can contribute to environmental improvement (Ashworth et al., 2021). Employee green behavior encompasses actions that personally contribute to environmental Sustainability within the workplace (Anderson et al., 2013), forming a collaborative effort between organizations and their employees (Tan et al., 2020).

Leadership has long been a focal point of study in the business world, with numerous theories and models exploring its various dimensions (Avery, 2004; Hames, 2007). To fully comprehend innovative leadership, it is essential to grasp the foundational principles of both leadership and innovation (Contreras et al., 2022). Leadership can be defined as the ability to inspire individuals to work willingly toward a common objective, incorporating persuasion to enhance an organization's goal achievement (Bill, 2012). Innovative leadership goes further by encouraging creativity and innovation, guiding collective effort toward meaningful goals, and inspiring voluntary contributions to achieve those goals (Jacobs Jong & Deanne, 2007).

Various definitions of leadership abound, emphasizing its role in motivating individuals to contribute to an organization's effectiveness and success (House et al., 2004). Another important aspect is leadership style, which encompasses a leader's methods and approaches to influence followers (Nabil et al., 2017). Leadership is also described as motivating others to achieve shared goals and objectives (Northouse, 2017).

Innovative leadership has become increasingly important in contemporary organizations, as it stands out from traditional leadership by encouraging creativity, adaptability, and forward-thinking (Thomas, 2007). Innovative leaders are pivotal in shaping organizational culture, fostering an environment conducive to creativity, and nurturing innovation among employees (Alblooshi et al., 2020). They champion team collaboration, organizational learning, and change acceptance (Sen & Eren, 2012).

The concept of innovative leadership has emerged in response to the evolving dynamics of the business world, where innovation is considered a powerful driver of performance (Mumford et al., 2002). Innovative leaders are visionaries who inspire employees by setting a compelling vision for a greener future, cultivating a culture that values creativity and innovation, and empowering employees to take calculated risks and experiment with new approaches (Kozioł-Nadolna, 2020). They understand the importance of allocating resources and supporting green initiatives, actively involve employees in environmental decision-making, and celebrate successes (Tanya, 2010).

Green behavior, encompassing actions related to conserving resources, recycling, reducing waste, and minimizing environmental harms, has gained significance as organizations recognize the link between environmental preservation and Sustainability (Kuo et al., 2012). Environmental consciousness and sustainable practices are increasingly important for organizations and individuals (Suheni et al., 2020). However, understanding green behavior within the workplace is complex and often unexplored (Jackson et al., 2021). It involves voluntary actions extending beyond job requirements (Organizational Citizenship Behaviors for the Environment) and task-related pro-environmental actions (Kim et al., 2014).

Psychological capital, comprising self-efficacy, optimism, hope, and resilience, is pivotal in influencing employee behavior (Luthans et al., 2010). Innovative leadership significantly contributes to developing and fortifying psychological capital, equipping employees with the mental resources needed to engage in green behavior (Ariratana et al., 2019).

Understanding the relationship between innovative leadership, psychological capital, and green behavior within educational institutions is crucial for fostering sustainability. This study explores these complex connections and delves into the mediating role of psychological capital in influencing teachers' green behavior. By shedding light on these intricate relationships, this research offers valuable insights for educators and organizations aiming to promote environmental responsibility within educational settings.

Leadership

Numerous studies have shown that leadership has gained increasing significance in contemporary businesses (Avery, 2004; Hames, 2007). The concept of leadership encompasses a wide array of theories and models, including behavioral theories, situational leadership theories (Fiedler, 1967), visionary and charismatic theories (Bass & Avolio, 1990), and theories focusing on power, influence, and competence (Dulewicz & Malcolm, 2005. However, to truly understand innovative leadership, it is essential to grasp the foundational

principles of leadership and innovation (Contreras et al., 2022).

The term "leadership" is multifaceted and open to various interpretations. Bill (2012) defines leadership as the capacity to motivate individuals to willingly work towards a common objective, incorporating the art of persuasion to enhance an organization's goal achievement. Leadership goes beyond merely willingness to work; it also encompasses creativity and innovation. Jacobs and Jong, Deanne (2007) characterize leadership as directing collective effort toward a meaningful goal while inspiring voluntary contributions to reach that goal. Process leadership further elucidates how leaders apply their knowledge, skills, and competencies to execute this process. Similarly, Bass (1990) defines leadership as a social influence process that mobilizes support and assistance from others to accomplish shared tasks and objectives.

Various definitions of leadership abound. House et al. (2004) view leadership as inspiring, motivating, or persuading individuals to contribute to an organization's effectiveness and success. Nabil et al. (2017) introduce the concept of leadership style, encompassing a leader's methods and approaches to influence followers, including guidance, control, and direction. Northouse (2017) characterizes leadership as the process through which an individual motivates others to achieve shared goals and objectives.

As described by Kesting et al. (2015), leadership encompasses distinct behaviors leaders display. To comprehensively define leadership, four fundamental dimensions—people, means, effects, and goals—should be considered to evaluate various leadership philosophies systematically. The "people" dimension emphasizes that leadership inherently involves a differentiation between leaders and followers. This distinction, whether explicit or implicit, temporary or permanent, forms the foundation of leadership. Without this differentiation, leadership loses its significance and purpose. In the "means" dimension, leadership primarily relies on a leader's ability to inspire or direct others through actions and techniques like coaching, empowerment, and service. Devoid of these actions, leadership cannot exist. Moving to the "effects" dimension, leadership's ultimate objective is to prompt followers to act in a particular manner or to guide them through techniques such as enhanced dedication, implicit convictions, and optimizing incentives. Leadership attempts devoid of tangible effects are ineffective and unproductive. The "goals" dimension underscores that leadership is inherently directed towards a set of objectives. These objectives range from broad ideas of desirable future goals to specific targets. Leadership invariably points toward a certain direction, and goals hold paramount importance in the context of leadership, particularly concerning the objective of innovation, as addressed in this review.

While extensive research has explored leadership and its various styles, Drucker's research (1985) underscores the crux of effective leadership: the power to persuade individuals to carry out specific tasks. Nzinga et al. (2021) highlight leadership as encouraging individuals to maximize their efforts in achieving organizational goals. Goetsch et al. (2006) stress that leadership entails motivating and inspiring individuals to collaborate toward goal attainment. Sen and Eren (2012) define leadership as formulating a shared vision, assessing internal and external conditions, and implementing leadership strategies to address challenges and meet individual and group needs. This definition aligns with innovative leadership, characterized by the ability to bring about significant change through novel strategies.

According to Naguib and Naem (2018), innovative leadership wields the power to shape an organization's vision and direction and influence how organizational stakeholders articulate innovation principles, which is considered a crucial element for a company's success and fostering innovation. Therefore, innovative leadership encompasses the capacity to drive substantial change and nurture organizational creativity. House and Aditya (1997) introduce an additional dimension, the contextual dimension, which includes the consequences and goals that shape the settings for various leadership styles. This dimension complements the four earlier dimensions and elucidates how different leadership styles manifest within specific contexts. These definitions collectively emphasize that being a leader transcends individual characteristics, position within an organization, seniority, or personal traits. Instead, it hinges on one's capacity to motivate others to achieve set goals. Leadership is a dynamic interplay of behaviors, goals, effects, means, people, and the contextual dimensions it operates.

Innovation and innovative behavior

Since the onset of the 20th century, innovation has gained significant recognition and become a prevalent subject of interest, extensively explored across many disciplines, including physics, sociology, Engineering, Economics, and business. Despite its extensive examination in diverse fields, innovation remains a complex and often misunderstood concept. Frequently, it becomes entangled with terms such as creativity, design, invention, and change, making it challenging to arrive at precise definitions that capture its true essence (Alharbi, 2021). In light of this, Wyrwa (2020) has underscored the pivotal role of innovation in driving growth and enhancing competitiveness within

contemporary firms. It represents a multifaceted phenomenon influenced by various variables, with leadership styles and internal factors related to employee engagement in generating, developing, and implementing novel ideas and job security standing out as the most significant determinants. Consequently, modern businesses are encouraged to evolve into dynamic institutions capable of adapting passively and actively, generating, implementing, and disseminating innovative ideas (Wyrwa, 2020).

Recent theories and practical insights emphasize that innovations arise from intricate interactions between units, organizations, and the broader business environment. In alignment with the dynamics of the modern economy, the evolution of innovation theories and processes signifies the continuous refinement of these phenomena. This evolution is expected to yield more sophisticated and precise innovation process models, as demonstrated by Kozio-Nadolna (2019). Following Nabil et al.'s perspective from 2017, innovation emerges as a multifaceted and intricate concept, encompassing the development of an innovation culture, practices, processes, and organizational adaptation. This multifaceted nature draw upon new scientific discoveries, technological advancements, and public research to realize benefits (Nabil et al., 2017). UNESCO, in 2014, categorized innovation into four distinct types. First, product innovation centers on introducing novel goods or services, prioritizing significant enhancements in technical specifications, components, materials, integrated software, user-friendliness, and other functional aspects. Second, process innovation pertains to refining the methods employed for delivering products or services by introducing substantial alterations in techniques, equipment, and software. The third category, marketing innovation, involves substantial changes in product design, packaging, placement, promotion, or pricing strategies. Lastly, organizational innovation focuses on adopting fresh organizational methods within a firm's business practices, workplace structure, or external relations (UNESCO, 2014).

As Drucker (1985) outlined, innovation transcends mere economic or social connotations; it extends to technological progress. It represents a deliberate, structured quest for change and a methodical evaluation of the possibilities associated with emerging social or economic trends driven by innovation. Jong and Deann (2007) expanded the definition of innovation, encompassing improvements and advancements in operational technologies, production processes (including those employed in services), novel organizational and managerial methodologies, progress in infrastructure development, and enhanced accessibility to information. Baregheh et al. (2009) clarified that innovation is a multistage process whereby firms translate ideas into refined products, services, or processes. In this view, innovation is an intricate journey with various stages, each contributing to transforming concepts into tangible and improved outcomes.

Alharbi (2021) categorized innovation into two overarching types: Value-added and exploratory. The former revolves around enhancing and refining existing concepts, resulting in relatively lower risk due to the foundational presence of the product or service. In contrast, exploratory innovation delves into uncharted territory, involving entirely new ideas or products, thereby incurring higher risk. Crucially, irrespective of the type, innovative ideas must inherently possess value to be deemed truly innovative. Moreover, Sen and Eren (2012) framed innovation as introducing novelty in various forms: ideas, products, services, methods, techniques, or inventions. This introduction of the new is driven by the imperative to address existing and anticipated future challenges while meeting the evolving demands of the public. Furthermore, Amabile et al. (2004) emphasized that innovation signifies the successful integration of inventive ideas within an organization. Notably, innovation demands creativity but does not hinge solely on creativity; it necessitates a comprehensive approach encompassing various facets beyond the creative spark. Bishop (2016) discerned four fundamental components characterizing innovation: Ideation, which serves as the inception point; Value generation, which entails the creation of enhanced offerings; Implementation, marking the execution phase; and Cooperation, signifying collaborative efforts. Collectively, these components delineate the framework through which a business revamps an existing product or service, endowing customers with augmented value.

Researchers and academics have extensively examined innovative work behavior (IWB), emerging as a multidimensional construct encompassing various stages and facets aimed at fostering innovation within organizations. At its core, IWB underscores employees' pivotal role in driving innovation across products, services, processes, and procedures, injecting innovative ideas that enhance organizational effectiveness (Mete et al., 2021). Innovative behavior is a pivotal concept intertwined with the broader landscape of innovation. Over the years, numerous researchers have thoroughly examined this concept to unravel its intricacies and establish measurement methodologies. Scott and Bruce (1994) advanced the notion that innovative behavior constitutes a multifaceted process, fusing creativity with tangible implementation. This multifaceted behavior encompasses a spectrum of actions, including ideas' inception, promotion, and subsequent implementation.

Janssen (2003) delineated innovative behavior as the deliberate act of creating,

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disseminating, and applying novel ideas within a workplace or organization, with a clear advantage extending to employees and the business. Its substantial focus and significance in recent years stem from its profound impact on achieving competitive advantages and enhancing organizational performance.

Coetzer et al. (2020) extended the view of IWB as a multifaceted, multistage construct encompassing several activities meticulously designed to elevate organizational innovation and performance. Furthermore, Bos-Nehles et al. (2016) cast IWB as a collection of individual acts driven by generating, processing, and applying new ideas to enhance how tasks and processes are executed, ultimately aimed at amplifying organizational effectiveness, success, and employee-driven innovation. Scott and Bruce (1994) additionally elucidated various processes linked to IWB, including idea generation, idea championing, and idea implementation. Effective execution of these processes hinges on employees' ability to perceive and comprehend which ideas possess uniqueness and align with the acceptance criteria established by their supervisors.

Anna et al. (2017) portrayed IWB as a conglomerate of actions individuals undertake to augment organizational effectiveness and performance, which entails introducing, processing, and applying new ideas across various domains, including new product concepts, technologies, procedures, and work processes. Amo Kolvereid (2005) conceptualized IWB as a proactive staff initiative striving to introduce cutting-edge products, services, markets, or similar innovations within the company's sphere. It encompasses intentional actions by employees to introduce or adapt fresh ideas, products, procedures, and processes within their respective roles, units, or organizations.

Various researchers and scholars have delved into the dimensions of Innovative Work Behavior (IWB), shedding light on its multifaceted nature. Scott and Bruce (1994) laid the groundwork by introducing three fundamental dimensions: idea generation, idea promotion, and idea realization. Building upon this foundation, Janssen (2000) and Veenendaal & Bondarouk (2001). Messman and Mulder (2012) made substantial contributions by introducing two additional dimensions: opportunity exploration and reflection. These dimensions emphasize the importance of exploring new avenues and engaging in thoughtful contemplation as integral elements of IWB. In Messmann's (2012) rendition, IWB metamorphosed into a multidimensional construct, encompassing five distinct stages: opportunity exploration (OE), idea generation (IG), idea promotion (IP), idea realization (IR), and idea reflection (Ref).

Kleysen & and Street (2001) articulated their perspective on IWB dimensions, encompassing opportunity exploration, generativity, formative investigation, championing, and application. These dimensions collectively portray the multifaceted nature of IWB and the diverse elements that contribute to its richness. De Jong & Den Hartog brought a fresh perspective into the mix by incorporating a novel dimension: idea exploration, infusing a sense of discovery into the IWB framework. This augmentation expanded the comprehensiveness of IWB as a concept. Further enhancing the IWB framework, Messmann & Mulder (2012) expanded the dimensions by incorporating idea reflection and realization, accentuating the importance of thoughtful introspection and the tangible execution of innovative ideas. Lukes (2017) contended that individual creativity constitutes the bedrock of innovation within organizations. Within the realm of IWB, a sequence of steps unfolds, commencing with idea generation, followed by the quest for relevant ideas, their implementation, communication, engagement of other stakeholders in the implementation process, surmounting challenges, and culminating in the measurement of outcomes. Leong & and Rasli (2014) delineated IWB into four interconnected behavioral activities, each crucial in augmenting employees' innovation capacity. These sets include problem recognition, idea generation, idea promotion, and idea realization, all working in synergy to empower individuals within the organization to drive innovation.

Innovative leadership

Today's organizations seek leaders who offer clear guidance to their subordinates and, more importantly, engage in collaborative efforts with them to achieve common objectives and nurture risk-taking and accountability skills. To establish trust with immediate and distant organizational environments, leaders must exhibit greater adaptability and the ability to respond swiftly to changes. Modern leaders are founts of innovative ideas, capable of discerning potential challenges and opportunities on the horizon. The contrast between traditional managers and the emerging generation of managers often referred to as "old-fashioned" versus "new-generation" managers, underscores these differences (Thomas, 2007). Leaders wield a substantial influence on various facets of organizational dynamics, including culture, learning, information exchange, and the innovative behavior of the workforce. They also shape organizational procedures that cultivate an environment conducive to creativity. Alblooshi et al. (2020) underscored the significance of innovative leadership, labeling it as one of the most critical styles that nurtures innovative behaviors among employees. This leadership style fosters formal and informal interpersonal relationships, instilling in workers the confidence and security to share ideas and propose changes. According to Sen & Eren (2012), innovative leadership embodies the process of effecting pertinent changes to solve problems and benefit individuals. It champions team collaboration, encourages organizational learning, empowers employees to participate in decision-making, offers support and resources for innovation, and fosters an environment that embraces change and risk. Business executives who adopt innovative leadership prioritize innovation, transforming concepts into tangible assets.

The concept of innovative leadership has arisen in response to the evolving dynamics of the contemporary business landscape, characterized by intense competition and heightened uncertainty. As Mumford et al. (2002) outlined, innovative leadership represents a departure from the traditional 20th-century perspective on organizational practices, which discouraged innovation, to the 21st-century perspective that places a premium on innovative thinking as a potentially potent driver of organizational performance and innovation. Innovative leadership is among the most influential factors driving innovation in contemporary business environments. Extensive research, as highlighted by Riza et al. (2020), has delved into this relationship, consistently concluding that innovative leadership plays a pivotal role in successfully implementing innovative endeavors within organizations. The impact of innovative leadership on fostering innovation has been underscored, recognizing it as an individual facet with a profound influence on business innovation, whether through direct or indirect means, often mediated by factors like organizational climate and culture. However, as articulated by Kozioł-Nadolna (2020), the role of a leader today has expanded beyond its historical boundaries. Leaders must be able to foster innovation, embrace a fresh outlook on leadership, and discard outdated notions of what it means to be a manager and a leader. Table 1 illustrates the novel roles under taken by innovative leaders in the contemporary landscape, emblematic of their distinctive characteristics (Table 1).

Innovative leadership aligns with achieving superior performance, driving effective organizational change, and cultivating an innovative business culture. It also provides a strategic direction regarding goals, principles, and policies (Agin & Gibson, 2010). However, Alblooshi et al. (2020) note that innovative leaders can understand the past, perceive the present, and foresee the future. They craft a vision to alter prevailing political, social, economic, and technological conditions to address current challenges, anticipate potential future issues, and meet the needs of individuals within organizations and across nations. Sultana & and Rahman (2012) posit that innovative leaders function as strategists who share a motivating vision, promote collective thinking, and prioritize stakeholder demands and input. Consequently, these leaders possess the acumen to recognize when innovation is imperative. According to Mamula et al. (2019), innovative leaders inspire others, possess a distinctive strategic vision, maintain a strong customer focus, and have the capacity to foster a culture of trust within their organizations through deliberate actions.

According to Ariratana et al. (2019), innovative leaders play a pivotal role in stimulating employees to conceive innovative ideas, products, services, and solutions, entailing the development of diverse leadership philosophies within organizations. An exemplary illustration is the competency model for innovative leaders devised by Gliddon (2010) at Penn State University, laying the foundation for innovative leadership. Innovative leadership emerges as a strategic approach to organizational development, enabling groups or organizations to align themselves with their missions or visions. Organizations must embrace creative thinking to maintain their ongoing success and competitiveness in an ever-evolving landscape driven by new technologies and methodologies. Additionally, Nabil et al. (2017) provide further clarity by emphasizing that innovation necessitates cultivating a culture that embraces change and appointing innovative leaders who inspire employees to recognize the importance of innovation and take the initiative toward achieving the organization's objectives. To facilitate the generation of creative ideas,

Table 1. Comparison between innovative leadership and traditional leadership.

#	Innovative Leadership	Traditional Leadership
1	Long-term outlook	Immediately prospective
2	Vision	Budgets and plans
3	Risk-taking	Risk avoidance
4	establishing new lands	Adapting current solutions
5	starting alterations	Stabilization
6	Increased commitment	Control and bureaucracy, rules and regulations, and guidelines
7	support for diversity	supporting consistency
8	rousing passion	Motivating rationality
9	Innovation-oriented	Routine-oriented
10	Employee as a strategic resource	Employee substitutability

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organizations require strong leaders who can create conducive environments motivate, and inspire their workforce. Moreover, organizations must foster a culture that welcomes change and encourages leaders to instill the imperative of innovation and heightened initiative in their teams. Furthermore, Budiningsih et al. (2018) highlight that innovative behavior is a cornerstone for individuals seeking to maximize their contributions within an organizational framework. Innovation substantially enhances an organization's ability to compete by pushing it to adopt novel approaches beyond conventional comfort zones. Within these constraints, innovative individuals leverage their creative ideas and concepts to enhance products or services significantly. Effective leadership in the realm of innovation necessitates the embodiment of five key characteristics, as identified by Bill (2012): a profound passion for innovation, a long-term perspective, the courage to embrace failure and derive lessons from setbacks; deep engagement with innovators; and the willingness to support and defend mavericks, even in the face of resistance from middle management.

Gliddon (2010) introduced the competency model for innovative leaders and elucidated the concept of innovative leadership. Innovative leadership is a strategic approach to organizational development, aiding groups and organizations in realizing their missions and visions. Organizations must harness creative thinking to ensure their continual success and competitiveness in a world marked by incessant change driven by new technologies and procedures. Moreover, Alharbi et al. (2021) delineate various characteristics associated with innovative leadership. These include a propensity for risk tolerance, particularly when introducing new products or services to the market, as well as the possession of domain expertise required for generating creative and innovative ideas. Effective, innovative leaders exhibit low anxiety, fostering a sense of security and comfort among their team members and demonstrating emotional stability, maintaining a cheerful workplace environment. Other key traits encompass confidence, action-oriented behavior, a commitment to serious play, collaboration, and meticulous attention to detail. According to Adjei (2013), innovative leadership amalgamates various organizational leadership philosophies to inspire employees to conceive original ideas and solutions. Innovative leadership is a form of leadership that motivates followers to work diligently and creatively toward a shared objective. It plays a pivotal role in cultivating the creative advantage essential for organizational success. Horth and Buchner (2014) assert that innovative leadership represents a strategy and philosophy that integrates diverse leadership philosophies to motivate and encourage staff members to generate products, services, and innovative ideas. In contrast, Lin et al. (2018) elucidate that this concept encompasses three key elements: facilitating, integrating, and directing. Facilitating enhances employee creativity, as actively participating leaders tend to be more creative. Integration combines the contributions of leaders and employees, while direction involves emulating the leader's vision. Innovative leadership significantly enhances Innovative Work Behavior (IWB) and organizational performance.

As outlined by Pakdeelao (2011), innovative leadership can be cultivated and ensured when leaders adhere to many standards. These standards encompass creative thinking, establishing an innovative culture and climate, a transformational vision, ethical considerations and accountability, effective risk management, and promoting team collaboration and participation. Prihantoro & and Soehari (2020) highlight that innovative behavior frequently revolves around the quest for, generation of, introduction to, and utilization of new "products," ideas, solutions, or practical technologies for human activities. This concept underscores the endeavor to identify opportunities, cultivate ideas, and seek support for translating novel concepts into action. Strong leadership substantially influences an organization's capacity to innovate. As posited by Sen & Eren (2012), creative leadership involves the provision of innovative contributions, such as concepts, strategies, techniques, processes, products, services, or discoveries, to address contemporary challenges and fulfill both short-term and long-term societal needs. Innovative leaders share common attributes, including leadership expertise, skills, values, and the ability to discern risks inherent in existing problems while anticipating their adverse future implications. They are dedicated to enhancing the economic, political, and social welfare of individuals and preserving the environment and the planet to foster a just society. These leaders possess a well-defined vision.

De Jong & Den Hartog (2010) outline five fundamental components of innovative leadership: possessing innovative thinking, harboring a desire for innovation, embracing diverse viewpoints and risks, establishing systems that facilitate innovation, and translating innovative ideas into practice. On the other hand, Deschamps (2008) elucidates that innovative leadership represents a relatively recent subcategory within leadership. As leadership itself can vary in its degree of innovativeness, not all leaders exert the same influence on an organization's level of innovation. An innovative leader is an individual who actively seeks innovation while also encouraging others to do the same. Such leaders exhibit insatiable curiosity regarding client needs, possess a high degree of empathy, and demonstrate the ability to anticipate wants. Moreover, Anand & and Saraswati (2014) elaborate that innovative leaders possess an array of

qualities and traits, including leadership prowess, skills, values, and the ability to recognize present threats and anticipate future adverse repercussions. They are also deeply committed and visionary in their pursuit of enhancing people's social, political, and economic well-being. Additionally, Contreras et al. (2022) present a set of characteristics indispensable for the innovational leadership style, drawing from a comprehensive literature review. This style is perceived as an amalgamation of practices and skills that leaders develop to support innovative behaviors among their workforce at the individual and collective levels. These attributes encompass fostering a safe environment for change, promoting learning processes, nurturing strategic thinking, being trustworthy and fair, exhibiting a people-oriented approach, providing support, recognizing and rewarding performance, conducting monitoring and adjustment activities, and stimulating a sense of belonging and gratification.

Mahafzah and Makahlah (2017) have concluded that the primary characteristics of innovative leadership in Jordanian universities encompass effective communication, adaptability to change, problem-solving prowess, a willingness to take calculated risks, and the promotion of creativity. Furthermore, Khairalla (2015) has identified several common traits associated with innovative leadership. These include a heightened sensitivity to identifying problems, the ability to generate a profusion of ideas, a proactive stance in expressing opinions and suggestions across various contexts, a determination to achieve objectives while taking responsibility, and authenticity marked by the capacity to break away from conventional thinking and generate innovative ideas. While in alignment with this perspective, Al-Akkad (2016) has emphasized key skills essential for innovative leadership. These skills involve developing the ability for conscious analysis to identify dimensions that aid in problem-solving, enhancing interest in others and meeting their needs while maintaining equitable interactions, a focus on strategic planning with attention to overarching objectives, adaptability to various variables and anticipation of abrupt changes, and lastly, the attributes of patience and self-control in turbulent situations, enabling a leader to concentrate on tasks despite pressure and distractions. Kesting et al. (2015) have determined that different innovation stages and types impose distinct demands on leadership styles. Both transformational and innovative leadership styles have been found to affect innovation significantly. According to Tanya (2010), becoming an innovative leader entails accepting challenges, fostering change through shared creativity and knowledge, instituting a professional learning system, making and systematizing decisions, ensuring digital access and infrastructure, and demanding accountability.

Sen et al. (2013) have posited that innovative leaders must possess a blend of implicit and explicit knowledge. Implicit knowledge encompasses social concepts, beliefs, intuitions, values, and imaginations, while explicit knowledge pertains to technical knowledge. Innovative leaders need to understand the issues confronting their followers to devise fresh approaches and solutions. To comprehend the how, what, and why of addressing a particular problem, they must be well-versed in the methodologies, rules, processes, concepts, and technology relevant to their organization. Furthermore, an innovative leader requires a range of values, talents, abilities, and willpower. Additionally, Alharbi et al. (2021) have outlined five steps leaders can take to become more innovative. These steps include relinquishing the notion of "best practices," expediting decision-making processes and empowering individuals to lead initiatives or tackle problems. Finally, Budiningsih and Soehari (2013) have underscored the significance of several leadership traits, including leadership in turbulent times, innovative leadership, leadership marked by high integrity, and a high emotional quotient (EQ), in anticipating changes in turbulent environments. Leaders must proactively manage change by encouraging novel ideas and innovations to confer a significant competitive advantage upon their1 organizations. The diagram of Innovative Leadership Strengthening for Survival Solutions in a Turbulent Environment can be visualized in (Figure 1)

Green behavior

In recent years, the Earth and its fragile environment have faced unprecedented risks, necessitating the establishment of protective policies and regulations (Wolff et al., 2018). This growing awareness has prompted organizations to recognize the vital link between environmental preservation, sustainability, and effectiveness (Kuo et al., 2012). Consequently, organizations have taken proactive measures to engage and motivate their employees to participate in pro-environmental behaviors, thereby enhancing their environmental performance (Afsar et al., 2018). However, while the interest in green behaviors has been steadily increasing, previous reviews on this subject have primarily focused on understanding the nature, causes, and consequences of such behaviors, leaving the operationalization of green behaviors largely unexplored (Francoeur et al., 2019). In this regard, Suheni et al. (2020) clarified that in the 21st century, there is a vision of widespread adoption of environmentally friendly behavior as a way of life for every individual. This vision aims to promote ecological equilibrium and support nature's and its inhabitants' thriving. Cultivating such environmentally conscious behavior, especially during early childhood, is considered a fundamental step in nurturing
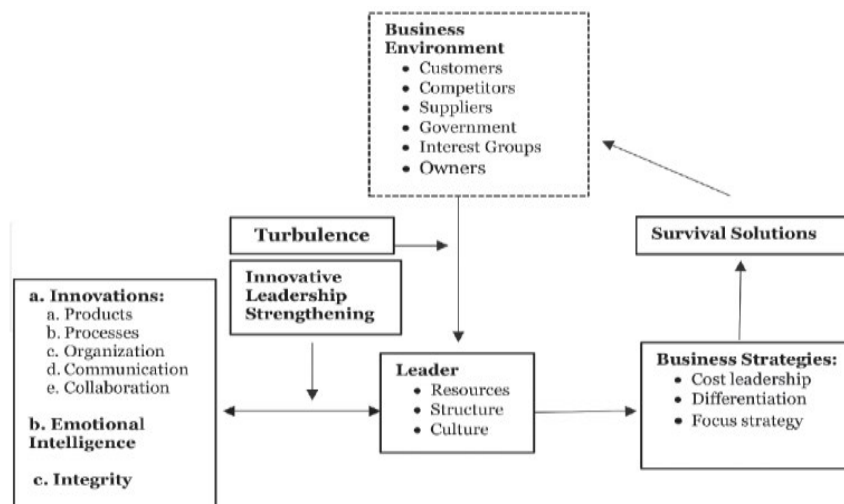
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Figure 1. Innovative Leadership Strengthening for Survival Solution.

a generation of adults deeply committed to preserving the environment. A crucial tool in this endeavor is project-based learning, which fosters children's critical thinking and problem-solving skills, ultimately shaping them into independent and environmentally aware individuals. Moreover, Asbari (2020) emphasizes the significance of instilling environmentally friendly behavior in children, recognizing them as the future generation responsible for a nation's progress or decline. Early childhood, marked by rapid development and heightened sensitivity to environmental stimuli, presents a unique opportunity for nurturing green behavior. Children in this developmental phase are active learners who thrive through hands-on experiences. Educators and parents can leverage project-based learning to cultivate green behavior in early childhood, an educational approach that stimulates critical thinking skills and fosters independence. This approach involves teaching children practical aspects of environmental preservation, such as water conservation, plant care, and responsible waste management. Pramono (2020) elucidates that observable environmentally friendly behavior manifests in everyday actions, such as maintaining cleanliness, practicing proper waste disposal, making sustainable dietary choices, and responsibly utilizing resources. This behavior is firmly rooted in ethics, reflecting moral principles that promote love and care for the environment. It is a testament to individuals' responsibility and concern for the environment, a quality considered essential for all.

The notion of green behavior within the workplace has been somewhat overlooked, even though decades of research have been dedicated to understanding how individual behaviors impact the environment. While environmental sustainability at the organizational level has received attention, there needs to be more focus on studying these behaviors within the workplace context. Interestingly, even within the same organization, employees display variations in their environmentally responsible behaviors, regardless of their specific job roles. It is imperative to comprehend the underlying reasons behind these variations, as they hold significance for organizations aiming for environmental sustainability, the collective efforts to address environmental challenges, and humanity's long-term survival on Earth (Jackson et al., 2021).

Green behaviors within the workplace can be broadly categorized into two groups: Organizational Citizenship Behaviors for the Environment (OCBE), which are voluntary actions that extend beyond job requirements, and task-related pro-environmental actions (Kim et al., 2014). These behaviors encompass actions related to conserving resources, recycling, reusing, reducing waste, and minimizing environmental harm. According to Zhang et al. (2021), green behaviors exhibited by employees are regarded as a form of positive organizational behavior, encompassing micro-level activities aimed at addressing environmental and sustainable development issues. These actions include recycling, resource conservation, active participation in environmental initiatives, and adherence to sustainable policies (De Roeck and Farooq, 2018).

According to Özsungur (2019), employee green behavior is a pivotal component of organizations' strategies to enhance environmental performance and achieve sustainable development goals. This behavior is defined as any measurable individual action within the workplace that contributes to environmental sustainability. Employee green behaviors encompass scalable activities that promote environmental sustainability, including water conservation, efficient resource utilization, waste reduction, energy conservation, and recycling. The primary objective is to align employee behaviors with the organization's environmental sustainability objectives. Additionally, it is essential to distinguish between behaviors that fall within an employee's job description (in-role) and those that go beyond their prescribed duties (extra-role). Furthermore, green behaviors can have direct and indirect impacts, with direct behaviors involving concrete actions like reducing energy consumption, while indirect behaviors encourage others in the organization to adopt environmentally friendly practices (Francoeur et al., 2019).

Furthermore, Personal Moral Norms (PMN) emerge as a direct predictor of employee green behavior. PMN represents individuals' moral standards and is influenced by their values and beliefs. The Value Belief Norm (VBN) theory posits that values lead to beliefs, creating a moral obligation that drives pro-environmental actions (Steg et al., 2014). Yang et al. (2020) assert that both pro-environmental and green behavior significantly mitigate environmental harm and contribute to environmental preservation. They argue that green behavior is driven by self-interest and environmental concerns at both the individual and organizational levels. Moreover, Perceived Behavioral Control (PBC), as Zierler et al. (2017) explained, plays a crucial role in predicting employee green behavior. According to the Theory of Planned Behavior (TPB), perceived control over a behavior influences intentions to engage in a behavior. PBC reflects individuals' perception of their ability and access to resources needed to perform a specific behavior. When employees feel confident and believe they have the necessary resources to engage in green behavior, they are more likely to practice Employee Green Behavior (EGB). In addition to personal moral norms, environmental knowledge (ENK) is another critical factor influencing employee green behavior. ENK refers to an individual's ability to recognize symbols, concepts, and behavioral patterns related to environmental protection based on acquired information. Organizations that provide ENK training to employees have been successful in promoting green behavior.

To provide a comprehensive framework for understanding and categorizing environmentally friendly behaviors in the workplace, a Content-Based Model of Employee Green Behavior, known as the Green Five Taxonomy, has been developed. While many people associate green behaviors with the 3Rs (Reduce, Reuse, Recycle), this taxonomy goes beyond that to encompass a broader spectrum of green actions at work. Jackson et al. (2021) have classified employee green behaviors into five major categories, as illustrated in (Figure 2), which are further divided into subcategories:

Conserving: This category focuses on actions aimed at avoiding wastefulness and preserving various resources, including water, energy, and natural resources. It includes behaviors such as Reducing Use, Reusing, Repurposing, and Recycling.

Working Sustainably: This category involves behaviors that enhance the environmental sustainability of work products and processes. It encompasses behaviors related to adapting work to minimize negative environmental impacts, including Choosing Responsible Alternatives, Changing How Work Is Done, Creating Sustainable Products and Processes, and Embracing Innovation for Sustainability.

Avoiding Harm: These behaviors revolve around preventing actions that cause long-term environmental harm, such as monitoring one's environmental impact and reversing damage to ecosystems. It includes both negative behaviors (harming) and positive behaviors (helping).

Influencing Others: This category focuses on behaviors that aim to spread sustainability practices to other individuals, both within and outside the organization. It includes Educating and Training for Sustainability and

Encouraging and Supporting environmentally sustainable behaviors.

Taking the initiative: This proactive category involves behaviors that challenge the status quo and go against societal expectations. It often requires personal risk or sacrifice. Taking the initiative includes Initiating Programs and Policies, Lobbying and Activism, and Putting Environmental Interests First.

The Green Five Taxonomy provides a comprehensive framework for understanding and categorizing employee green behaviors, enabling organizations to target better and promote environmentally friendly actions in the workplace (Figure 2).

Psychological capital:

Within positive organizational behavior, psychological capital has emerged as a pivotal and extensively explored area (Luthans et al., 2010). It encompasses essential positive mental attributes, including self-efficacy, optimism, hope, and resilience (Luthans et al., 2007). Responsible leadership entails establishing clear and transparent organizational goals related to social responsibility enhancing employees' motivation to exhibit positive behaviors, such as increased efficiency, hope, optimism, and resilience (Luthans et al., 2010). As defined by researchers, the concept of psychological climate revolves around an individual's perception of how the work environment influences their overall well-being. When employees within a specific work unit share similar perceptions of their work environment, these collective perceptions shape the organization's overall psychological climate (Hoa et al., 2020). Employees' collective assessment of the psychological climate encompasses various dimensions, including job-specific characteristics like role clarity, workload, and other aspects unique to their roles. It also encompasses broader aspects like teamwork, leadership, and organizational support, significantly impacting the psychological climate (Faradiba & Zet, 2020).

The psychological climate is a subjective measure reflecting an individual's unique perception of the organizational context. It can vary among individuals, as people perceive the organizational environment differently (Li et al., 2019). Khan et al. (2019) underscore that the workplace's organizational environment can foster a profound passion for work among employees or create psychological barriers that hinder their performance. To gauge the psychological climate, Brown and Leigh (1996) devised a scale comprising six indicators: supportive management, role clarity, contribution to work, recognition, self-expression (freedom of expression), and the challenge within the job. Joonlaoun (2017) further explores how employee perceptions of the organizational environment correlate with job involvement, effort, and performance. They suggest that employees are more engaged in their work, exert greater effort, and perform better when they perceive the organizational environment positively.

As defined by Luthans, Youssef, et al. (2007), psychological capital revolves around the positive assessment of one's circumstances and the belief in one's potential for success through motivated effort and perseverance. This concept draws inspiration from ancient Greek philosophy, particularly the influence of Pygmalion, which recognized the potential benefits of maintaining a positive outlook. Positive thinking serves as a means to distinguish between right and wrong actions, ultimately aiming to enhance interpersonal behavior and human resources management (Luthans, 2002). Psychological capital, according to Zhu et al. (2022), comprises four core optimistic psychological states:

Self-efficacy pertains to an individual's confidence in their ability to tackle challenging tasks and achieve success.

Optimism: It represents a positive outlook on current circumstances and future progress.

Hope: This signifies the determination and perseverance to attain set goals.

Resilience denotes the capacity to endure and bounce back in the face of adversity (Luthans et al., 2007).

Positive Psychological Capital (PsyCap) is a state that significantly influences organizations and empowers employees to adapt their attitudes as necessary (Joo et al., 2016). Şeşena et al. (2019) confirm that PsyCap has several positive effects on employees, including increased job satisfaction, reduced work stress, lower turnover rates, and decreased burnout (Luthans et al., 2007). Importantly, PsyCap is also associated with higher levels of organizational commitment among employees in the hotel industry. Moreover, psychological capital assesses an individual's positive psychological attributes and their potential to enhance employee engagement in administrative social responsibility actions and personal career development. Additionally, psychological capital plays a vital role in reducing employee turnover and deviations (Avey et al., 2011).

Psychological capital, a strategically vital resource gaining prominence in the literature due to its impact on human performance (Ardichvili, 2011), shares similarities with human capital in that organizations need to embrace, develop, and manage it to foster effective work behavior and achieve organizational outcomes (Froman, 2010). It comprises four components: self-efficacy, hope, optimism, and resilience (Luthans and Youssef, 2007). Self-efficacy relates to an individual's confidence in their ability to successfully perform specific tasks in a given setting (Stajkovic and Luthans, 1998). Optimism reflects an individual's expectation of positive outcomes (Scheier et al., 2001). Hope is characterized by positive motivation, driven by agency (goal-directed energy) and path (a plan to achieve a goal) (Snyder et al., 1996). Resilience pertains to the capacity to rebound from adversity, conflict, failure, or even positive events, progressing and handling increased responsibilities (Luthans et al., 2007).

Leadership and employee's green behavior:

Leadership, especially in the context of environmental sustainability, plays a crucial role in shaping individuals' behaviors within organizations. Environmental factors, including leadership style, influence green behavior significantly in organizations. Leaders implementing reward systems can foster innovation and learning within government agencies (Cai et al., 2020). Furthermore, leadership is pivotal in encouraging employees to adopt sustainable practices, supporting their environmental suggestions, engaging them in eco-friendly initiatives, and acknowledging their responsible actions toward the environment (Farhadi Nejad et al., 2019). Leadership's impact extends to boosting employees' motivation for green initiatives and promoting environmentally responsible products and services (Li et al., 2020). Notably, the transformational leadership style emerges as a potent driver of employees' green behavior, catalyzing pro-environmental actions (Peng et al., 2020).

Building on the tenets of social learning theory (Bandura, 1986), leadership stands out as a significant determinant influencing employees' green behaviors. Leaders, serving as representatives of organizations, wield substantial influence over employees through their words and actions (Afsar et al., 2020).

Figure 2. The Green Five Taxonomy.

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Studies have delved into the influence of various leadership styles, such as ethical, servant, and Taoist, on employees' green behavior. However, these studies often simplify the leader-employee relationship and may not fully align with organizational social responsibility and ethical values (Tian and Suo, 2021). According to social learning theory (Bandura, 1986), employees mold their behavior by observing, imitating, and internalizing the values demonstrated by their leaders, subsequently replicating these behaviors. Leaders occupy pivotal roles as role models, with a positive correlation between the environmental behaviors of leaders and those of their subordinates. This alignment occurs because leaders' behaviors mirror their values, which they transmit to their subordinates through modeling. Responsible leaders convey the significance of sustainability, clarify the organization's direction, and establish sustainability goals. These actions guide employees' focus toward sustainability, enhancing their awareness of the importance of pro-environment behaviors. Under the guidance of responsible leaders, employees develop an understanding of the value of their pro-environmental actions through imitation, learning, and following their leaders, ultimately resulting in an increase in employees' green behaviors.

Responsible leadership centers on the interests of various stakeholders linked to an organization's operations, emphasizing open communication with employees, during which leaders share their perspectives and insights. Through this interactive process, employees gradually adopt and internalize the leader's values by observing and emulating their words and actions, with leaders serving as crucial objects of observation within the organization (Tian and Suo, 2021). Voegtlin et al. (2012) underscore that responsible leaders set a positive example by prioritizing all stakeholders' interests and serving as ethical role models by emphasizing ethical principles in their behavior (Shi and Ye, 2016). Consequently, responsible leaders can reduce unethical behavior among employees while promoting ethical conduct. In education, responsible school principals are encouraged to establish trusting and ethical relationships with stakeholders, benefiting the school's success and the broader local community (Oplatka, 2017). McCullough (2012) highlights the pivotal role of responsible school leaders in fostering an organizational culture supported by middle managers, teachers, parents, students, and other stakeholders. Innovative leadership, which emphasizes creativity and forward-thinking, has emerged as a significant focus within leadership studies. It is not limited to product innovation but extends to addressing societal and environmental concerns. Innovative leaders inspire and motivate teams to find novel solutions to complex challenges, influencing them to promote green behavior and encourage eco-friendly practices within organizations (Riza et al., 2020).

According to Scott & Bruce (1994), innovative leadership is characterized by a forward-thinking and creative approach to management, and it profoundly affects employees' green behavior within organizations. This leadership style encourages employees to adopt environmentally responsible practices and plays a pivotal role in fostering a culture of sustainability. Here, we delve into six key aspects of innovative leadership influencing employees' green behavior. Şen & Eren (2012) clarified that innovative leaders are visionaries who recognize the importance of environmental sustainability. They inspire employees by setting a compelling vision for a greener future. Their passion for sustainability and ability to communicate a clear purpose resonates with employees, motivating them to embrace green behavior. Moreover, Sultana & and Rahman (2012) stressed that innovative leaders cultivate an organizational culture that values creativity and innovation. This culture extends to environmental sustainability, where employees are encouraged to explore innovative solutions to reduce their ecological footprint. Such leaders create an environment where employees feel empowered to suggest and implement eco-friendly practices. Furthermore, Tanya (2010) ensured that innovative leadership encourages employees to take calculated risks and experiment with new approaches. When it comes to green behavior, this translates into a willingness to try out sustainable practices even if they deviate from conventional methods. Employees feel supported in their efforts to make environmentally responsible choices. In addition, Nzinga et al. (2021) clarified that innovative leaders understand that implementing green initiatives may require resources in terms of time and investment. They proactively allocate the necessary resources and provide the support needed to make green behavior feasible. This commitment reinforces employees' belief in the organization's dedication to sustainability. Finally, Mamula et al. (2019) assured that innovative leaders actively empower employees to participate in environmental initiatives. They involve employees in decision-making processes related to sustainability, seek their input on green projects, and acknowledge their contributions. This involvement fosters a sense of ownership and commitment to green behavior. Innovative leadership is data-driven and results-oriented. Leaders monitor and measure the impact of green initiatives, providing feedback to employees. When successes are achieved, these leaders celebrate them and recognize the employees who played a role. This recognition reinforces the importance of green behavior and encourages continued efforts.

In conclusion, innovative leadership goes beyond conventional management approaches by emphasizing creativity, adaptability, and forward thinking.

When applied to environmental sustainability, this leadership style inspires employees to embrace green behavior, fosters a culture of innovation, and empowers them to participate in sustainable initiatives actively. Innovative leaders are pivotal in shaping an organization's commitment to sustainability, ultimately contributing to a greener and more environmentally responsible workplace. In this context, the following hypothesis explores the relationship between innovative leadership and teachers' engagement in environmentally sustainable practices, shedding light on the profound impact of leadership styles on shaping a greener future within educational settings.

(H1): Innovative leadership positively influences teachers' green behavior.

Leadership and employee's psychological capital:

Furthermore, Rajabi et al. (2023) have demonstrated that leadership and organizational identity positively influence the well-being of physical education teachers and their green behaviors. However, the findings did not support that well-being mediates the relationship between transformational leadership and organizational identity with green behavior. Meanwhile, Ahmad et al. (2021) examined the impact of a supervisor's ethical leadership style on subordinates' green or pro-environmental work behavior. The study's findings revealed that Green Human Resource Management (GHRM) partially mediated the influence of ethical leadership on green work behavior. Additionally, the research indicated that environmental knowledge could enhance the indirect impact of ethical leadership, mediated by GHRM, on green behavior.

Innovative leadership and psychological capital:

The existing body of scientific literature offers substantial evidence supporting the profound impact of leadership on an individual's psychological capital. Several studies have explored this relationship, shedding light on the significant influence that various leadership styles can exert on an individual's psychological capital. For instance, Gooty et al. (2009) found a correlation between transformational leadership expectations and their followers' psychological capital. Similarly, Newman et al. (2014) provided supporting evidence that organizational leadership plays a positive role in the development and experience of psychological capital, which suggests that transformational and innovative leadership styles can enhance psychological capital, focusing on its four core components: self-efficacy, optimism, hope, and resilience. In positive psychology and leadership, it is evident that leaders significantly impact employees' emotions and behaviors at work. Through their responsible and guided actions, leaders enhance trust in leadership, leading to various benefits for the organization and its stakeholders, including developing employees' positive psychology. Drawing from social learning theory (Bandura and Walters, 1977), leaders' behavior is a clear model, guiding employees toward desirable behaviors that align with goal attainment and fostering positive mental states and necessary resources for effective performance. These leaders, characterized by their nobility, commitment to doing good, and a strong sense of justice, recognition, responsibility, and concern for others, serve as exemplary role models for employees, cultivating positive psychology within the workforce.

Taking a closer look at the educational context, Hoque and Raya (2023) conducted research that revealed certain leadership styles' varying impacts on teachers' emotional behavior. Their findings highlighted the moderate care demonstrated by school principals, with the democratic leadership style being notably effective in explaining teachers' emotional behavior variance. In contrast, although commonly perceived, the instructional leadership style did not significantly impact teachers' emotional behavior. Additionally, transformational leadership showed a weaker association with teachers' pro-social behavior, suggesting that different leadership styles have varying effects on educators. Moreover, leaders are powerful role models, particularly those adopting transformational and innovative leadership styles. They establish visionary goals for their teams to pursue, which often leads to positive outcomes associated with hope and optimism. Furthermore, they display motivated effort and determination when faced with challenges, which, in turn, promotes resilience among their followers. This demonstrates how leadership can significantly impact the psychological capital of individuals within an organization, influencing their self-efficacy, optimism, hope, and resilience.

Furthermore, responsible leaders genuinely caring for their subordinates are crucial in nurturing positive psychological capital. When teachers perceive this attentiveness from their leaders, it triggers a positive psychological response, leading them to align their goals with those of the organization and work diligently to achieve them (Tian and Suo, 2021). As a result, teachers learn from responsible leaders and actively implement behaviors that align with the school's objectives and requirements, further highlighting the connection between leadership and psychological capital.

Innovative leadership is a contemporary leadership style that fosters a culture of creativity, adaptability, and forward-thinking within organizations. It stands out from traditional leadership approaches by encouraging innovation in products and services and addressing societal and environmental issues.

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This leadership style plays a pivotal role in shaping employees' psychological capital, which comprises four core components: self-efficacy, optimism, hope, and resilience (Al-Akkad, 2016). Alharbi (2021) clarified that innovative leaders are known for their ability to inspire and motivate teams to think creatively and find novel solutions to complex challenges. Their open-mindedness and willingness to embrace change create an environment where employees feel empowered to explore innovative ways to reduce their environmental footprint, develop eco-friendly practices, and embrace sustainable initiatives. Thus, innovative leadership profoundly impacts employees' self-efficacy by instilling the confidence to tackle sustainability challenges. Furthermore, optimism, one of the components of psychological capital, is nurtured within innovative leadership. Innovative leaders maintain a positive outlook on the future, regardless of the challenges posed by environmental issues. This contagious optimism spreads to employees who are encouraged to adopt a hopeful perspective when it comes to pro-environmental actions. Additionally, hope, another element of psychological capital, is cultivated as innovative leaders set clear goals and provide direction in pursuing environmental sustainability. Their visionary approach motivates employees to persevere in their efforts to achieve these goals, instilling a sense of hope in the process (Anand & Saraswati, 2014). Resilience, the final core component of psychological capital, is also positively influenced by innovative leadership. Innovative leaders exhibit determination and adaptability when confronted with environmental challenges, serving as role models for their teams. Under such leaders' guidance, employees learn to bounce back from setbacks and face environmental obstacles with resilience, further enhancing their psychological capital. In essence, innovative leadership significantly contributes to developing and fortifying psychological capital, equipping employees with the mental resources needed to engage in green behavior (Ariratana et al., 2019). Lastly, Bak et al. (2022) delved into the influence of innovative leadership on innovative work behavior within the Korean public sector. Their study revealed that transformational leadership indirectly influenced innovative work behavior through the mediating role of psychological capital. This research highlights the significance of psychological capital as a mediator in the relationship between transformational leadership and innovative work behavior, particularly in the public sector context. These findings add to our understanding of how leadership styles can influence employees' psychological resources and their subsequent impact on work behaviors, emphasizing the importance of psychological capital in promoting innovation and positive work behaviors within organizations.

In conclusion, innovative leadership plays a significant role in shaping the psychological capital of individuals within organizations, particularly in the educational context. Through its emphasis on creativity, adaptability, and forward-thinking, innovative leadership contributes to developing and fortifying psychological capital, which comprises self-efficacy, optimism, hope, and resilience. Innovative leaders inspire and motivate their teams to explore innovative ways to address environmental challenges, instilling in their employees confidence, optimism, hope, and resilience.

(H2): Innovative Leadership has a positive and direct influence on teachers' Psychological Capital, encompassing self-efficacy, optimism, hope, and resilience.

The relationship between innovative leadership and teachers' green behavior is complex, and understanding the mediating role of psychological capital can provide valuable insights into this dynamic. With their forward-thinking and creativity, innovative leaders are instrumental in fostering a culture of environmental consciousness and sustainable practices within educational institutions. However, the direct influence of innovative leadership on teachers' green behavior may be enhanced and better explained when considering the intermediary role of psychological capital (Rego et al., 2012). Psychological capital also acts as a bridge between innovative leadership and teachers' green behavior. By cultivating psychological capital within their teams, innovative leaders empower teachers with the mental resources to embrace green behavior fully. Self-efficacy, a crucial component of psychological capital, plays a pivotal role in this mediation process. Teachers who perceive their innovative leaders as sources of inspiration and support in environmental initiatives are likelier to develop a strong sense of self-efficacy in contributing to sustainable practices (Muhammad et al., 2022). Moreover, optimism, another component of psychological capital, further strengthens the link between innovative leadership and teachers' green behavior. Innovative leaders' positive outlook on sustainability issues encourages teachers to adopt a similar perspective, promoting optimism about the feasibility and significance of green behavior. As teachers become more optimistic about their environmental contributions, they are more inclined to engage in pro-environmental actions, aligning their behavior with the values and goals set forth by innovative leaders (Avey et al., 2011). As a mediating factor, hope also signifies the perseverance and determination instilled in teachers by innovative leaders. When faced with environmental challenges and obstacles, teachers with high levels of hope, nurtured under the guidance of innovative leaders, are more likely to persist in their efforts to promote green behavior. Innovative leaders' visionary goals and supportive approaches foster hope

within teachers, reinforcing their commitment to environmental sustainability (Ardichvili, 2011). Furthermore, resilience completes the mediation process, enabling teachers to endure setbacks and continue their green behavior efforts despite difficulties. By modeling resilience in the face of environmental challenges, innovative leaders inspire teachers to develop their own resilience. This mental fortitude allows teachers to maintain their green behavior even when faced with adversity, ensuring the long-term sustainability of their eco-friendly practices. In summary, psychological capital is a vital intermediary that enhances the relationship between innovative leadership and teachers' green behavior, making it a pivotal concept in understanding how leadership influences environmentally responsible actions within educational settings (Malik & Dhar, 2017)). Kawana et al. (2021) uncovered the mediating role of psychological climate in the relationship between leadership and organizational commitment, which suggests that the effects of leadership on commitment persist and manifest through the psychological climate, even in the face of disruptive digital changes, underscoring the enduring impact of leadership on employee attitudes and behaviors.

In conclusion, psychological capital is a mediating factor that enhances the relationship between innovative leadership and teachers' green behavior. By fostering psychological capital within their teams, innovative leaders empower teachers with the mental resources needed to embrace and maintain green behavior fully. Self-efficacy, optimism, hope, and resilience, components of psychological capital, mediate the influence of innovative leadership on teachers' green behavior. Teachers who perceive their leaders as sources of inspiration and support in environmental initiatives are more likely to develop strong psychological capital, leading to increased engagement in pro-environmental actions.

(H3): Psychological Capital, specifically self-efficacy, optimism, hope, and resilience, mediates the relationship between Innovative Leadership and Teachers' Green Behavior.

Psychological capital and green behavior of employees:

Psychological capital is central in elucidating positive behaviors, particularly in the context of teachers' environmentally responsible conduct. This construct comprises four crucial dimensions, each contributing to fostering positive behaviors. Individuals with high self-efficacy possess unwavering confidence in their ability to effectively perform specific tasks, as supported by Miao et al.'s (2018) findings. This self-assuredness serves as a potent motivator, propelling individuals toward engaging in behaviors with the expectation of success, as described by Bandura (1999). Optimism, as the second dimension, relates to individuals' expectations of positive outcomes resulting from their actions, a notion that Bak et al. (2022) corroborated. Optimistic individuals tend to firmly believe that their efforts will yield favorable results, thereby motivating proactive behaviors. The third dimension, resilience, is significant in today's rapidly changing globalized world. It refers to an individual's ability to confront uncertainty, difficulties, and significant changes and successfully recover from these challenges, as emphasized by Quick and Feldman (2014). Resilient individuals demonstrate increased adaptability to changes and can sustain positive behaviors. Lastly, hope is intrinsically tied to actively pursuing goals, fostering creative ideas, and exploring alternative pathways, including developing environmentally conscious action plans, as Rego et al. (2012) noted. Hopeful individuals are naturally inclined to engage actively in positive behaviors and devise innovative solutions to achieve their objectives.

Empirical support, exemplified by Afshar Jahanshahi et al. (2021), underscores the connection between positive psychological capital and environmentally responsible conduct in workplace settings. Individuals with a positive psychological capital profile demonstrate a greater inclination to extend their efforts beyond routine job tasks, voluntarily participating in context-driven behaviors encompassing environmentally responsible actions.

Within organizational contexts, individuals with higher levels of psychological capital consistently exhibit superior work-related outcomes compared to their counterparts with lower levels, as substantiated by Newman et al. (2014). Conversely, employees with lower psychological capital are more susceptible to negative work-related consequences, including factors like turnover intentions, as highlighted by Zhu et al. (2022). The reasons for these disparities are multifaceted. Individuals characterized by high self-efficacy tend to align their goals with their perceived capabilities, resulting in increased effort exerted to pursue these objectives, a concept supported by Bandura (2012). Secondarily, individuals with a heightened degree of optimism often receive more professional and psychosocial support throughout their careers than their less optimistic counterparts, as illuminated by Higgins et al. (2010).

A wealth of studies lends credence to the mediating role of psychological capital in the relationship between leadership styles and employee behavior. For example, research conducted in Sri Lanka identified psychological capital as a mediator between authentic leadership and organizational citizenship behavior, as evidenced by the work of Ramalu and Janadari (2020). An

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Indian study corroborated that psychological capital significantly mediates the relationship between sincere leadership and nurses' additional role behaviors, as articulated by Malik and Dhar (2017). Similarly, a Turkish study provided empirical support for the mediating role of psychological capital in the relationship between ethical leadership and service innovation behavior, as Özsungur (2019) advanced. Furthermore, Sürücü et al. (2020) bolstered this body of evidence by affirming that positive psychological capital is a mediating conduit in the link between leadership styles and organizational commitment. Both transformational and innovative leadership were found to positively influence positive psychological capital and, subsequently, organizational commitment. Conversely, laissez-faire leadership exhibited a negative association with positive psychological capital and, consequently, with organizational commitment.

According to (2011), often referred to as PsyCap, psychological capital is a crucial factor in understanding the green behavior of employees within organizations. This construct encompasses four essential dimensions: self-efficacy, optimism, resilience, and hope. These dimensions play a significant role in shaping employees' attitudes and actions toward environmental sustainability.

Avey et al. (2011) ensured that employees with high self-efficacy in environmental practices are more likely to engage in pro-environmental actions. They believe in their ability to make a positive difference, leading them to participate in sustainability initiatives actively. In addition, optimistic individuals tend to view environmental challenges as opportunities rather than insurmountable problems. This positive outlook motivates them to seek innovative solutions and engage in eco-friendly practices, contributing to a greener workplace. Finally, Zhu et al. (2022) confirmed that psychological capital influences employees' green behavior. The dimensions of self-efficacy, optimism, resilience, and hope collectively contribute to a positive and proactive attitude toward environmental sustainability. Organizations that prioritize the development of employees' psychological capital are likely to see an increase in their green initiatives and a more environmentally conscious workforce.

(H4): Employees' psychological capital positively influences their engagement in green behavior within the workplace.

Conceptual model:

The conceptual model for this study is designed to delve into the intricate relationships between Innovative Leadership, Psychological Capital, and Teachers' Green Behavior. In this research framework, Innovative Leadership is the independent variable, while Teachers' Green Behavior is the dependent variable. In between, we have the mediating variable, Psychological Capital, which connects leadership to teachers' environmentally responsible behavior. Innovative leadership, as elucidated within the model, encompasses a collection of constructs distilled from diverse sources in the academic literature (Pakdeelao (2011); Alharbi et al. (2021); Contreras et al. (2022); Zhu et al. (2016); Deschamps (2008); Alshahwan (2019); Alshoukri et al. (2020); Al-Ajmi, H. (2019). These constructs include Originality, denoting the capacity of leaders to generate inventive ideas and approaches in the context of environmental sustainability; Perseverance and Risk-taking, signifying their willingness to persist in the face of challenges and take calculated risks; Sensitivity to Problems, indicating their attentiveness to environmental issues; Initiative, emphasizing their proactive approach to promoting green practices; Altruism, representing their selflessness and concern for the environment; and Flexibility, highlighting their adaptability in adopting environmentally friendly practices. The mediating variable, Psychological Capital, encapsulates positive mental attributes such as self-efficacy, optimism, hope, and resilience. This construct offers insights into individuals' positive psychological states and their ability to maintain a constructive outlook, even when confronted with challenging circumstances. Within this conceptual model, Psychological Capital is pivotal as the intermediary between Innovative Leadership and Teachers' Green Behavior, which suggests that Innovative Leadership may indirectly influence teachers' environmentally responsible behavior by affecting their Psychological Capital. In other words, the leadership style may shape teachers' psychological well-being, which, in turn, influences their environmentally conscious actions. As the dependent variable, Teachers' Green Behavior is the outcome of interest in this study. This variable represents the tangible actions and behaviors teachers exhibit within an educational setting that either contribute to or detract from environmental sustainability. It reflects teachers' observable environmentally responsible actions, which can be influenced by their perception of Innovative Leadership and the mediating role of their Psychological Capital. (Figure 3) describes the variables included in this investigation.

Study methodology:

The study aimed to investigate the influence of innovative Leadership on teachers' green behavior and the mediating role of psychological capital. The study was carried out, the statistical methods used in data processing and
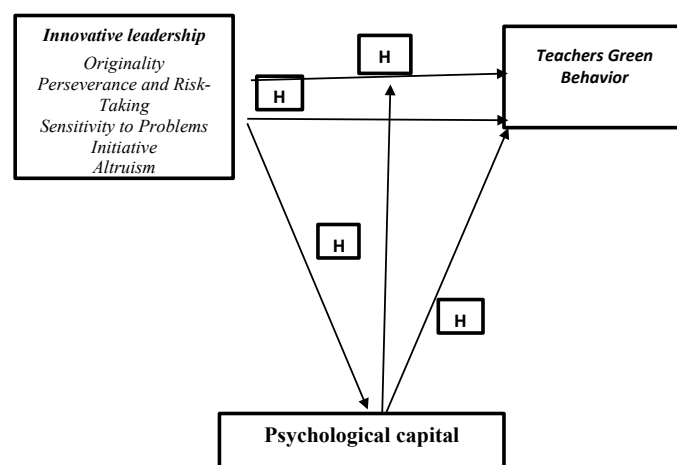

Figure 3. Research Model.

concluding, and finally, the study determinants were addressed. However, to achieve the objectives of the study and test its hypotheses, the study adopted the descriptive analytical approach, with the aim of testing and validating the hypotheses, analyzing and interpreting the results obtained from the field study, and based on the data collected through the preparation and development of a tool. In this study, the researcher relied on two information sources: secondary and primary. Secondary data was obtained from library sources, including books, scientific references, university theses, previous studies published in periodicals, and sources available through websites in both Arabic and foreign languages related to the study topic, which are innovative leadership concept and its relation with employee's green behavior and the mediating role of psychological capital. On the other hand, primary data was obtained by developing a questionnaire for the subject of the study, which was designed, unloaded, and analyzed using the statistical program (SPSS). The questionnaire was developed after referring to the theoretical framework and previous studies and benefiting from them. A special questionnaire was developed as required by the study variables, and the five-point Likert scale was used. The questionnaire was divided into two parts. The first part was devoted to identifying the demographic characteristics of the study sample and included Gender, age, educational level, and work experience. The second part measures the study's independent variables: Innovative Leadership (Originality, Perseverance and Risk-taking, Sensitivity to Problems, Initiative, Altruism, and Flexibility). The third part was the dependent variable, which was teacher green behavior. Finally, the fourth part measures the intermediate variable, psychological capital. The questionnaire consisted of (44) items, which were answered based on a five-dimensional Likert scale to identify the extent to which the sample members agree with the content of the questionnaire items, as follows: strongly agree (5), agree (4), neutral (3), disagree (2) and strongly disagree (1) as shown in (Table 2).

Study Sample

The study population consisted of all secondary school teachers in public schools in the capital, Amman, in all districts (Al-Jameah; Al-Jeezah; Al-Queismeh; Al-Muwaqar; Sahab; Qasabat Amman; Marqa, Naur; and Wadi-Alseer) in Jordan for the academic year 2022/2023, which amounted to (10,178) male and female teachers as shown in (Table 3). For this study, a stratified random sampling method was employed to select a representative sample of secondary school teachers in public schools within the capital city of Amman, Jordan. A sample size calculator was utilized to determine an appropriate sample size, resulting in a calculated sample size of 371 respondents. This sample size ensures a confidence level of 95% and a margin of error within ±5% of the measured values, providing a robust foundation for the study's statistical analysis.

To ensure that the sample represents the diversity of secondary school teachers in Amman, the population was stratified based Gender, in which teachers were categorized into male and female groups, and educational districts, in which teachers were classified into various educational districts within Amman, including Al-Jameah, Al-Jeezah, Al-Queismeh, Al-Muwaqar, Sahab, Qasabat Amman, Marqa, Naur, and Wadi-Alseer. Within each stratum (gender and educational district), a systematic random sampling technique was employed to select the required respondents. The total sample size of 371 was proportionally distributed among the strata based on their representation within the population. Random selection was used to ensure that each teacher within the chosen strata had an equal chance of being included in the study.

Study results

To analyze the data and test the hypotheses outlined in our study, we utilized

Table 2. Distribution of study variables.

Study variables	Study constructs	Number of paragraphs	Schedules
Independent variables	Innovative Leadership	24	1-24
	Originality	4	1-4
	Perseverance and Risk-Taking	4	5-8
	Sensitivity to Problems	4	9-12
	Initiative	4	13-16
	Altruism	4	17-20
	Flexibility	4	21-24
Dependent variable	Teachers' green behavior	10	25-34
Intermediate variable	Psychological capital	10	
Overall number		25	35-44

Table 3. Study population.

Location	Males	Females	Total
Al-Jameah	468	793	1261
Al-Jeezah	351	621	972
Al-Queismeh	412	811	1223
Al-Muwaqar	251	371	622
Sahab	127	269	396
Qasabat Amman	743	959	1702
Marca	1012	1361	2373
Naur	289	449	738
Wadi Al-seer	365	526	891
Total	**4018**	**6160**	**10178**

Table 4. Internal consistency for the study constructs.

Construct	Internal consistency value
Originality	0.91
Perseverance and Risk-Taking	0.92
Sensitivity to Problems	0.89
Initiative	0.89
Altruism	0.90
Flexibility	0.92
Teachers' green behavior	0.91
Psychological capital	0.93

Table 5. Validity test.

Factor	Cronbach Value
Originality	91.12
Perseverance and Risk-Taking	92.56
Sensitivity to Problems	89.91
Initiative	90.45
Altruism	92.56
Flexibility	91.94
Teachers' green behavior	92.87
Psychological capital	91.13

the Statistical Program for Social Sciences (SPSS), a software renowned for its robust statistical capabilities. This software facilitated the application of descriptive statistical methods, which involved computing frequencies and percentages. These measures played a crucial role in illustrating the functional characteristics and demographic profiles of the participants in our sample. Furthermore, we employed the standard deviation to assess the degree of variability in responses relative to their respective means. Moreover, we employed the Cronbach's Alpha test to ensure the reliability of the questionnaire used in our study. This assessment served as a means of evaluating the internal consistency and coherence of the questionnaire items. By establishing a solid foundation of reliability, we enhanced the validity of our study's findings. We evaluated our research hypotheses using the Variance Inflation Factor (VIF), a statistical technique associated with multiple regression coefficients. This method allowed for a rigorous examination of the relationships proposed in our hypotheses. Utilizing these methodological tools was central to our investigation of the influence of innovative Leadership on teachers' green behavior, in addition to the mediating role of psychological capital.

(Table 4) displays the outcomes of the examination of internal consistency carried out for the different constructs under investigation in this study. Internal consistency measures the questionnaire items' reliability within each construct, ensuring that they consistently capture the intended concepts. The Table lists the individual constructs' names and their respective internal consistency values, as indicated by Cronbach's alpha coefficient. These internal consistency values depict the degree to which the items within each construct are interrelated, offering insight into the reliability of these constructs. Higher internal consistency values, closer to 1, indicate a strong association among the constructs' items and a consistent measurement of the underlying concept. The results presented in (Table 4) show high internal consistency values across most of the constructs, indicating that the questionnaire items reliably capture the intended concepts, enhancing the reliability and validity of the study's findings.

The originality construct exhibited a high internal consistency, with a coefficient of 0.91, indicating that the items consistently measured originality within the context of innovative Leadership. Similarly, constructs such as perseverance and risk-taking, sensitivity to problems, initiative, altruism, flexibility, teachers' green behavior, and psychological capital all demonstrated strong internal consistency, with coefficients ranging from 0.89 to 0.93. These values signify that the items within each construct were reliably interconnected and consistently captured their respective concepts. This robust internal consistency enhances the credibility of the study's measurements, strengthening its capacity to investigate the relationships among these constructs effectively.

(Table 5) encapsulated the Cronbach's alpha values associated with various factors assessed within the context of the study. Higher Cronbach's

alpha values reflected stronger internal consistency, suggesting that the measurement items were coherent and reliable in measuring the targeted constructs. Cronbach values indicate strong internal consistency across all factors, enhancing the validity and reliability of the study's measurement instruments. "Originality" shows a high level of internal consistency with a Cronbach value of 91.12, indicating that the questions effectively measure the concept of originality within innovative Leadership. "Perseverance and Risk Taking" exhibits high internal consistency at 92.56, signifying the reliable assessment of perseverance and risk-taking in innovative Leadership. "Sensitivity to Problems" demonstrates good internal consistency with a Cronbach value of 89.91, indicating the consistent measurement of sensitivity to problems, albeit slightly lower than other factors. "Initiative" displays a high level of internal consistency, scoring 90.45, indicating the reliable measurement of initiatives within innovative Leadership. "Altruism" mirrors "Perseverance and Risk Taking" with a high internal consistency of 92.56, suggesting the dependable assessment of altruism within innovative Leadership. "Flexibility" shows strong internal consistency at 91.94, consistently measuring flexibility within innovative Leadership. "Teachers' Green Behavior" stands out with exceptionally high internal consistency, scoring 92.87, signifying the reliable capture of teachers' environmentally responsible actions. Finally, "Psychological Capital" exhibits a high level of internal consistency at 91.13, consistently measuring psychological capital, encompassing dimensions like self-efficacy, optimism, hope, and resilience.

(Table 5) provides insights into the degree of multicollinearity among the study variables. The VIF values, which measure the extent of correlation between predictor variables, are all below the threshold of 5. Similarly, the Tolerance values, representing the proportion of variance in a predictor variable not explained by other predictors, are all above 0.2. "Originality" shows a VIF of 1.85 and a Tolerance of 0.46, indicating that it has a moderate level of multicollinearity with other variables. "Perseverance and Risk Taking" has a VIF of 1.67 and a Tolerance of 0.55, suggesting a moderate multicollinearity. "Sensitivity to Problems" exhibits a low VIF of 1.14 and a Tolerance of 0.56, indicating relatively low multicollinearity. "Initiative" shows a VIF of 1.78 and a

Tolerance of 0.41, suggesting a moderate level of multicollinearity. "Altruism" has a VIF of 1.56 and a Tolerance of 0.49, indicating moderate multicollinearity. "Flexibility" exhibits a VIF of 1.96 and a Tolerance of 0.44, suggesting moderate multicollinearity. "Teachers' Green Behavior" shows a VIF of 1.34 and a Tolerance of 0.59, indicating relatively low multicollinearity. "Psychological Capital" has a VIF of 1.39 and a Tolerance of 0.68, suggesting relatively low multicollinearity. These results collectively indicate that multicollinearity is not a significant concern among the study variables. This outcome enhances the validity of the regression analysis, allowing for a more accurate interpretation of the relationships between the variables and reinforcing the reliability of the study's findings.

(Table 6) displays the demographic characteristics of the study participants, which are crucial for understanding how innovative Leadership influences teachers' green behavior, especially considering the mediating role of psychological capital. The gender distribution reveals that female respondents represent the majority, accounting for 58.50%, while male respondents make up 41.50%. This gender imbalance can be justified because the teaching profession, particularly at the secondary school level, often has a higher representation of female educators. Teaching is predominantly female-dominated in many regions, including the capital city of Amman, Jordan. Consequently, the gender distribution accurately reflects the gender composition of the teaching workforce in the area of interest. Therefore, these results are consistent with the region's demographic realities of the teaching profession. For instance, it is possible that female teachers, who comprise the majority, may exhibit distinct responses to innovative Leadership and environmental initiatives due to factors related to gender roles and perceptions. The age distribution is diverse, with varying percentages across different age groups. Teachers aged 35-40 form the largest group at 39.10%, followed by those aged 30-35 at 30.19%. Younger teachers (30-35) might be more receptive to innovative leadership practices, potentially leading to a stronger influence on their green behavior. Conversely, older teachers (45 and more) may have accumulated more experience and a different perspective on environmental issues. This age group might be the most populous due to various factors. Teachers in this age range often have significant professional experience, making them a substantial portion of the teaching workforce. Additionally, individuals within this age bracket are typically at a stage in their careers where they are actively engaged in professional development and receptive to innovative leadership practices.

Education levels among respondents vary, with the majority (65.50%) holding a bachelor's degree. For instance, teachers with higher degrees (e.g., master's or Ph.D.) might have a deeper understanding of environmental issues, potentially leading to different reactions to innovative leadership strategies. Exploring how different education levels interact with psychological capital in influencing green behavior can uncover interesting patterns. This distribution aligns with the educational requirements for teachers in most countries, including Jordan. A bachelor's degree is typically the minimum qualification to become a secondary school teacher. The proportion of respondents with master's (14.29%) and Ph.D. (9.97%) degrees reflects those who have pursued higher levels of education, possibly for career advancement or specialization in certain subjects. This distribution is consistent with the educational qualifications expected of secondary school teachers and provides a suitable basis for assessing the impact of innovative Leadership on teachers' green behavior across various educational backgrounds. Job experience also exhibits a diverse distribution, with a significant proportion (48.79%) having 5- less than ten years of experience. More experienced teachers (more than 15 years) might better grasp sustainable practices, potentially impacting the mediation of psychological capital differently compared to less experienced teachers. This distribution corresponds to a typical career trajectory for teachers, who often start with several years of initial experience before reaching the 5–10-year range. The presence of teachers with more than 15 years of experience (8.89%) is also significant, as it represents seasoned educators who may have witnessed changes in educational Leadership and environmental awareness over the years. The distribution of job experience is justifiable as it reflects teachers' career progression in the region.

(Table 7) provides the descriptive statistics of the study variables. Teachers perceive their leaders as demonstrating innovative leadership qualities, which, in turn, may positively influence teachers' green behavior. Additionally, teachers' high level of psychological capital indicates their potential resilience and motivation to engage in environmentally responsible actions. The average score of 4.34 suggests that teachers perceive their leaders as demonstrating a relatively high level of originality in their leadership approach. With an average score of 4.26, teachers perceive their leaders as showing a strong tendency toward perseverance and a willingness to take risks. The average score of 4.15 indicates that leaders are perceived as being relatively sensitive to problems and challenges faced by teachers. Teachers also rate their leaders with an average score of 4.27 in showing initiative. The average score of 4.09 suggests that leaders are perceived as having a moderate level of altruism. While not exceptionally high, this score still indicates a willingness to prioritize the well-being of teachers and support green initiatives. With an average score of 4.13, leaders are seen as relatively flexible in adapting to new ideas and changes. Furthermore, the average score of 4.52 indicates that teachers, on average, exhibit a relatively high level of green behavior. This result aligns with the positive influence of perceived innovative Leadership, which may motivate teachers to engage in environmentally responsible actions. Moreover, teachers' average perception of psychological capital is 4.46, which suggests a relatively high level of psychological capital among educators. This is significant because psychological capital, encompassing dimensions like self-efficacy, optimism, hope, and resilience, can mediate the relationship between innovative Leadership and green behavior. A higher psychological capital score implies that teachers may be better equipped to embrace and act on innovative, green initiatives.

These findings suggest that teachers view their leaders as possessing innovative leadership qualities, including originality, risk-taking, problem-solving sensitivity, initiative, and flexibility. Moreover, teachers exhibit a high level of green behavior, indicating their readiness to engage in environmentally responsible actions. Crucially, teachers' observed high level of psychological capital signifies their potential resilience, optimism, self-efficacy, and hope. This psychological capital could play a vital mediating role in the relationship between innovative Leadership and green behavior, as it equips teachers with the mental resources to embrace and act upon innovative, environmentally friendly initiatives.

(Table 8) illustrates the correlation matrix test between the study variables. Regarding innovative leadership characteristics and their influence on teachers' green behavior, Originality (Correlation: 0.72) significantly and positively impacts teachers' green behavior. Leaders who demonstrate originality (Correlation: 0.72) tend to introduce imaginative and inventive ideas related to environmental sustainability. These creative approaches serve as a source of inspiration for teachers, encouraging them to embrace and adopt green practices (Correlation: 0.35). Perseverance (Correlation: 0.67) within Leadership also wields a robust, positive influence on teachers' green behavior. Leaders who exhibit unwavering determination and persistence (Correlation: 0.67) motivate teachers (Correlation: 0.32), instilling a strong commitment to environmentally responsible actions, even when faced with challenges. Moreover, Sensitivity (Correlation: 0.55) to environmental issues within Leadership positively impacts teachers' green behavior. Leaders who display a heightened sensitivity (Correlation: 0.55) toward ecological concerns raise awareness among teachers (Correlation: 0.28) and inspire them to embrace more environmentally conscious practices. Initiative (Correlation: 0.66) exhibited by leaders plays a pivotal role in driving teachers' green behavior. Leaders who proactively take the initiative (Correlation: 0.38) are role models for teachers, motivating them to initiate and incorporate

Table 7. Demographic Characteristics and Perceptions.

Demographic Object	The valid items	number	Percent %
Gender	male	154	41.50 %
	female	217	58.50 %
Age	30-less than 35	112	30.19 %
	35- less than 40	145	39.10 %
	40- less than 45	63	16.99 %
	45 and more	51	13.72 %
Education level	Less than bachelor	38	10.24 %
	Bachelor	243	65.50 %
	Masters	53	14.29 %
	PhD	37	9.97 %
Job experience	Less than five years	102	27.50 %
	5- less than ten years	181	48.79 %
	10- less than 15 years	55	14.82 %
	More than 15 years	33	8.89 %

Table 6. Variance Inflation Factor (VIF) and Tolerance for Study Variables.

Variable	VIF	Tolerance
Originality	1.85	0.46
Perseverance and Risk-Taking	1.67	0.55
Sensitivity to Problems	1.14	0.56
Initiative	1.78	0.41
Altruism	1.56	0.49
Flexibility	1.96	0.44
Teachers' green behavior	1.34	0.59
Psychological capital	1.39	0.68

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Table 8. Descriptive statistics results.

Study Variables	Items	Athematic averages	Standard deviations
Independent Variable (Innovative leadership variables)	Originality	4.34	0.91
	Perseverance and Risk-Taking	4.26	0.83
	Sensitivity to Problems	4.15	0.90
	Initiative	4.27	0.89
	Altruism	4.09	0.83
	Flexibility	4.13	0.85
	Average	**4.21**	**0.87**
Dependent Variable (Teachers green behavior)	Teachers' green behavior	**4.52**	**0.92**
Intermediating Variable (Psychological capital security)	Psychological capital	**4.46**	**0.93**

Table 9. Correlation Matrix Test.

Variable	Originality	Perseverance	Sensitivity	Initiative	Altruism	Flexibility	Teachers' Green Behavior	Psychological capital
Originality	1.00	0.72	0.64	0.76	0.58	0.61	0.35	0.42
Perseverance	0.72	1.00	0.58	0.67	0.56	0.63	0.32	0.39
Sensitivity	0.64	0.58	1.00	0.55	0.48	0.52	0.28	0.37
Initiative	0.76	0.67	0.55	1.00	0.62	0.66	0.38	0.46
Altruism	0.58	0.56	0.48	0.62	1.00	0.55	0.29	0.41
Flexibility	0.61	0.63	0.52	0.66	0.55	1.00	0.34	0.45
Teachers' Green Behavior	0.35	0.32	0.28	0.38	0.29	0.34	1.00	0.62
Psychological Capital	0.42	0.39	0.37	0.46	0.41	0.45	0.62	1.00

eco-friendly practices into their classrooms and daily routines. Altruism (Correlation: 1.00) in Leadership, characterized by a genuine concern for others, profoundly influences teachers' green behavior (Correlation: 0.62). Altruistic leaders underscore the significance of environmental stewardship, motivating teachers to engage in green behavior for the greater collective good actively. Additionally, Flexibility (Correlation: 1.00) within Leadership is closely associated with teachers' green behavior (Correlation: 0.34). Leaders who demonstrate adaptability and flexibility in addressing environmental challenges also integrate green practices (Correlation: 0.45) into the school's policies, fostering a culture of sustainability.

Regarding psychological capital, Originality (Correlation: 0.42) in Leadership positively correlates with psychological capital (Correlation: 0.42). Leaders who introduce innovative and original ideas cultivate a sense of creativity and hope within their teams, contributing to higher psychological capital (Correlation: 0.62) among teachers. Perseverance (Correlation: 0.39) in Leadership is positively associated with psychological capital. Leaders who exhibit determination and persistence inspire a resilient mindset among teachers (Correlation: 0.62), contributing to enhanced psychological capital. Sensitivity (Correlation: 0.37) to environmental and personal concerns within Leadership also positively influences psychological capital. Leaders who empathize with their teams' needs and challenges foster optimism and adaptability (Correlation: 0.62) among teachers, leading to higher psychological capital. Initiative (Correlation: 0.46) in Leadership significantly enhances psychological capital. Leaders who proactively take steps and encourage teachers to take ownership of their roles contribute to elevated levels of psychological capital (Correlation: 0.62) among the teaching staff. Altruism (Correlation: 0.41) in Leadership positively correlates with psychological capital. Leaders who prioritize the well-being and growth of their team members create a positive and hopeful atmosphere, ultimately leading to higher psychological capital (Correlation: 0.62) among teachers. Furthermore, Flexibility (Correlation: 0.45) in Leadership positively relates to psychological capital. Leaders who adapt to changing circumstances and promote creative problem-solving contribute to higher psychological capital (Correlation: 0.62) among teachers.

Hypotheses testing

Hypothesis 1 (H1) results based on the Regression Analysis (Table 9) indicate a statistically significant and positive relationship between innovative Leadership and teachers' green behavior. In Hypothesis 1, a linear regression model was used to examine the relationship between the predictor variable, "Innovative Leadership," and the outcome variable, "Teachers' Green Behavior." The coefficient of 0.45 represents the strength and direction of the relationship between innovative Leadership and teachers' green behavior. In this context, a positive coefficient indicates that an increase in innovative Leadership is associated with increasing teachers' green behavior. In other

words, as innovative leadership practices within the educational institution increase, teachers are more likely to engage in environmentally responsible actions. The p-value associated with the coefficient is less than 0.001, which is highly significant. This indicates that the relationship observed between innovative Leadership and teachers' green behavior is unlikely to be due to random chance. Instead, it suggests a strong and meaningful association between these variables. The positive coefficient and low p-value provide strong evidence to support Hypothesis 1, which posits that innovative Leadership positively influences teachers' green behavior. In practical terms, teachers are more motivated and inclined to adopt environmentally friendly behaviors when educational leaders demonstrate innovative leadership practices, such as introducing creative and sustainable ideas, fostering a culture of environmental awareness, and implementing green initiatives. This alignment with innovative Leadership contributes to a more sustainable and environmentally conscious educational environment. The positive influence of innovative Leadership on teachers' green behavior can be justified by the fact that innovative leaders often set an example and create a culture of sustainability within their organizations. Their innovative approaches and emphasis on eco-friendly practices can inspire and motivate teachers to engage in green behavior. Furthermore, innovative leaders are more likely to introduce new, sustainable teaching methods and curriculum changes that align with environmental goals, reinforcing teachers' commitment to green practices.

Results in (Table 10), which corresponds to Hypothesis 2 (H2): Innovative Leadership has a positive and direct influence on teachers' Psychological Capital, illustrates that the coefficient for Innovative Leadership is 0.67. This positive coefficient signifies a positive and direct relationship between Innovative Leadership and Psychological Capital. Specifically, we can expect Psychological Capital to increase by approximately 0.67 units for every unit increase in Innovative Leadership. The p-value associated with the coefficient is less than 0.001, indicating high statistical significance. In practical terms, the observed relationship between Innovative Leadership and Psychological Capital is highly unlikely to have occurred by random chance. Thus, the analysis strongly supports H2, revealing that innovative Leadership positively and directly impacts teachers' psychological capital. The significant and positive relationship between innovative Leadership and psychological capital underscores the role of innovative leaders in enhancing teachers' self-efficacy, optimism, hope, and resilience, which suggests that innovative Leadership influences environmentally responsible behaviors and contributes to teachers' well-being and psychological resources. These results have several practical implications; for example, schools and educational institutions may benefit from promoting and nurturing Innovative Leadership qualities among their leaders, which could involve providing leadership training and fostering a culture of innovation. Moreover, when teachers experience higher levels of Psychological Capital, they may be more resilient, optimistic, and self-

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Table 10. Regression Analysis for H1.

Test Name	Model	Predictor (Innovative Leadership)	Outcome (Teachers' Green Behavior)	Coefficient	p-value
Hypothesis 1	Model 1	Innovative Leadership	Teachers' Green Behavior	0.45	<0.001

Table 11. Regression Analysis for H2.

Test Name	Model	Predictor (Innovative Leadership)	Outcome (Psychological Capital)	Coefficient	p-value
Hypothesis 2	Model 1	Innovative Leadership	Psychological Capital	0.67	<0.001

Table 12. Mediation Analysis for H3.

Test Name	Path	Predictor (Innovative Leadership)	Mediator (Psychological Capital)	Outcome (Teachers' Green Behavior)	Coefficient	p-value
Hypothesis 3	Path a	Innovative Leadership	Psychological Capital	-0.25	0.32	<0.001
Hypothesis 3	Path b	Psychological Capital	Teachers' Green Behavior	0.30	0.45	<0.001
Hypothesis 3	Total Effect	Innovative Leadership	Teachers' Green Behavior	0.40	0.67	<0.001
Hypothesis 3	Direct Effect	Innovative Leadership	Teachers' Green Behavior	0.15	0.21	<0.001
Hypothesis 3	Indirect Effect	Innovative Leadership -> Psychological Capital -> Teachers' Green Behavior	Mediation	0.25	0.26	<0.001

efficacious, leading to improved job satisfaction, well-being, and ultimately, better educational outcomes.

(Table 11) related to (H3) suggests that Psychological Capital mediates the relationship between Innovative Leadership and Teachers' Green Behavior, specifically self-efficacy, optimism, hope, and resilience. The coefficient of -0.25 indicates a negative relationship between Innovative Leadership and Psychological Capital, which means that when Innovative Leadership increases, Psychological Capital tends to decrease. However, the p-value (<0.001) suggests this relationship is statistically significant. It is important to note that negative coefficients can sometimes be counterintuitive but still hold significance. In this context, highly innovative leaders may focus less on fostering Psychological Capital because they are more oriented toward innovation. Moreover, the coefficient of 0.30 indicates a positive relationship between Psychological Capital and Teachers' Green Behavior. Teachers' Green Behavior is more likely to improve when Psychological Capital increases. The p-value (<0.001) shows that this relationship is statistically significant, which aligns with the expectation that teachers with higher psychological capital, which includes self-efficacy, optimism, hope, and resilience, are more inclined to engage in environmentally friendly behaviors. Furthermore, the coefficient of 0.40 represents the overall effect of Innovative Leadership on Teachers' Green Behavior, considering the indirect effect through Psychological Capital. The p-value (<0.001) indicates that the total effect is statistically significant. This result shows that Innovative Leadership positively impacts Teachers' Green Behavior, even when considering the mediation of Psychological Capital.

The coefficient of 0.15 represents the direct effect of Innovative Leadership on Teachers' Green Behavior without considering the mediation of Psychological Capital. The p-value (<0.001) confirms that this direct effect is statistically significant, which means that Innovative Leadership independently influences Teachers' Green Behavior positively. The coefficient of 0.25 represents the indirect effect of Innovative Leadership on Teachers' Green Behavior, mediated through Psychological Capital. The p-value (<0.001) shows that this indirect effect is statistically significant, which implies that part of the influence of Innovative Leadership on Teachers' Green Behavior operates through its impact on Psychological Capital. In other words, Innovative Leadership indirectly affects Teachers' Green Behavior by enhancing Psychological Capital. Overall, the results support Hypothesis 3, suggesting that Psychological Capital, including self-efficacy, optimism, hope, and resilience, mediate the relationship between Innovative Leadership and Teachers' Green Behavior. Innovative Leadership directly influences Teachers' Green Behavior and indirectly affects it by fostering Psychological Capital among teachers.

(Table 12) illustrates the results of (H4), which posits that teachers' Psychological Capital positively influences their engagement in green behavior within the workplace. The coefficient associated with Psychological Capital is 0.55. This coefficient indicates the strength and direction of the relationship between Psychological Capital and Teachers' Green Behavior. In this case, a coefficient of 0.55 suggests a positive relationship, which means that Teachers' Green Behavior is more likely to improve as Psychological Capital increases. In this context, it suggests that for every unit increase in Psychological Capital, there is an expected increase of 0.55 units in Teachers' Green Behavior. The p-value associated with the coefficient is <0.001. This p-value indicates the statistical significance of the relationship between Psychological Capital and Teachers'

Green Behavior. In this case, the p-value is less than 0.001, meaning the relationship is statistically significant. The results strongly support Hypothesis 4 (H4). The coefficient of 0.55 suggests a positive and statistically significant relationship between employees' Psychological Capital and their engagement in green behavior within the workplace. In simpler terms, when employees have higher Psychological Capital, which includes self-efficacy, optimism, hope, and resilience, they are more likely to exhibit environmentally friendly behavior at work. This finding can be justified by understanding that individuals with greater psychological resources tend to have a more positive and proactive outlook on their work environment. They are likely to feel more confident in their ability to make a positive impact (self-efficacy), have a more positive attitude (optimism), maintain a hopeful outlook, and effectively deal with challenges (resilience). These psychological attributes can collectively drive employees to engage in green behavior, such as energy conservation, waste reduction, or sustainable practices, as they feel empowered and optimistic about their ability to contribute to a greener workplace.

Discussion:

The study's findings provide valuable insights into the complex relationships between innovative Leadership, Psychological Capital, and teachers' green behavior within educational institutions. These results shed light on the critical role that leadership qualities and psychological resources play in shaping environmentally responsible actions among educators. The study's results demonstrate a significant positive relationship between innovative Leadership and teachers' green behavior. This finding underscores the importance of Leadership within educational institutions in driving sustainable practices. When teachers perceive their leaders as demonstrating innovative leadership qualities, such as originality, risk-taking, and sensitivity to problems, they are more likely to engage in environmentally responsible actions. Innovative leaders set an inspiring example and cultivate a culture of sustainability within their organizations. Their ability to introduce creative and sustainable ideas, raise environmental awareness, and implement green initiatives motivates and encourages teachers. Consequently, this alignment with innovative Leadership significantly contributes to creating a sustainable and eco-conscious educational environment. The positive relationship between innovative Leadership and teachers' green behavior highlights the need to foster innovative leadership qualities among educational leaders, which can lead to a more sustainable educational landscape. In organizational behavior and sustainability, innovative Leadership has emerged as a critical factor influencing employees' green behavior. Several studies have highlighted the positive relationship between innovative Leadership and environmentally responsible actions by employees (Scott & Bruce, 1994). Innovative leaders are characterized by their forward-thinking and creative approaches to management, which extend to addressing environmental concerns (Riza et al., 2020). They inspire and motivate teams by setting a compelling vision for a greener future, cultivating an organizational culture that values creativity and innovation, and encouraging employees to take calculated risks in adopting sustainable practices (Şen & Eren, 2012; Tanya, 2010). Moreover, innovative leaders allocate necessary resources and support green initiatives, ensuring employees' commitment to sustainability (Nzinga et al., 2021). Their data-driven and results-oriented approach monitors the impact of green initiatives and recognizes employee contributions, reinforcing the importance of green behavior (Bak et al., 2022).

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The study also reveals a robust connection between innovative Leadership and teachers' Psychological Capital. When educational leaders exhibit innovative leadership practices, teachers are more likely to experience heightened self-efficacy, optimism, hope, and resilience. These psychological resources enhance teachers' overall well-being and equip them with the mental fortitude to embrace innovative and environmentally friendly initiatives. Innovative leaders create an atmosphere where teachers feel empowered and optimistic about their ability to contribute positively to their work environment. As a result, educational institutions can benefit from nurturing a culture of innovation and providing leadership training that fosters innovative leadership qualities among educators, which, in turn, can lead to improved job satisfaction, enhanced well-being, and, ultimately, better educational outcomes. Leadership, particularly in the context of environmental sustainability, profoundly shapes individuals' behaviors within organizations (Cai et al., 2020). Leadership styles, including innovative Leadership, influence green behavior by fostering innovation and learning (Cai et al., 2020), supporting environmental suggestions (Farhadi Nejad et al., 2019), and promoting motivation for eco-friendly practices (Li et al., 2020). Transformational Leadership, in particular, catalyzes pro-environmental actions (Peng et al., 2020). Social learning theory posits that leaders serve as role models, with a positive correlation between the environmental behaviors of leaders and their subordinates (Bandura, 1986). Responsible leaders convey the importance of sustainability, establish sustainability goals, and guide employees toward sustainability, enhancing awareness and pro-environmental actions (Tian and Suo, 2021). Innovative Leadership, characterized by forward-thinking and creativity, inspires employees to embrace green behavior and fosters a culture of sustainability (Riza et al., 2020).

Innovative Leadership, rooted in creativity and forward-thinking, profoundly influences employees' green behavior within organizations (Scott & Bruce, 1994). Innovative leaders set a compelling vision for a greener future, cultivating an organizational culture that values creativity and innovation, encouraging risk-taking, allocating necessary resources for sustainability, empowering employees to participate in environmental initiatives, and celebrating successes (Şen & Eren, 2012; Sultana & Rahman, 2012; Tanya, 2010; Nzinga et al., 2021; Mamula et al., 2019). This leadership style goes beyond traditional approaches, promoting green behavior and environmentally responsible practices (Riza et al., 2020). Innovative Leadership has a direct positive influence on teachers' green behavior (H1). Moreover, it directly influences teachers' psychological capital, including self-efficacy, optimism, hope, and resilience (H2). Psychological capital, particularly self-efficacy, optimism, hope, and resilience, mediates the relationship between innovative Leadership and teachers' green behavior (H3). Innovative leaders empower teachers by instilling the confidence to tackle sustainability challenges, promoting optimism, nurturing hope, and fostering resilience (Al-Akkad, 2016; Bak et al., 2022). Psychological capital, encompassing self-efficacy, optimism, hope, and resilience, significantly influence employees' green behavior (H4). Self-efficacy motivates individuals to engage in environmentally responsible actions, while optimism leads to positive outcomes and proactive behaviors (Miao et al., 2018; Bak et al., 2022). Resilience enables individuals to adapt and sustain positive behaviors, and hope encourages the pursuit of goals and innovative solutions (Quick and Feldman, 2014; Rego et al., 2012).

Another crucial finding is the positive relationship between teachers' Psychological Capital and their engagement in green behavior. Teachers with higher Psychological Capital, which includes self-efficacy, optimism, hope, and resilience, are more inclined to exhibit environmentally friendly behavior within the workplace. Individuals with greater psychological resources tend to adopt a more positive and proactive outlook in their work environment. They have confidence in their ability to make a positive impact, maintain an optimistic attitude, exhibit hopefulness, and effectively cope with challenges. These psychological attributes collectively drive teachers to engage in green behavior, such as energy conservation, waste reduction, or sustainable teaching methods. This finding holds significant implications for educational institutions aiming to promote sustainability initiatives and environmentally friendly practices among their teaching staff. The positive relationship between employees' psychological capital and their engagement in green behavior is well-established (Ardichvili, 2011). Those with high self-efficacy believe in their capacity to make a difference, leading to active participation in sustainability initiatives (Avey et al., 2011). Optimistic individuals consider environmental challenges surmountable obstacles, motivating proactive behavior (REF). Hopeful employees actively pursue eco-friendly actions, while resilient individuals persist in green behavior despite difficulties (Zhu et al., 2022). Organizations that prioritize the development of psychological capital among their employees are likely to witness increased green initiatives and a more environmentally conscious workforce (Rego et al., 2012).

Furthermore, the study identifies the mediating role of Psychological Capital in the relationship between innovative Leadership and teachers' green behavior. Although there is a negative direct effect between Innovative Leadership and Psychological Capital, the overall relationship remains statistically significant. The negative direct effect suggests that leaders highly focused on innovation

may prioritize it over cultivating Psychological Capital among teachers. However, the mediating role of Psychological Capital is evident, as indicated by the positive relationship between Psychological Capital and Teachers' Green Behavior, highlighting the importance of innovative Leadership and Psychological Capital in promoting environmentally responsible actions among teachers. Psychological capital, comprising self-efficacy, optimism, hope, and resilience, is crucial in the relationship between innovative Leadership and employees' green behavior (Afshar Jahanshahi et al., 2021). Innovative leaders foster psychological capital by instilling confidence in employees' ability to make a positive environmental impact, encouraging them to view environmental challenges optimistically as opportunities, promoting resilience in the face of setbacks, and nurturing hope in pursuit of sustainability goals (Bandura, 1999; Rego et al., 2012). This psychological capital, in turn, empowers employees to engage in pro-environmental actions actively (Newman et al., 2014). In conclusion, the study's findings emphasize the intricate interplay between leadership qualities, Psychological Capital, and teachers' green behavior within educational institutions. Innovative Leadership and Psychological Capital emerge as critical factors in shaping environmentally responsible actions among educators.

Conclusion:

This study has delved into the intricate relationships between innovative Leadership, Psychological Capital, and teachers' green behavior within educational institutions, shedding light on critical leadership qualities and psychological resources in shaping environmentally responsible actions among educators. The findings provide several key takeaways:

Firstly, the study establishes a robust and positive relationship between innovative Leadership and teachers' green behavior. Educators who perceive their leaders as exemplifying innovative qualities, such as originality, risk-taking, and environmental sensitivity, are likelier to engage in environmentally responsible actions. Innovative leaders serve as inspiring examples and cultivate a culture of sustainability, motivating teachers to participate in green initiatives actively. Therefore, fostering innovative leadership qualities among educational leaders can significantly contribute to creating a sustainable and eco-conscious educational environment.

Secondly, the study identifies a significant connection between innovative Leadership and teachers' Psychological Capital. When educational leaders exhibit innovative leadership practices, teachers experience heightened self-efficacy, optimism, hope, and resilience. These psychological resources enhance teachers' well-being and empower them to embrace innovative and environmentally friendly initiatives, emphasizing the importance of nurturing a culture of innovation and providing leadership training that fosters innovative leadership qualities among educators, potentially leading to improved job satisfaction, well-being and better educational outcomes.

Thirdly, the study reveals a positive relationship between teachers' Psychological Capital and their engagement in green behavior. Teachers equipped with higher Psychological Capital, including self-efficacy, optimism, hope, and resilience, are more inclined to exhibit environmentally friendly behavior within the workplace. These psychological attributes collectively drive teachers to engage in green behavior, such as energy conservation, waste reduction, or sustainable teaching methods. This finding holds significant implications for educational institutions aiming to promote sustainability initiatives and environmentally friendly practices among their teaching staff.

Lastly, the study uncovers the mediating role of Psychological Capital in the relationship between innovative Leadership and teachers' green behavior. While a negative direct effect exists between Innovative Leadership and Psychological Capital, the overall relationship remains statistically significant, which suggests that leaders highly focused on innovation may prioritize it over psychological capital, but the mediating role of Psychological Capital is evident, highlighting its importance in promoting environmentally responsible actions among teachers.

In conclusion, this study underscores the critical interplay between leadership qualities, Psychological Capital, and teachers' green behavior within educational institutions. Innovative Leadership and Psychological Capital emerge as pivotal factors in shaping environmentally responsible actions among educators. The findings offer valuable insights for educators, leaders, and organizations seeking to promote environmentally responsible practices within educational settings.

Future Research:

Building upon the insights garnered from this study, future research in this domain can take several directions to enhance further our understanding of the relationships between Leadership, Psychological Capital, and green behavior:

Longitudinal Studies: Conducting longitudinal studies can help establish

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causality and examine how the relationships between innovative Leadership, Psychological Capital, and green behavior evolve. This approach can provide a deeper understanding of the long-term impact of Leadership and psychological resources on sustainability practices.

Cross-Cultural Analysis: Investigating these relationships across different cultural contexts can reveal whether the findings hold universally or if cultural factors influence the dynamics between Leadership, psychological resources, and green behavior. Comparing diverse educational systems and leadership styles can offer valuable insights.

Intervention Studies: Implementing leadership development programs within educational institutions and assessing their impact on leadership qualities and teachers' Psychological Capital and green behavior can provide practical insights into promoting sustainability practices.

Teacher Well-being: Exploring the connection between Psychological Capital and teacher well-being, beyond green behavior, can comprehensively understand how psychological resources contribute to educators' overall job satisfaction and performance.

Quantitative and Qualitative Research: Combining quantitative analyses with qualitative investigations, such as interviews and focus groups, can provide a holistic view of the intricate relationships between Leadership, psychological resources, and green behavior.

Leadership Styles: Investigating the impact of different leadership styles, in addition to innovative Leadership, on teachers' green behavior and Psychological Capital can offer a nuanced understanding of Leadership's role in sustainability initiatives.

Organizational Practices: Exploring the organizational practices and policies that support the development of innovative leadership qualities and Psychological Capital among educators can provide practical guidelines for educational institutions striving to promote sustainability.

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