Redefining Green Leadership: A Systematic Review and Innovative Model for Sustainable Organizations of Posterity

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Abstract

Purpose: Ab-initio this comprehensive review aims to delineate how visionary green leadership can significantly enhance sustainable practices within organizations. It critically examines the dynamic interface between emerging leadership strategies and sustainable organizational frameworks, that help establish a linkage with impact of green leadership on sustainability outcomes.

Design/ Methodology/ Approach: Adopting a meticulous and rigorous systematic review approach, this paper analyzes a carefully selected sample of 24 seminal research papers from the past decade filtered randomly by employing desk research on secondary data. These studies were chosen based on their scholarly impact and relevance, sourced from top-tier, double-blind peer-reviewed journals accessed through databases such as Google Scholar, EBSCO, JSTOR, MDPI, and Emerald. The methodology focuses on dissecting and synthesizing theoretical propositions and empirical findings to forge a robust understanding of green leadership's scope and effectiveness.

Findings: This review highlights a significant correlation between green leadership and enhanced organizational sustainability metrics, including environmental stewardship, stakeholder engagement, and sustainable corporate cultures. It identifies how green leaders successfully integrate sustainability into business strategies and operational practices, thereby driving substantial improvements in both ecological and social governance aspects.

Originality/ Value: This paper makes a novel contribution by providing a synthesized perspective on the evolution of green leadership within the academic cauldron, offering a unique consolidation of conceptual and empirical research. It identifies the theoretical and empirical gaps in the extant research thereby suggesting new avenues for research. More specifically, it is suggested to employ both stochastic and deterministic models in

furtherance of factor analysis to examine the definite impact of green leadership on sustainability metrics.

Rationality/ Significance: *The findings of this review are of paramount importance for contemporary and future organizational practices. By showcasing effective models of green leadership, the study provides actionable insights for leaders aiming to embed sustainability both within and outside their organizations. The review's implications are critical for evolving future leadership models that prioritize sustainability as a core organizational value that stride through complexities of the corporate Anthropocene.*

Introduction

Crafting to draft a blanket model of leadership (Barrow, 1977); (Bass, 1990); (Burke, 1979); (Halal, 1974); (Hollander, E.P & Julian, J.W, 1969); (Osborn, R. N, Hunt, J.G, & Jauch, L.R, 2002); (Sashkin, M & Garland, H, 1979); (Stogdill, 1974); (Yukl, 1989) is still elusive despite welter of research being pursued since langsyne. Indeed, leadership as a domain of erudite has witnessed colossal paradigms and transitions for more than a century. Yet the doctrines and philosophies seem to be undernourished and nonchalant. The core of leadership lies in "integrating (Kouzes, J. & Posner, B., 2012) the past with the future mellowed through the current magnitude" of influencing the organizational inputs. Current precepts and practices of leadership predominantly are myopically unidimensional and dyadic, while leveraging social and environmental considerations (Mehra, A, Smith, B.R., & Dixon, A.L., 2006); (Hoppe, B & Reinelt, C., 2010) unheeded grossly. Perhaps, a comprehensive and multifaceted leadership approach, that surge into the helix of challenges and limitations as a global phenomenon to ensure organizational and environmental harmony is yet to be grounded.

The literature on strategic and shared leadership, although expansive, consistently lowballs the influence of organizational complexity and external volatility (Pearce, C.L, Cogner, J.A, & Locke, E.A., 2008a); (Uhl-Bien, M & Marion, R., 2009). Research routinely avowals the positive impact of leadership dispersion on organizational performance (Hmieleski, K.M., Cole, M.S., & Baron, R.A., 2012) with a scant attention to contingencies. During organizational crises, the emergent need for decisive leadership often precipitates a reversion to hierarchical leadership models (Hambrick, D.C & Mason, P.A, 1984) during periods of significant uncertainty or threat (Mitroff, 2000); (Tushman, M.T & Romanelli, E., 1985) autocratic decision-making, underscoring the situational efficacy of centralized leadership. This phenomenon accentuates the necessity for a more dynamic leadership model that effectively integrates both vertical and shared leadership paradigms, (Waldman, D.A, Ramirez, G.G, House, R.J, & et al, 2001) recognizing them not as discrete but as potentially concurrent forces.

This paper proposes a distinct model to lead the organizations of tomorrow in the form of green leadership that is expected to sync with nuances of future organizational resilience and environmental sustenance. Green leadership assumed to be inherently linked with eco-friendly behavior of a leader, (Larson, L.R, Stedman, R.C., Cooper, C.B., & Decker, D.J., 2015) driving organizations towards holistic environment (Miller, W.C & Miller, D.R., 2011) with special focus on organizational networking, work-life balance, recycling, water and energy conservation policy framework (Stanef-Puică, M. R, et al., 2022).

Inundating evidence from the priori research reveals the conventional leadership practices as stereotyped and doctrinaire vehemently pushing organizational members to dismay despite being unsavory and untoward the environmental and societal inequities. Juxtaposing the yore, green leadership offers an architype towards a more equitable and sustainable future (Waddock, 2019). Green leaders initiate a mindset (Graves, L.M. & Sarkis, J., 2018); (Robertson, J.L, 2018); (Robertson, J.L. & Barling, J., 2017); (Salim, N., Ab Rahman, M.N., & Abd Wahab, D., 2019); (Singh, S.K., Giudice, D.M., Chierici, R., & Graziano, D., 2020) (Wang, X.D., Zhou, K., & Liu, W.X., 2018) that is determined by the attention, awareness and sensitivity on the conspicuity of organizational climate (Norton, T.A, Parker, S.L., Zacher, H, & Ashkanasy, N.M., 2015); (Kura, K.M., 2016) and organizational members (Maziriri, E.T. & Saurombe, M.D., 2018). The emergence of green leadership is timely and valuable epoch-making contribution to create a sustainable environment (Mittal, S. & Dhar, R.L., 2016). In fact, leaders under this regime, will try to create, influence and encourage the policies that protect the macro environment by conjugating behavior of each unit (Ones, D.S. & Dilchert, S., 2012) that is committed for universal care. This thematic review posits green leadership as a critical linchpin in the quest for 'role model leadership for organizational sustainability.

Evoking green leadership fosters the culture of employee commitment (Tripathi & Rao, 2016) to environment that in turn impact the organizational sustainability and social well-being. Redefining the green leadership that explicates environmental safeguards (Torpp, Q dan Rod. K.O., 2017) (KARDQYO, K., FERIADY, M., FARLIANA, N., & NURKHIN, A., 2020) without being detrimental to organizational outcomes and strike a happy balance with employee engagement.

Effective green leaders demonstrate allegiance to sustainability by nurturing a culture of innovation, collaboration, and accountability and informed decision-making (Doppelt, 2017). This novel leadership approach assumes to toe-the-line substantially and adaptable with environmental change (Caldwell, 2012). Some exemplary case studies of organizations with green leadership practices highlight the tangible benefits of sustainability initiatives, including cost savings, enhanced reputation, (Boiral, O, C. Baron, & O. Gunnlaugson, 2014) stakeholder engagement and high team spirit. Organizational members feel valued, engaged, and empowered (Siddiqui, S.H. & Javeria, A, 2022) due to such cultural shift, driven by intelligible green leadership (Nahar, Rao, P.C.K., & Nigah, R.K., 2021), and contribute better towards sustainability goals (Ehnert, F., et al., 2018). The contemporary organizations defy and suppresses the conventional

models of leadership (Khalil N.S. & Aslani, A.A., 2018) by their novel strategies (Song, W. & Yu, H, 2018) shedding on global environmental considerations (Steg, L & Vlek, C, 2009) to mitigate the negative impact of socio-political as well as technological disruption, that inspires employee engagement (Mesmer-Magnus, J.R, Asencio, R., Seely, P.W., & DeChurch, L.A., 2018).

Objectives & Research Questions

As a precursor to advance into the conceptual model of green leadership, it is inevitable to draw the objectives of the present survey. Some of the obvious objectives and research questions that justify the review and lay the groundwork for future studies are furnished in the table here under:

Objectives of the Paper	*Research Questions*
1. To critically review and synthesize existing literature on green leadership to identify core practices and strategies that influence organizational sustainability metrics. (This aims to define the basic constitutes of 'green leadership' before formulating a conceptual model)	1. What key green leadership practices identified in the literature are linked to sustainability challenges in organizations? (This supports to define and categorize green leadership practices and link them to their effects.)
2. To explore the relationship between green leadership practices with that of the organizational and external indicators that help measure their overall impact. (This seeks to link green leadership behavior of employees and stakeholders that benefit the organizational outcomes and helps in suggesting hypothesis to be tested through empirical studies.)	2. In what way the green leadership practices influence organizational members in driving / discouraging to achieve sustainability goals? (This aims to establish a correlation between leadership actions with that of its members and stakeholders that guide in determining valid indicators to investigate.)
3. To identify gaps in the current research on green leadership, particularly in how it integrates with and impacts organizational structures and processes, to suggest areas for future empirical studies. (This is designed to highlight the solid and valid deficiencies in current literature that could be addressed in the conceptual model.)	3. Is there any laxity found in the previous research studies on green leadership that fail to explain its integration with sustainability issues of organizational strategies and operations? (This helps in identifying research gaps that the proposed model could address, highlighting areas of lacking sufficient investigation.)
4. To propose a comprehensive conceptual model based on the review, outlining how green leadership can be operationalized and measured within organizations. (The focus is on constructing a robust, testable model that researchers and practitioners can use to assess the impact of green leadership on organizational sustainability.)	4. Based on the synthesized literature, what elements should be included in a conceptual model of green leadership that are amenable to empirical testing? (This aims to gather insights from the review to construct a model that includes testable hypotheses about the effects of green leadership.)

Summarized Literature Review

Title and Authors	Objectives and Variables Tested	Methodology	Findings	Gaps in the Research	Suggestions for Future Research
1. Achieving Environmental Sustainability through Green Transformational Leadership Policy: Can Green Team Resilience Help? (Cop, S., Olorunsola, V.O., & Alola, U.V., 2020)	To explore how green transformational leadership (GTL) can foster green team resilience (GTR) within organizations, specifically within the hospitality industry, through the mediating role of green work engagement (GWE). - Variables: - Independent Variable: Green transformational leadership (GTL) - Mediating Variable: Green work engagement (GWE) - Dependent Variable: Green team resilience (GTR)	Participants: 351 employees from four and five-star hotels in Turkey. Questionnaires used to measure GTL, GWE, and GTR Structural Equation Modeling (SEM) with Amos 20 to test the hypothesized relationships.	GTL positively influences GWE: Leaders who engage in GTL practices enhance the level of work engagement focused on environmental sustainability among employees. - GWE mediates the relationship between GTL and GTR: Employees engaged in green work activities are more resilient, mediating the impact of GTL on GTR. GTL positively affects GTR: The overall finding indicates that GTL significantly fosters GTR when mediated by GWE, suggesting that leadership style is critical in enhancing team resilience against environmental challenges	Industry-Specific Data: The study was confined to the hospitality industry in Turkey, which may limit the generalizability of the findings to other sectors and geographical locations. - Cross-Sectional Design: The use of a cross-sectional approach limits the understanding of the changes over time in GTL, GWE, and GTR	Longitudinal Studies: Future research could employ a longitudinal design to track changes and developments over time regarding green leadership and team resilience. - Diverse Industries: Expanding the research to include various industries could validate whether the findings are applicable across different contexts. - Geographical Expansion: Conducting similar studies in other regions would help in understanding cultural impacts on green transformational leadership and team dynamics.
2. A Conceptual Framework on Finding the Nexus Between Sustainability and Desired Outcomes for Smart Cities – The Moderating Role of Green Leadership (Amoako, G.K., Obuobisa-Darko, T., Dartey-Baah, K., & Sedalo, G., 2023)	To develop a conceptual model exploring how green leadership can moderate the relationship between smart city sustainability activities and the desired outcomes in urban development, particularly focusing on the tourism and hospitality industry. - Variables: - Independent Variable: Smart and sustainability activities in cities - Moderating Variable: Green leadership - Mediating Variable: Stakeholder management - Dependent Variables: Desired outcomes for smart cities (e.g., economic growth, environmental sustainability)	Approach: Non-empirical, literature review to develop a conceptual framework - Data Sources: Secondary research including scholarly journals, books, and electronic resources across disciplines relevant to urban planning, sustainability, and smart cities - Analytical Techniques: Synthesis of existing literature to propose a conceptual model	Framework Development: The conceptual model suggests that green leadership can effectively moderate and enhance the positive impacts of smart and sustainable city activities on desired urban outcomes. - Role of Green Leadership: Identified as a key enabler in linking sustainability activities to positive outcomes in smart cities by engaging effectively with stakeholders and promoting sustainable practices.	Empirical Validation Needed: The model is conceptual and requires empirical testing to verify its applicability and validity. - Limited Scope: The framework is primarily developed with focus on the tourism and hospitality industries and may not be directly applicable to other sectors or less developed urban environments	Empirical Studies: Future research should focus on empirically testing the proposed model in various urban contexts and industries to validate and refine the framework. - Expand Scope: Researchers should consider applying the conceptual model in different geographical regions and sectors to assess its broader applicability and impact. - Incorporate Qualitative Data: To gain deeper insights into the mechanisms through which green leadership influences urban sustainability outcomes

3. Relationship between Green Leaders' Emotional Intelligence and Employees' Green Behavior: A PLS-SEM Approach (Hu, X., et al., 2023)	To examine the relationship between green leadership (GL) and employees' green organizational citizenship behavior (GOCB), with a focus on leaders' emotional intelligence (EI) as a mediating variable. - Variables: - Independent Variable: Green Leadership (GL) - Mediating Variable: Leaders' Emotional Intelligence (EI) - Dependent Variable: Employees' Green Organizational Citizenship Behavior (GOCB)	Sample Size and Composition: 422 employees from the manufacturing and service sectors in Karachi, Lahore, and Islamabad, Pakistan. - Data Collection Method: Survey using structured questionnaires. - Analytical Method: Partial Least Squares Structural Equation Modeling (PLS-SEM)	Direct Effects: Green leadership significantly influences employees' green behaviors. - Mediating Effects: Leaders' emotional intelligence mediates the relationship between green leadership and employees' green behaviors, enhancing the influence of green leadership. - Emphasizes the importance of cultivating leaders' emotional intelligence to enhance green organizational citizenship behaviors among employees. - Suggests that organizations should focus on developing green leadership capabilities to promote sustainable environmental behaviors.	Geographic and Industry Limitation: The study is limited to specific cities and sectors in Pakistan, which may affect the generalizability of the findings. - Cross-sectional Design: The design limits the ability to infer causality	Expand Geographic and Sector Scope: Future research could explore these dynamics in different industries and regions. - Incorporate Longitudinal Design: Employing longitudinal designs would help understand the dynamics of these relationships over time.
4. Consequences of Green Transformational Leadership: Insights on Resort Employees at Marsa Alam (Khalil, G.G.A. & Abdullah, H.S., 2023)	To explore the effects of green transformational leadership (GTL) on resort employees in Marsa Alam, focusing on the mediating role of organizational citizenship behavior for the environment (OCBE) in enhancing employee green creativity (EGC). - Variables: - Independent Variable: Green transformational leadership (GTL) - Mediating Variable: Organizational citizenship behavior for the environment (OCBE) - Dependent Variable: Employee green creativity (EGC)	Participants: 338 employees from deluxe resorts in Marsa Alam, Egypt. - Data Collection: Questionnaires used to measure GTL, OCBE, and EGC. - Analytical Method: Structural Equation Modeling (SEM) to test the hypothesized relationships.	GTL and Employee Motivation: GTL was found to significantly motivate employees towards environmental sustainability, leading to higher levels of OCBE and subsequently enhancing EGC. - Mediating Role of OCBE: OCBE effectively mediated the relationship between GTL and EGC, indicating that GTL leads to enhanced environmental behaviors and creativity through OCBE.	Focus on Specific Region: The study focused exclusively on Marsa Alam, which may limit the generalizability of the findings to other regions or types of resorts. - Cross-sectional Design: The cross-sectional nature of the study limits the understanding of the long-term impact of GTL on employee behavior.	Longitudinal Studies: Future research could employ a longitudinal design to track changes and developments over time regarding GTL, OCBE, and EGC. - Wider Geographic Scope: Expanding the study to include various types of resorts in different regions could help in understanding the broader applicability of the findings
5. The Impact of Green Transformational Leadership, Green	To analyze how Green Transformational Leadership (GTL), Green Human Resource	Sample: Employees from the manufacturing sector in China. - Data Collection:	Direct Associations: GTL, Green HRM, and Green Innovation showed significant and direct	Sector and Geographic Specificity: The study focuses on the manufacturing sector in	Expand Geographic and Sector Scope: Future studies could explore these dynamics in

HRM, Green Innovation, and Organizational Support on the Sustainable Business Performance: Evidence from China (Zhao, W. & Huang, L., 2022)	Management (HRM), and Green Innovation impact the sustainable business performance of manufacturing organizations in China, with a focus on the moderating role of perceived organizational support. - Variables: - Independent Variables: Green Transformational Leadership (GTL), Green HRM, Green Innovation - Moderating Variable: Organizational Support - Dependent Variable: Sustainable Business Performance	Questionnaire method. - Analytical Method: Structural Equation Modeling (Smart-PLS) used to test the hypotheses.	positive associations with sustainable business performance. - Moderating Role of Organizational Support: Organizational support significantly moderates the relationships between GTL, Green HRM, Green Innovation, and sustainable business performance, enhancing these effects. This study provides insights for manufacturing firms on the importance of integrating green practices and leadership styles to enhance sustainable performance. It also underscores the role of organizational support in enhancing the effectiveness of green initiatives	China, which may limit the applicability of the findings to other sectors or geographic regions. - Cross-sectional Nature: The use of a cross-sectional design limits the ability to determine causality and dynamics over time.	different sectors and regions to enhance the generalizability of the findings. - Longitudinal Studies: To better understand the dynamics over time and confirm the causality of the relationships studied
6. Linking Environmental Transformational Leadership, Environmental Organizational Citizenship Behavior, and Organizational Sustainability Performance: A Moderated Mediation Model (Althnayan, S., Alarifi, A., Bajaba, S., & Alsabban, A., 2022)	To explore how Environmental Transformational Leadership (ETL) influences Organizational Sustainability Performance (SP), mediated by Environmental Organizational Citizenship Behavior (EOCB), and moderated by employees' Work Passion (WP). Independent Variable: Environmental Transformational Leadership (ETL) - Mediating Variable: Environmental Organizational Citizenship Behavior (EOCB) - Moderating Variable: Work Passion (WP) - Dependent Variable: Organizational Sustainability Performance (SP)	Sample Size and Composition: 240 full-time employees in Saudi Arabia's petrochemical industries. - Data Collection Method: Survey questionnaires. - Analytical Method: Hierarchical regression analysis to test the proposed hypotheses.	ETL and EOCB: ETL significantly influences EOCB, which in turn, positively impacts SP. - Mediating Role of EOCB: EOCB mediates the relationship between ETL and SP. - Moderating Role of WP: WP moderates the relationship between ETL and EOCB, enhancing the impact of ETL on EOCB and thus on SP through EOCB - Organizations should foster ETL to enhance EOCB and subsequently improve SP. - Enhancing employees' work passion could further leverage the positive effects of ETL on sustainability performance.	Geographic and Industry Limitation: The study focuses on the petrochemical industry in Saudi Arabia, which may affect the generalizability of the findings to other industries or regions. - Cross-sectional Design: The study's design limits the ability to infer causation and dynamics over time.	Expand Industry and Geographic Scope: Future research could explore these dynamics in different industries and regions to enhance the generalizability of the findings. - Longitudinal Studies: Employing longitudinal designs would help in understanding the dynamics of these relationships over time.
7. Role of Green Leadership and Green Training on Green Process Innovation:	To investigate the role of green leadership and green training on green process innovation through the mediating role of green	Sample Size and Composition: 158 employees from 54 hotels (3-5 stars) in Pakistan. - Data Collection Method: Self-	Direct Effects: Both green leadership and green training were found to significantly predict green process innovation.	Geographic Limitation: The study focuses solely on the hotel industry in Pakistan, which may limit the	Broader Geographic and Sector Scope: Future research should extend to other sectors and regions to enhance the

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Mediation of Green Managerial Innovation (Jamshed, Shah, Al-Ghazali, Majeed, & Jamshaid, 2022)	managerial innovation, specifically within the hotel industry in Pakistan. Independent Variables: Green Leadership, Green Training -Mediating Variable: Green Managerial Innovation - Dependent Variable: Green Process Innovation	administered questionnaire. Analytical Method: Descriptive statistics, correlation testing, and multiple linear regression analyses performed using SPSS	- Mediating Effect: Green managerial innovation significantly mediates the effects of green leadership and green training on green process innovation. The study provides insights for hotel managers on the importance of green leadership and training in fostering green process innovations. - Emphasizes the role of managerial practices in mediating the relationship between leadership training and innovative outcomes.	generalizability of the findings to other regions or industries. - Cross-sectional Design: The study's design limits the ability to infer causality and examine changes over time.	generalizability and applicability of the findings. -Longitudinal Design: Implementing longitudinal studies would help in understanding the dynamics of these relationships over time
8. Leadership Roles for Sustainable Development: The Case of a Malaysian Green Hotel (Ahmed, M.F., Mokhtar, M.B., Lim, C.K., Hooi, A.W.K., & Lee, K.E., 2021)	To examine the leadership roles in supporting environmental policies through green hotel practices, using the Frangipani Hotel in Langkawi, Malaysia as a case study. - Variables: - Independent Variable: Transformational leadership roles - Dependent Variables: Environmental and socio-economic conditions of the locality	Data Collection: Extensive literature reviews and interviews with the managing director, general manager, and heads of 10 operating branches of the Frangipani Hotel, as well as public and private business and community stakeholders. - Analytical Method: Qualitative analysis of interviews and review data.	Leadership Impact: The leadership at Frangipani Hotel has effectively integrated green practices through a zero-waste concept and circular economy, significantly improving both environmental and socio-economic conditions locally. - Stakeholder Collaboration: Effective multi-stakeholder collaboration facilitated by transformational leadership roles has been crucial in promoting quality control and assurance of green practices - The study illustrates the importance of transformational leadership in implementing and sustaining green practices within the hospitality industry, which can serve as a model for other hotels.	Limited Scope: The study focuses only on one hotel, which may limit the generalizability of the findings. - Lack of Quantitative Data: The research predominantly relies on qualitative assessments, which could benefit from supplementary quantitative data.	Expand Studies to Other Hotels: To verify the findings, similar studies could be conducted in other hotels or different sectors. - Incorporate Quantitative Measures: Future research could include quantitative measures to assess the impact of leadership roles on environmental and economic outcomes more concretely.
9. The Influence of Green Transformational Leadership and Motivation to Sustainable Corporate Performance with Organizational	To assess the impact of Green Transformational Leadership (GTL) and motivation on Sustainable Corporate Performance, using Organizational Citizenship Behavior for the Environment (OCBE) as a mediating variable.	Sample Size and Composition: 40 employees from PT Karya Mandiri Sukses Sentosa, a digital printing distributor company in Jakarta. - Data Collection Method: Questionnaire - Analytical Method: Structural	- GTL significantly influences Sustainable Corporate Performance both directly and through the mediation of OCBE. - Motivation also significantly impacts Sustainable Corporate Performance, both directly and mediated by OCBE.	- Limited Sample Size: The study is limited to 40 employees, which may affect the generalizability of the results. - Single Company Focus: The findings are based on a single company, limiting broader	- Expand Sample Size and Diversity: Future studies should include a larger and more diverse sample to enhance generalizability. - Longitudinal Study: Implementing a longitudinal study design could provide

				application without additional research.	insights into the changes and long-term effects of GTL and motivation on corporate performance.
Citizenship Behavior for the Environment as a Mediating: Case Study at PT Karya Mandiri Sukses Sentosa" (Widisatria, D. & Nawangsari, L.C., 2021)	- Variables: - Independent Variables: Green Transformational Leadership, Motivation - Mediating Variable: Organizational Citizenship Behavior for the Environment (OCBE) - Dependent Variable: Sustainable Corporate Performance	Equation Modeling (SEM) using PLS	- OCBE plays a critical role in mediating the effects of both GTL and motivation on Sustainable Corporate Performance. The study highlights the importance of GTL and motivation in enhancing sustainable corporate performance and suggests that companies invest in fostering OCBE among employees to achieve better environmental and organizational outcomes.		
10. The Impact of Environmental Leadership on Entrepreneurial Success: The Moderating Role of Green Organizational Behavior (Abbas, A.A. & Al Hasnawi, H.H., 2021)	To examine how environmental leadership impacts entrepreneurial success with a specific focus on the moderating role of green organizational behavior. - Variables: - Independent Variable: Environmental leadership - Moderating Variable: Green organizational behavior - Dependent Variable: Entrepreneurial success	Participants: 874 employees from the General Company for Southern Cement in Iraq. - Data Collection: Survey methodology using electronic questionnaires. - Analytical Methods: Descriptive statistics, confirmatory factor analysis (CFA), and hierarchical multiple regression.	Environmental Leadership: Found to positively influence entrepreneurial success directly and also through enhancing green organizational behavior. Green Organizational Behavior: Exhibited a moderating effect, enhancing the impact of environmental leadership on entrepreneurial success. Statistical Analysis: Strong support for the hypothesis with detailed model fit indicators provided from the CFA results. Demonstrates the importance of environmental leadership and green organizational behaviors in achieving entrepreneurial success, suggesting that companies should foster these attributes to enhance performance and sustainability	Industry Specific: The focus is solely on the cement industry in Iraq, which may limit the generalizability of the findings. - Cross-Sectional Design: The use of a cross-sectional study limits the ability to infer causation and long-term effects.	Broader Industry Application: Future studies could extend this research to other sectors and geographical locations. - Longitudinal Studies: To better understand the dynamics and causal relationships over time.
11. How GHRM is related to green creativity? A moderated mediation model of green transformational leadership and green perceived organizational support	To examine how Green Human Resource Management (GHRM) practices affect employees' green creativity, with a focus on the mediating role of Green Perceived Organizational Support (Green POS) and the moderating role of Green Transformational	Participants: 201 supervisors and their 428 subordinates from companies in the grocery, food, and personal care products industries in Pakistan. - Data Collection: Survey questionnaire - Analytical Method: Structural	Green POS as a Mediator: Green POS was found to mediate the relationship between GHRM practices and employees' green creativity, suggesting that GHRM practices that foster a supportive environment can enhance creative green behaviors.	Geographic and Industry Limitation: The study was limited to specific industries in Pakistan, which may affect the generalizability of the findings to other regions and industries. - Cross-sectional Design: The	Broaden Geographic and Industry Scope: Future research could examine these relationships in different industries and regions to enhance the generalizability of the findings. - Longitudinal Studies:

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(Hameed, Z., et al., 2021)	Leadership (Green TFL). - Variables: - Independent Variable: GHRM practices - Mediating Variable: Green Perceived Organizational Support (Green POS) - Moderating Variable: Green Transformational Leadership (Green TFL) - Dependent Variable: Green creativity	Equation Modeling (SEM) to test the relationships between the variables.	- Green TFL as a Moderator: Green TFL positively moderates the relationship between GHRM practices and Green POS, enhancing the effect of GHRM on Green POS and consequently on green creativity. Organizations should implement GHRM practices that support environmental goals to foster green creativity among employees. Leadership that supports and guides employees in environmental initiatives can enhance the impact of these practices	cross-sectional nature of the study limits the ability to draw causal inferences.	Employing longitudinal designs would help in understanding the dynamics of these relationships over time.
12. Global Leadership for Sustainability (Fry, L.W. & Egel,E., 2021)	To propose a model of Global Leadership for Sustainability (GLfS) that extends beyond current leadership models by incorporating spiritual and being-centered leadership theories, focusing on the roles of self-transcendence, interconnectedness, and a global mindset in fostering sustainability. - Key Concepts: - Global Leadership for Sustainability (GLfS): Integrates spiritual qualities into leadership for sustainability. - Spiritual Qualities: Self-transcendence and interconnectedness, essential for fostering sustainability.	Approach: Theoretical, building upon existing literature in leadership and sustainability to propose a new conceptual framework. - Data Sources: Extensive review of scholarly articles, books, and credible sources discussing leadership, sustainability, and spiritual theories	Conceptual Model: Proposes that the spiritual qualities of self-transcendence and interconnectedness are foundational for sustainability and sustainable development. - Leadership Characteristics: Emphasizes the need for leaders to cultivate a global mindset that incorporates ethical principles and a deep understanding of their role in achieving sustainability.	Lack of Empirical Data: The framework is theoretical and needs empirical testing to validate the effectiveness and applicability of the proposed leadership model. - Limited Industry Focus: The application to specific industries or organizational types is not detailed, which may limit practical implementation insights.	Suggestions for Future Researchers - Empirical Testing: Future studies should aim to empirically test the proposed model in various organizational and cultural contexts. - Expansion to Various Contexts: Researchers should apply the model across different sectors and regions to explore its adaptability and impact
13. Environmental Issues as an Indispensable Aspect of Sustainable Leadership (Woo, E.J. & Kang, E., 2020)	To explore the integration of environmental issues within the context of sustainable leadership, focusing on the development of consciousness in business sectors and the critical roles of top management in incorporating	Approach: The study is theoretical, relying on a review of literature pertaining to environmental leadership, sustainable leadership, and corporate sustainability. - Analytical Techniques:	Role of Leadership: Leadership is seen as pivotal in mediating change within organizations, with a focus on sustainable and environmental leadership driving business practices that are environmentally sound. - Importance of Environmental	Lack of Empirical Data: Being a conceptual paper, it lacks empirical data to support the proposed theories and frameworks. - Limited Focus on Specific Industries: While the	Empirical Studies: Future research should empirically test the proposed frameworks in diverse organizational contexts. - Expand Industry Focus: Examination of the framework's applicability

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environmental leadership	Synthesis of existing literature to propose a framework that links sustainable leadership with environmental stewardship and business strategy.	Consciousness: The paper underscores the need for a heightened consciousness about environmental sustainability in all business operations, led by top management.	discussion is broad, specific examples from varied industries would strengthen the argument.	across different industries and more diverse geographic locations could enhance the generalizability of the findings.
14. How Green Transformational Leadership Influences Sustainability: Mediating Effects of Green Creativity and Green Procurement (Shah, A.K., Sukamani, D., & Kusi, M., 2020)	To explore how Green Transformational Leadership (GTL) influences sustainability in the construction industry through the mediating effects of Green Creativity (GC) and Green Procurement (GP). - Variables: - Independent Variable: Green Transformational Leadership (GTL) - Mediating Variables: Green Creativity (GC) and Green Procurement (GP) - Dependent Variable: Sustainability in construction industry	Participants: 305 project team members from construction firms in Nepal. - Data Collection: Survey questionnaire - Analytical Method: Structural Equation Modeling (SEM) using SPSS 25.0 and AMOS 24.0	Direct Effects: GTL has direct positive effects on both GC and GP, and subsequently on sustainability. - Mediating Effects: Both GC and GP serve as partial mediators in the relationship between GTL and sustainability, highlighting that while GTL directly contributes to sustainability, its impact is significantly enhanced through creative and procurement practices. The study provides valuable insights for construction industry leaders on leveraging GTL to enhance sustainability practices through creativity and procurement strategies	Geographic Limitation: The study focused only on Nepal, which may limit the generalizability of the findings to other regions. - Industry-Specific Data: The research is limited to the construction industry, which may not translate directly to other sectors.	Expand Geographic Scope: To enhance generalizability, future research should include multiple countries and regions. - Broaden Industry Focus: Investigate the effects of GTL in other sectors to understand its broader implications. Longitudinal Study: To better understand the dynamics over time and the lasting impacts of GTL on sustainability.
15. Influence of the Green Leadership Toward Environmental Policies Support (KARDOYO, K., FERIADY, M., FARLIANA, N., & NURKHIN, A., 2020)	To explore the role of green leadership in supporting environmental policies at universities, focusing on the mediation effects of green self-efficacy, green mindfulness, organizational identity, and environmental responsibility. - Variables: - Independent Variable: Green Leadership - Mediating Variables: Green Self-Efficacy, Green Mindfulness, Organizational Identity, Environmental Responsibility - Dependent Variable: Support for Environmental Policies	Sample Size and Composition: 312 respondents from a population of 1456 lecturers and staff at Universitas Negeri Semarang, Indonesia. - Data Collection Method: Survey questionnaire - Analytical Method: Structural Equation Modeling (SEM)	Green leadership significantly influences support for environmental policies, environmental responsibility, green mindfulness, and green self-efficacy but shows an insignificant influence toward organizational identity. - Environmental responsibility and green mindfulness have strong mediation effects, whereas organizational identity and green self-efficacy have weak mediation effects on the support for environmental policies. Emphasizes the importance of green leadership in enhancing support for environmental policies at educational institutions.	Geographic and Institutional Specificity: The study is focused on a single university, which may affect the generalizability of the findings to other universities or contexts. - Limited Direct Influence on Organizational Identity: The findings show an insignificant direct influence of green leadership on organizational identity, suggesting potential gaps in the theoretical framework or implementation	Broader Geographic and Institutional Scope: Future research should include multiple universities or different types of institutions to enhance the generalizability of the findings. - In-depth Analysis of Ineffective Mediators: Further research might explore why certain mediators like organizational identity do not strongly link green leadership to policy support.

			- Suggests that institutions enhance aspects of green mindfulness and environmental responsibility to better leverage green leadership for policy support		
16. The Effect of Green Transformational Leadership on Organizational Citizenship Behavior in Egypt (Srour, C.K.G.ElK., Kheir-El-Din, A., & Samir, Y.M., 2020)	To investigate the impact of Green Transformational Leadership (GTL) on Organizational Citizenship Behavior (OCB) of Information Technology (IT) employees in Egypt. - Variables: - Independent Variable: Green Transformational Leadership (GTL) - Dependent Variable: Organizational Citizenship Behavior (OCB), with dimensions like civic virtue, voice, helping, employee sustainability, and social participation.	Sample: 378 IT employees working for Egyptian owned organizations. - Data Analysis Techniques: Spearman's rank correlation coefficient and Multiple Linear Regression Analysis to test the research hypotheses.	Significant Relationships: All dimensions of GTL had significant effects on all dimensions of OCB. - Key Contributions: This paper emphasizes the connection between GTL and OCB, adding to the theoretical understanding needed to develop green leadership styles and enhance OCB.	Specific Sector and Region Focus: The study is focused on IT employees in Egypt, which might limit its applicability to other sectors or geographic areas. - Cross-sectional Nature: As with many similar studies, the cross-sectional design limits the ability to infer causation from the correlations observed.	Broader Sector and Geographic Scope: Future studies could extend to different sectors and other regions to confirm the findings and enhance their generalizability. - Longitudinal Studies: To better understand the causality and long-term effects of GTL on OCB.
17. Bridging the Way Towards Sustainability Performance through Safety Empowerment and Learning (Sulasmi, E., Agussani, & Tanjung, H., 2020)	To examine the impact of sustainable leadership on sustainability performance in the footwear industry of Indonesia, focusing on the mediating roles of psychological safety, structural empowerment, and organizational learning. - Variables: - Independent Variable: Sustainable Leadership (SL) - Dependent Variable: Sustainability Performance (SP) - Mediating Variables: Psychological Safety, Structural Empowerment, Organizational Learning	Research Design: Quantitative, survey-based research. - Sample: Management and workers from the footwear industry in Indonesia. - Data Analysis Techniques: Structural Equation Modeling (SEM) to test hypotheses regarding the relationships among the variables.	Impact of Sustainable Leadership: Significant positive influence on sustainability performance, mediated by psychological safety, structural empowerment, and organizational learning. - Role of Mediators: Each mediator (psychological safety, structural empowerment, organizational learning) significantly influences the relationship between sustainable leadership and sustainability performance.	Industry and Regional Focus: The study focuses solely on the footwear industry in Indonesia, which may limit its applicability to other industries or regions. - Lack of Qualitative Data: The study primarily relies on quantitative data, which might miss nuanced insights that qualitative data could provide	Expanding Industry and Geographical Scope: Future research could explore similar models in different industries and regions to enhance the generalizability of the findings. - Incorporating Qualitative Research: Future studies could integrate qualitative methods to gain deeper insights into the dynamics of sustainable leadership and its impact on organizational outcomes
18. Behavioral	Objective: To identify the critical	Design: Quantitative analysis	Identified Competencies: Ten	Sample Size: The study	Further Validation: Future

Competencies of Sustainability Leaders: An Empirical Investigation (Paterson, F. & Knight, B., 2018)	behavioral competencies required for effective leadership in sustainability initiatives within corporate organizations. - Variables: - Behavioral competencies grouped into five (Results driven, inclusive operator, change agent, ethically oriented visionary thinker) categories based on empirical literature. These competencies highlight various aspects of leadership that are deemed critical for effective sustainability leadership, capturing the multifaceted nature of the roles within this field.	using a self-report tool complemented by colleague assessments. - Participants: 97 corporate sustainability leaders. - Data Analysis: Behavioral competencies were quantified and analyzed to determine the impact of factors like business sector, location, years of experience, and level of qualification on perceived leadership effectiveness. Quantitative Model: The study provides a quantitative approach to assessing behavioral competencies in sustainability leadership, offering a tool for leaders to assess and monitor their progress over time.	critical and ten prominent behaviors were identified across the five competency groupings. - Impact of Demographic Factors: Analysis included how different factors affected the sustainability leaders' effectiveness. Leadership Development: The findings can help tailor leadership development programs and improve recruitment processes for sustainability leaders by focusing on identified competencies.	acknowledges that the derived competency model is propositional and requires further validation due to the limited sample size. - Lack of Impact Measures: The inclusion of impact measures could strengthen the findings by providing more concrete evidence of competency effectiveness	research should aim to validate the competency model with a larger sample size. - Inclusion of Impact Measures: Incorporating impact measures could provide a more robust assessment of how these competencies affect sustainability outcomes
19. Becoming Green, becoming leaders: Identity narratives in sustainability leadership development (Heizmann, H. & Liu, H., 2017)	The primary objective of the study was to examine how sustainability leadership identities are constructed within the context of a leadership development program. The research sought to understand the influence of narrative identities on the promotion of ecological sustainability in business and society	The study considered narrative construction and the identity formation of sustainability leaders as key variables. These included themes such as calling, awakening, and transforming within the journey of sustainability leadership development. The research employed a multimodal discursive analysis focusing on the publicly available content from the Centre for Sustainability Leadership (CSL). This included analyzing texts, videos, and promotional materials to see how narrative identities were constructed. The study utilized a critical discourse analysis framework	While not explicitly stating a hypothesis, the research implicitly tested the notion that leadership development narratives play a crucial role in shaping sustainability leaders through individualized and heroic portrayals, which may paradoxically sustain a disconnection from nature. The study found that sustainability leaders are often constructed through a narrative similar to a journey of enlightenment, with stages that emphasize individual empowerment and a transformational impact. However, this construction can ironically perpetuate a focus on self-enhancement and business success, potentially undermining the genuine	This gap highlights the absence of critical examination into how these identity narratives are practically enacted by leaders outside the context of the training programs and their real-world impact on sustainable practices	The paper highlights the need for future research to explore alternative forms of sustainability leadership that move beyond individualistic and heroic narratives. It suggests examining the co-construction of identities between leadership developers and participants, and how these narratives could be restructured to foster a more collective and ecologically integrated approach to leadership.

		to interpret the data.	connection to ecological sustainability		
20. Leadership for Sustainability: Theoretical Foundations and Pedagogical Practices (Burns, H., Diamond-Vaught, H., & Bauman, C., 2015)	To define and discuss the essential qualities and practices of leadership for sustainability, emphasizing pedagogical approaches that promote sustainable change within educational and organizational settings.	Approach: Theoretical analysis combining insights from leadership studies and sustainability education. - Data Sources: Extensive literature review spanning topics related to sustainability, leadership, and educational practices.	1. Sustainability Values in Leadership: - Leadership for sustainability involves embedding sustainability values into the practice and ethos of leadership. This includes a shift from traditional leadership paradigms to one that incorporates living processes, inclusion, collaboration, and reflexivity. 2. Pedagogical strategies to cultivate sustainability leaders: - Observation and Self-awareness - Ecological and Diverse Perspectives - Experiential Learning in Community 3. A Living Processes Paradigm: - Leadership for sustainability with responsive and dynamic styles.	Theoretical Focus: While the document provides a robust theoretical framework, it acknowledges the need for empirical research to validate and refine the proposed pedagogical practices.	Empirical Testing of Pedagogical Strategies: Future research could focus on empirically testing the effectiveness of the pedagogical strategies outlined in fostering effective sustainability leaders. - Adaptation in Various Contexts: Exploring how these practices can be adapted across different educational and organizational contexts to enhance their applicability and impact.
21. Leadership in Sustainability (Fistis, G., Rozman, T., Riel, A., & Messnarz, R., 2014)	To discuss the innovation in engineering focusing on producing reliable products and services and addressing social responsibility based on ISO 26000 standards. The paper explores how social responsibility is becoming a significant part of innovation and leadership in sustainability.	Approach: Theoretical analysis and literature review, emphasizing the shift in engineering paradigms to include social responsibilities and sustainability in product and service development. - Sources: Analysis includes a review of international standards and new trends in social responsibility and sustainability.	Paradigm Shifts: Highlighted the importance of incorporating social responsibility in engineering and product development, with a focus on sustainability. - Leadership and Sustainability: Discussed how sustainable leadership practices need to evolve to incorporate broader social and environmental factors. Highlights the growing importance of sustainability in leadership and innovation, suggesting that future leaders in engineering and other fields need to integrate sustainability into their core practices to remain competitive and responsible	Empirical Data: Lacks empirical data to demonstrate the practical implementation of the proposed theories. Specific Examples: Limited specific examples of organizations successfully integrating these new paradigms.	Empirical Studies: Encourages empirical studies to validate the theoretical constructs discussed. - Broader Industry Application: Suggests applying the principles discussed across various industries to examine their broader applicability
22. Sustainability and Authentic Leadership:	To explore the construct of authentic leadership from the	Participants: 210 MBA students who provided insights based on	Key Enabler: Self-knowledge was identified as the primary enabler for	Sample Diversity: The research focused solely on	Expand Participant Pool: Future research could involve a

Stumbling Blocks and Enablers (Lombard, L., April, K., & Peters, K., 2012)	perspective of practicing managers, particularly focusing on the factors that enable or hinder authentic leadership within the context of corporate social responsibility (CSR) and sustainability	their experiences with authentic leadership. Approach: Qualitative analysis using open and axial coding, grounded theory, and content analysis to derive family codes representing factors that enable or hinder authentic leadership.	authentic leadership. Main Hindrance: The influence of others was noted as the main obstacle to achieving authentic leadership. Leadership and Sustainability: Authentic leadership is crucial for advancing beyond compliance-oriented CSR to genuinely sustainable. The findings emphasize the importance of self-awareness and managing external influences for leaders striving to implement sustainable and responsible practices in organizations practices	MBA students, which may not fully represent the broader managerial population. Lack of Quantitative Data: The study's qualitative nature limits the ability to generalize findings quantitatively.	broader range of participants from different managerial levels and sectors to validate and enhance the findings. Incorporate Quantitative Methods: Integrating quantitative methods could help in measuring the impact of identified enablers and hindrances on authentic leadership more precisely.
23. Sustainability Leadership: From Strategy to Results (Galpin. T. & Whittington, J.L., 2012)	To explore how organizations can effectively implement and execute sustainability strategies through the development of a comprehensive model that integrates sustainability into business operations and leadership. Variables: - Independent Variable: Sustainability leadership strategies - Dependent Variables: Organizational sustainability performance, workforce engagement	Approach: Theoretical analysis using a comprehensive model of employee engagement adapted for sustainability. Analytical Method: Literature review and model development, integrating previous research and new strategic insights into a multi-level sustainability leadership model. Model description: Sustainability Leadership Model: Proposes a framework that includes macro-components like the organizational mission and strategy, and micro-components such as workforce engagement and leadership behaviors. - Macro-components: Focus on how sustainability is integrated into the firm's mission and how it evolves from risk management to a deeply	Workforce Engagement: Central to transforming sustainability strategy into measurable results, influenced significantly by leadership behaviors and HR practices. - Leadership Behaviors: Full-range leadership, including both transactional and transformational elements, is crucial for embedding sustainability into organizational practices. - Organizations can use the Sustainability Leadership Model as a roadmap to integrate sustainability into their core strategies and operations. - The model assists leaders in fostering an engaged workforce that actively contributes to sustainability goals	Empirical Data: While the model is comprehensive, it lacks empirical testing within specific organizational contexts. Scope of Application: The generalizability of the model across different industries and regions requires further exploration.	Empirical Testing of the Model: Future studies should aim to empirically test the proposed model in diverse organizational settings. Longitudinal Studies: To better understand the long-term effects and sustainability of the leadership practices suggested.

		integrated strategy. - Micro-components: Emphasize the role of full-range leadership, job enrichment, and goal setting in enhancing workforce engagement for sustainability.			
24. Attaining and Enacting Green Leadership: Insights from the Green IT Initiatives of China Mobile (Tan, B., Ling Pan, S., & Zuo, M., 2011)	To explore the processes through which green leadership can be achieved and enacted to facilitate collective green IT initiatives, using the case of China Mobile. Variables: - Green Leadership: Examined as a mechanism to drive environmental goals across organizational networks. - Green IT Initiatives: Actions taken to reduce environmental impact through IT.	Approach: Case study analysis of China Mobile's Green IT initiatives. Data Collection: Interviews with key members of China Mobile's Green IT management and strategic planning team, managers, IT specialists, suppliers, and customers. Analytical Method: Qualitative analysis based on case study data to construct a theoretical lens of organizational collective action.	Process Model of Green Leadership: A three-phase model (Strategizing, Mobilizing, Collectivizing) describing how green leadership is developed and executed. Strategizing: Initial planning and establishment of a green vision across the organization. Mobilizing: Internal implementation of green initiatives and external promotion of green values. Collectivizing: Coordination of collective action across the business network to implement green IT initiatives effectively. Framework for Green Leadership: Provides a structured approach for companies looking to lead in green IT initiatives across their networks. Enhanced Collaboration: Emphasizes the importance of engaging various stakeholders in a collective effort towards environmental sustainability.	Single Case Focus: Limited to the experiences of China Mobile, which may not generalize across different contexts or industries. Lack of Quantitative Data: The study is based on qualitative data, which might benefit from quantitative validation.	Expand the Number of Cases: Study other organizations to enhance the generalizability of the findings. Quantitative Validation: Empirically test the proposed model using quantitative methods.

Discussion

This review consolidates current insights into green leadership, examining its influence on organizational sustainability, employee well-being, and stakeholder engagement through a critical analysis of recent literature (Shah, S.H., et al., 2023). This comprehensive inquiry unflinchingly poses green leadership as determining factor for sustainable practices amongst multifarious organizational frameworks. Research demonstrates that leaders who explicitly advocate for and implement green and sustainability strategies within organizations significantly impact quality outcomes. The research further highlights the necessity of integrating empirical investigation (Dubey, R, Gunasekaran, A, & Ali, S.S., 2015) to explore the traces of green leadership practices and their outcomes (Abdullah, S.N.C., Khalil, N., Haron, S.N., Hamid, M.Y., & Yan, Y., 2023) with that of real world experiences. Effective green leadership practices—such as embedding sustainability into core performance metrics, conducting regular environmental training, and personal involvement by leaders in sustainability projects—have proven essential. These strategies not only improve internal practices but also positively shift stakeholder perceptions, particularly among consumers and employees. By emphasizing the importance of ethical and transformational leadership in driving sustainable agendas (Waldman, D.A., Siegel, D.S., & Stahl, G.K., 2020), this discussion advocates for a comprehensive approach that transcends conventional boundaries, encouraging a global perspective on green leadership that is both theoretically robust and practically applicable. However, the influence on investor attitudes (Gupta, L. & Jham, J., 2021) requires stronger communication to highlight the long-term financial benefits of sustainability investments.

Furthermore, the scope of green leadership extends into global challenges like climate change mitigation, where organizations under proactive environmental stewardship (Buysse, K. & Verbeke, A., 2003); (Bennett, N.J., et al., 2018); (Ahmed, U., Umrani, W.A., Yousaf, A., Siddiqui, M.A., & Pahi, M.H., 2021) demonstrate greater adaptability and innovation. Green leaders are instrumental in developing comprehensive CSR programs and initiating to discount carbon footprints by adopting innovative approaches, including the renewable energy (Alola, A.A., Yalciner, K., Alola, U.V., & Saint Akadiri, S., 2019) and energy efficiency paraphernalia. The impact of green leadership is also evident in sectors such as tourism, service industries, and non-profits, where despite resource constraints, strategic leadership fosters significant enhancements in environmental conservation, stakeholder satisfaction, (Fan, L.P. & Chung, H.C., 2023) and community engagement. The synthesis of findings underscores green leadership's indispensable role in not only navigating but also thriving amidst the evolving environmental and corporate landscapes, advocating for an integrated approach that aligns sustainability with organizational success.

The studies delve into the nuances of green and sustainable leadership, revealing that (Chen. Y.S., Chang, C.H., & Lin. Y.H., 2014) transformational and contemporary leadership approaches imbued with green values are pivotal (Xie, X. & Zhu, Q., 2020) in steering organizational success through innovation and sustainability. This body of research underscores the significant role of authentic leadership in enhancing corporate responsibility highlighting on strategies to influence pedagogical models to train the future takers. The integration of ethical and spiritual perspectives of leadership (Patwary, A.K., Rasoolimanesh, S.M., Rabiul, M.K., Aziz, R.C., & Hanafiah.M.H., 2022) are considered equally essential for attaining sustainability goals. These insights suggest a transformative shift towards leadership models that deeply integrate sustainability at all organizational levels.

The methodologies employed across these studies leverage a blend of (Trochim, W.M.K., 2006); (Hair, J., Ringle, C.M., & Sarstedt, M., 2013) quantitative and qualitative techniques (Bhutto, T.A., Farooq, R., Talwar, S., Awan, U., & Dhir, A., 2021) to explore the subtleties of leadership and sustainability within organizational culture. The studies swathing from hospitality sector to NGOs and academic institutions, for collecting data through systematic surveys and questionnaires that help analyze the efficacy of green leadership (Pham, N.T., Tuckova, Z., & Jabbour, C.J.C., 2019) unveils the depth of leadership influence on sustainable practices. The current review (Satta, G., Spinelli, R., & Parola, F., 2019) reveals a peripheral existence, yet new insights supported with robust empirical findings will be imperative to embark on sustainable leadership strategies (Pinelli, M. & Maiolini, R., 2017) effectively across domains.
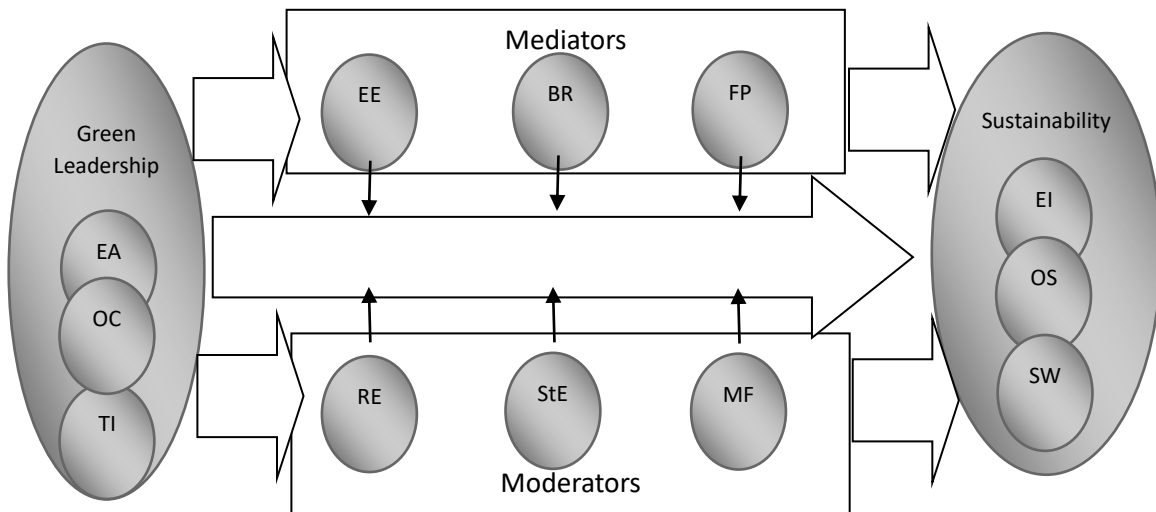
The identified research gaps across studies in green leadership and sustainability underscore several key limitations impacting the scope and depth of future research. These include geographic and sector-specific confines that restrict the generalizability of findings to broader contexts, and a prevalent reliance on quantitative methods that may not fully capture the nuances of green leadership. Additionally, the focus on narrowly defined industrial and non-profit settings limits wider applicability, while a lack of empirical backing for theoretical models points to a need for rigorous testing and validation. More distinct research approaches (Freudenreich, B., Ludeke-Freund, F., & Schaltegger, S., 2020) inviting qualitative methods that can establish authentic determinants of green and sustainable leadership are deemed significant.

The future research needs to encompass geographical and multi-sectoral dimensions to ensure global applicability by espousing dynamic methodologies (Wood, B.P., Eid, R., & Agag, G., 2021) contemplating environmental, social, and economic components for better sustainability. The longitudinal studies will have a long-term impact on green leadership and culturally attuned models (Rao, P.C.K., 2012) that sounds cohesive to organizational interests. The research must also attempt to integrate stakeholder interests to adopt novel technologies (Arici, H.E. & Uysal, M., 2021) such as AI and IoT that leverage to enhance green leadership practices. A balanced use of quantitative and

qualitative methods will provide a holistic belvedere on green sustainable leadership realization.

The Proposed Comprehensive Conceptual Model

This structured approach ensures that each objective and corresponding question not only justifies the review but also contributes directly to the development and eventual empirical testing of a conceptual model. The model ideates a causal relationship between green leadership practices impacting through organizational processes and structures (mediators), while encountering with exogenous variables like stakeholders, government regulations and market forces as moderators to result in overall sustainability. This alignment is essential for advancing the theoretical understanding of green leadership and providing a practical framework for future research and application.

(Authors' self-compilation based on the research review)

- Determinants of Green Leadership (EA – Environmental Awareness, OC – Organizational Culture, TI – Technology Involvement,)
- Moderator variables (StE- Stakeholder's Expectation, RE – Regulatory framework, MF – Market Forces)
- Mediating variables (EE – Employee Engagement, BR – Branding, FP – Financial Performance)
- Sustainability as an outcome of Green Leadership – (OS – Organization Strategy, EI – Environmental Impact, SW – Social well-being)

Conclusion and Recommendations

This inquiry into the green leadership as a seminal work, illuminates the transformative potential of integrating ethical stewardship and sustainability into organizational leadership. The discussion underscores the critical role of green leaders in navigating the sustainability odyssey, shaping stakeholder ecosystems, and overcoming the myriad challenges that impede the path toward a sustainable future. Green leadership can have an

impact on relationships between individuals and organizations in an effort to achieve comprehensive goal of incessant growth and sustainability.

Research Recommendations

Undauntedly, the extant literature significantly advocates the future scholars to effectively navigate the challenges that optimally places green leadership in the forefront while balancing both precepts and practices. The contributions must also be ardently addressing to enrich the domain of green leadership dynamics culminating with its evolution and long-term efficacy strategies that scout the global environment. Furthermore, interdisciplinary methods might help in embracing the insights from environmental sciences, psychology, and business management to unfold the scope of green leadership impact vis-à-vis organizational behavior and sustainability. Besides, it is crucial to conduct a close-circuit analysis and employ innovation mapping to systematically identify and consider the bottlenecks in adopting high-tech systems to overcome unprecedented challenges. Perhaps, such strategic objectives combined will both stochastic as well as deterministic models would help in isolating practical interventions and ensure green leadership practices be adhered widely.

Practical Recommendations

The contemporary organizations must be prepared to harness green leadership effectively by aiming ethical decision-making and strategic sustainability. "Actions speak louder than words", prompts organizations to initiate well designed leadership programs that substantiate leaders' skill-sets to implement relevant practices decisively and innovatively. In addition, stakeholder engagement in pushing green leadership modalities can transform collaborative partnerships and in co-creating an impactful sustainability. Furthermore, green leaders must spearhead to influence and develop policies that foster an environment conducive to sustainable business practices. By positioning green leaders as nuclei to both strategy formulation and execution, it is ensured that leaders commodiously yield tangible benefits to both organizations and environmental safeguards.

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