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Sustainable Construction Practices: A Green Transformational Leadership Perspective

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Abstract: With the growing awareness of climate change and environmental degradation, sustainable construction practices have become more relevant than ever. Therefore, green leadership is one of the approaches known to promote sustainability in the construction industry. This paper investigates the implementation of green leadership in sustainable construction, focusing on its significance, challenges, strategies, and advantages. This paper also aims to map green transformational leadership in construction as a guide for industry players by examining the interaction between a sustainable leadership style and the competencies of sustainable construction practices. It is concluded from this analysis that specific competencies and styles of leadership that are goal-oriented, involving, and engaging will determine construction project sustainability and effectiveness. Thus, construction executives should embed sustainability into the purpose, strategy, and operation of their businesses. In addition, the acquisition of green leadership skills and sustainability drives organizations toward a sustainable future for construction practices.

Keyword: Construction industry, Environmental, Green leadership, Sustainability, Transformation.

INTRODUCTION

Leadership is vital to organizational performance since it affects employee behaviour and mindset (Hallinger et al., 2020). The central role of leadership in motivating the workforce to engage with the enterprise's efforts on environmental concerns without impairing the natural environment rests on the trade-off between environment and economy. Green leadership is needed for sustainable practices in the construction industry. Sustainability has been a hot topic in many industries, especially construction, in recent years as people have become more aware of environmental issues. The construction industry represents one of the biggest sources of carbon emissions, energy consumption, and waste generation. Hence, the significance of employing green leadership in construction practices cannot be overlooked if long-term environmental, social, and economic sustainability is to be ensured in construction processes.

Research has revealed that green leadership practices are instrumental in shaping employees' green behaviour (Davis et al., 2020). Several researchers have also highlighted that employees in green vision are achievers. These supportive leaders provide more green resources, ultimately resulting in positive green behaviour and sustainability (Nawaz Khan et al., 2023). The role of leadership is crucial in any organization as it affects the behaviour and thinking of employees (Hallinger et al., 2020). Knowing that leadership greatly affects employees' willingness to join in efforts to help reduce potential harm to the environment by balancing what can be done to improve the business environmentally and economically. Green leadership is the influence of leaders on individuals and organizations, directing them towards a vision of long-term ecological sustainability (Egri et al., 2000).

The construction sector, an indispensable component of worldwide economic development, faces an increasingly critical problem of ensuring environmental sustainability and optimising resource utilisation. Given how aloof yet resource-heavy building practices can be, the challenge at hand today, exacerbated by the current climate, requires new solutions, not just well-worn declarations. With a prime need to tackle the disparity between challenges and solutions, sustainable leadership may be the key. Nevertheless, the desired impact is to investigate further the elements in the exercise of sustainable leadership style and competencies of sustainable construction practices to examine green transformational leadership in construction as a guide for industry players. In addition, as the construction industry is one of the pillars of the success of the global economy, environmental sustainability and efficient resource tracking are urgently needed. Since the traditional practices of the industry are resource-intensive (Waqar et al., 2024), it was necessary to find creative solutions that will do more than just identify the problem. This research resolves a knowledge gap by examining the intricate connection between sustainable leadership practises and the various challenges the construction industry faces, considering the urgent need for sustainable growth in the contemporary era. The transformation of green leadership skills and sustainability knowledge that this study will examine serves to drive leaders and their organizations towards sustainable futures of construction practices.

METHOD

This study uses a literature review to examine green transformational leadership in sustainable construction, using sources from national and international journals indexed in Scopus, Web of Science, and Google Scholar, which are relevant to the topic of green leadership. The research stages include: (1) identifying articles using relevant keywords, (2) selecting based on topic relevance and publication quality, (3) extracting key information on leadership strategies, competencies, challenges, and impacts, and (4) synthesizing the findings to develop a conceptual perspective and recommendations for the construction industry.

RESULTS AND DISCUSSION

Green Leadership In Construction Practices

Green leadership in construction practices is an idea that combines the necessity of environmental stewardship with the construction industry. This requires the use of eco-friendly processes, materials, and technologies to design buildings with the smallest impact on the environment but that provide decades of economic and social benefits. These leaders lead innovation by maintaining a cadence for expanding resources to improve programs (Chou & Yeh, 2015), minimize carbon emissions, and promote environmental stewardship throughout the construction lifecycle. The participation of green leadership in construction practices is summarized in Table 1.

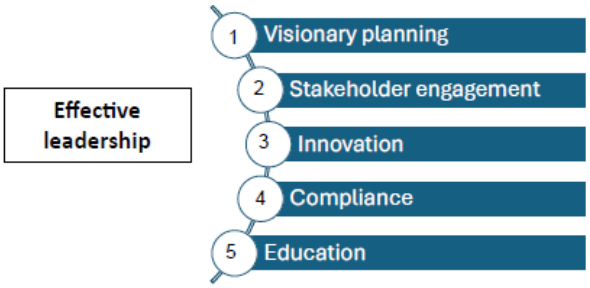
Table 1. Green leadership in construction practices

No.	Construction practices	Description
1.	Sustainable Materials	This is an essential part of the work in green construction and the decision on materials. These materials responsibly make better use of these systems and replace the use of renewable systems, reducing the negative environmental effects of building projects. Key aspects include: (a) Recycled and renewable materials: Using reclaimed wood, recycled steel and sustainable alternatives to concrete to minimize waste and energy use. (b) Localized materials: Using materials from proximity lessens transport emissions and criticism in the vicinity. (c) Low-Carbon alternatives: Sustainable materials like bamboo, hempcrete, and cross-laminated timber (CLT) utilize renewable, durable, and energy-efficient alternatives to traditional building materials.
2.	Energy Efficiency	Maximizing energy efficiency in a building project means that it requires lower energy for heating, cooling, and day-to-day use. Strategies include: (a) Integrating renewable energy suppliers, including solar panels, wind turbines, and geothermal, to reduce fossil fuel dependency. (b) High-Performance Building Design - Employing passive solar design, natural ventilation, and intelligent insulation strategies to maximize energy efficiency. (c) Energy Efficient Systems: Implement LED lighting, occupancy sensors, high-efficiency HVAC systems, and energy recovery ventilators (ERVs) to reduce our energy usage. (d) Smart Building Technologies: To monitor energy in real-time and improve energy use through automation and Internet of Things (IoT) systems.
3.	Waste Reduction	Landfills are filled with construction waste, and therefore, waste management is the priority of green leadership. Effective strategies include: (a) On-Site Recycling & Reuse: Reusing materials such as demolition debris, wood, and metal on the same site. (b) Prefabrication & Modular Construction: Employing off-site fabrication techniques to minimize material waste, improve accuracy, and decrease transportation emissions. (c) Deconstruction & Circular Economy Practices: Designing for disassembly so that materials can be reclaimed or recycled, not discarded at the end of a building's life cycle. (d) Waste to Energy Innovations: Turning rubbish that cannot be recycled into energy utilising sustainable disposal technology.
4.	Additional Aspects of Green Leadership	In addition to managing materials, energy, and waste, green leaders focus on: (a) Water Conservation: Rainwater harvesting, greywater recycling, water-efficient landscaping. (b) Green Certifications: Implementing essential certifications such as LEED, BREEAM, and WELL to comply with sustainability. (c) Environmental-friendly Urban Design: Incorporating parks, eco-friendly structures, and public transport access into building initiatives. (d) Worker & Community Well-Being: Materials that are safe and non-toxic for employees and healthy environments for people who use the buildings.

Source: Research Data (2025)

Leadership Strategies For Sustainable Construction

Implementing proper leadership tactics in the sustainable construction space is important for developing and promoting social and environmental responsibility. Sustainable construction requires strong leadership, not only in setting goals but also in continuously adapting to new environmental challenges, as illustrated in Figure 1.



Source: Researcher (2025)

Figure 1. Effective leadership approaches

There are five (5) effective leadership approaches consisting of visionary planning, stakeholder engagement, innovation, compliance, and education. Visionary planning (Usman et al., 2024) involves defining clear sustainability objectives and incorporating life cycle thinking, ensuring that projects remain environmentally efficient from design to demolition. Stakeholder engagement (Maak, 2007) goes beyond simple collaboration, and it requires transparent communication, shared decision-making, and long-term partnerships that encourage all parties to prioritize sustainability. This includes working with governments on policy compliance (Kardoyo et al., 2020), engaging local communities to minimize environmental impact, and fostering sustainable supply chains.

In addition to innovation in sustainable construction (Arici & Uysal, 2022), leaders need to provide proactive support for the research and development of green materials, energy-efficient designs, and smart construction techniques. Technologies like Building Information Modelling (BIM), prefabrication, and renewable energy integration can drastically reduce waste, improve efficiency, and shrink carbon footprints. Ensuring compliance and advocating for industry-wide innovation is just as critical; sustainability leaders must remain well-versed in ever-advancing environmental legislation and advocate for industry updates that go above and beyond minimum sustainability thresholds. This includes the advocacy to influence policymakers, invest in sustainable certifications and ensure its projects meet global environmental benchmarks.

Education and training (Shafait & Huang, 2024) are the cornerstones of long-term sustainability as they involve preparing professionals to be knowledgeable in green practices and enact them. A research study revealed that leaders should institute policies to build a culture of continuous education through sustainability workshops, certifications, and cross-pollination of best practices that keep employees abreast of current environmental innovations (Alenezi et al., 2024). Human resource management and organizational support decide the culture, so they should encourage the companies to engage in sustainable practices as much as possible.

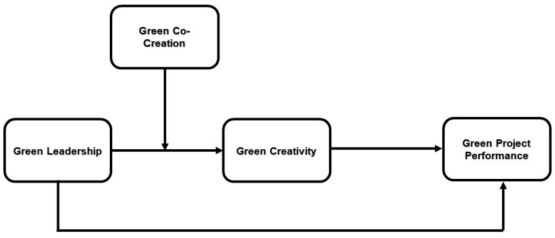
Leadership at all organisational levels is a major enabler in delivering sustainability in the construction business. Some critical approaches include visionary planning and stakeholder involvement (Jang et al., 2017), innovation, compliance, and education. Establishing sustainable targets can also ensure that projects align with longer-term environmental goals while inspiring cost/regulatory transparency on green building among stakeholders. By promoting advanced technologies, such as smart building systems and carbon-neutral materials, they drive innovation and increase efficiency with lower environmental impact. Also, proactive monitoring of regulations and promoting greener policies (Iqbal et al., 2024) arms the industry with the information needed to double down on sustainability. Moreover, educational attainment and training also educate teammates to rightly incorporate sustainable methodologies that transform environmentally friendly construction from rare practice to standard practice. By applying these leadership approaches, construction leaders can pave the way for a more sustainable future that balances economic development, environmental sustainability, and long-term resilience.

Benefits of Green Leadership In Construction

Green leadership refers to the ability of leaders to motivate people and organizations to work toward a vision of long-term ecological sustainability (Egri et al., 2000). However, on the other hand, climate change drivers such as precipitation and temperature shifts and increasing national and international climate regulations (Saqib et al., 2023) discourage unsustainable development: natural resources, economic growth and climate change. Hence, considering the increasing effects of climate change and consequent climate legalities locally and globally, organizations should engage in green leadership practices to ensure sustainable performance.

In the fast-paced environment of the business world, it is widely believed that knowledge embedded in companies is in control of the game and without it, the game can be flipped upside down (Rubel et al., 2021). In industrialised economies, knowledge has changed the traditional perspective of competitiveness and knowledge (Ahmed et al., 2021). Moreover, knowledge sharing is related to the absorption and integration of knowledge. Higher utilization of resources can occur through knowledge sharing (Abbas Khan et al., 2023). This indicates that environmental or green knowledge sharing strengthens the firm green innovation capabilities, resulting in sustainable performance. Today, businesses urgently need to learn and seek information that can provide an environmentally friendly effect and a competitive edge over competitors (Al-Qudah et al., 2023).

Knowledge creation and utilization are central to the sustainable success of many business organizations. The core principle is that, as (Ishak et al., 2010) stated, a strong knowledge management culture will produce persistently better results. For the role that society plays in climate change, (Dinesh et al.,2021) posited that what is required are new forms of knowledge production and sharing with an emphasis on social outcomes. When employees are incentivized to share knowledge and develop a culture of openness, the organization can adapt and grow in such a way that it thrives profitably but also sustainably and better for the environment, based on Human Capital Theory. As a result, the sharing of environmental information has been essential for firms' sustainability performance. Consequently, this study provides a rare indication that pathways for sharing knowledge may serve as "enablers" of information transfer, resulting in better long-term outcomes. Therefore, from the preceding arguments of the impact of knowledge-sharing practices on sustainable performance, environmental knowledge-sharing practices positively link with firms' sustainable performance (Khan et al., 2023). In addition, leaders need to promote and encourage their employees to do more creative work (Afsar et al., 2020). Consequently, long-term leaders substantially impact knowledge management applications, which could enhance productivity (Birasnav, 2010). Prior studies have indicated the influence of green leadership on knowledge-sharing practices and performance (Kim, 2018). Mubarak et al. (2024) stated that, based on the social exchange theory, there are three (3) main objectives such as (i) to recognize the role of green leadership toward green project performance, (ii) to recognize the mediating role of green creativity between green leadership and green project performance; (iii) to recognize the moderating role of green co-creation between green leadership and green creativity (Figure 2).

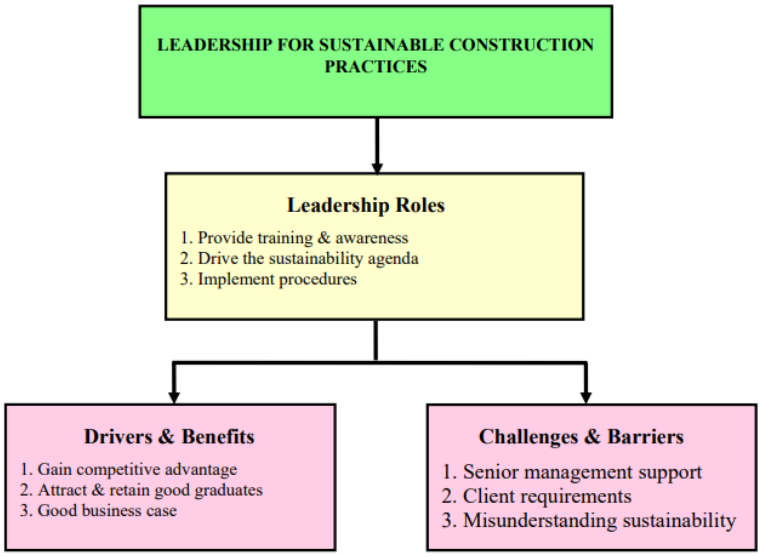


Source: Mubarak et al., (2024)

Figure 2. Roadmap to achieve green project performance

Challenges In Leadership: Sustainable Construction Practices

Sustainability leaders face many hurdles in convincing their organisations to embrace sustainable construction. A few issues were raised when leadership was asked about the factors they faced in effectively applying sustainable construction practices in their organism. One of these significant obstacles to organizational management is period and cost restrictions, as illustrated in Figure 3. Therefore, strong leadership is necessary for incorporating sustainability considerations into every step of the construction process. The leaders are the key to capacity and sensitivity training, where they might cultivate a sense of sustainable practices through workshops and development initiatives (Rehan et al., 2024). This implies aligning business objectives with environmental goals, including green certifications and investing in renewable solutions. Putting procedures or resources in place allows long-term sustainability by creating clear policies and waste management plans, and digital tools, such as BIM, are employed to increase efficiency. Leaders promote sustainability through awareness creation, strategic goal setting, and the exercise of structured processes, which subsequently provide long-term environmental and business solutions (Siddiquei et al., 2024).



Source: Opoku & Fortune (2011)

Figure 3. Leadership for sustainable construction practices

Sustainable construction leadership drives competitive advantage, attracts talent, and supports business success. Companies embracing green building practices, energy-efficient technologies, and sustainability certifications gain credibility, reduce costs, and enhance brand reputation. Sustainability-focused leadership attracts top graduates seeking purpose-driven careers, offering training, career development, and exposure to innovative technologies, fostering employee satisfaction and retention. From a business perspective, sustainability reduces operational costs (Opoku & Ahmed, 2014), increases efficiency, and strengthens stakeholder relationships, securing investments and contracts. Strong leadership and compliance with regulations can play a key role in mitigating risks and enhancing resilience. In a world increasingly conscious of its ecological footprint, this commitment to sustainability not only drives profitability but also ensures that organizations are seen as leaders in their industry and movement.

Among the key themes are secure buy-in among senior management, balancing the demands of clients and customers, and dealing with misconceptions surrounding sustainability. Moreover, senior management has preferred short-term financial returns on investment rather than long-term benefits of sustainability (Akaighe & Okon, 2021), mandating the managers to make a business case for green investments. Environmental considerations must take a backseat

to cost and speed of completion, and it is therefore crucial for leaders to educate clients on the economic and operational advantages of adopting sustainable methods (Zada, 2024). Furthermore, disbelief in sustainability, coupled with misconceptions such as that it is too costly, hinders uptake. To move sustainability ahead, leaders must create awareness, offer training, and show success through real-world examples.

Strategic Leadership Styles: Engaging, Involving, And Goal-Oriented Approaches

Transformational leadership stands out for its benefits in facilitating sustainable practices and various leadership approaches and for its effectiveness in different scenarios. The universal leadership style for sustainable construction does not exist. Transformational leadership is generally more effective (Afzal & Tumpa, 2024). This approach involves making decisions that balance economic growth with environmental stewardship, fostering a culture of responsibility, and inspiring others to contribute to a greener, more sustainable future.

Table 2. Strategic Leadership Styles

Leadership style	Description
Engaging leadership	Best practices for transformational change. Empowers and gets everyone involved. Leaders can turn around by (i) creating close connections, (ii) encouraging participation, and (iii) throwing a vision of ownership. This fosters innovation, disrupts the status quo and creates a vibrant ecosystem for audacious, forward-looking strategies.
Involving leadership	Perfect for transitional organizations undergoing evolutions, but not revolutions. It focuses on teamwork, transparency, and collective decisions to help deal with changes such as new technologies, market changes, or changing customer needs. Getting employees involved in the change process creates adaptability, eases transitions, and ensures shared responsibility for organizational growth.
Goal-oriented leadership	Seeks to produce specific results in consistent settings. It focuses on efficiency, productivity, and getting results, often through clear goals, performance indicators, and defined roles. The method brings direction, focus, and accountability, ensuring execution stays strong, and so does the organization.

Source: Research Data (2025)

Various leadership styles (Table 2) may lead to different performances in the industry. Green leadership is crucial for developing a sustainable ecosystem (Mittal & Dhar, 2016). While leadership has been recognized to be one of the most important determinants of the performance of organizations, research on the connection between leadership competencies of project managers in general and especially managers in the construction industry is scarce (Khan et al. 2015). Such leaders must bring the values and the abilities to carry on a positive culture towards sustainable development. However, the occurrence of leadership style (Zhao & Lee, 2016) and the capabilities of sustainable project managers require additional attention statistically correlating it with project success criteria.

As a result, many green strategies have been developed with respect to improving environmental performance in the building construction process (Zhang et al., 2011). For example, adopting green strategies in housing development has made a major contribution to the implementation of principles of sustainable development. In addition to the above findings being suggested, "investment in green housing can deliver high environmental performance and social performance standards that provide the basis for competitive advantage to attract customers."

Dulewicz and Higgs (2005) conducted an exhaustive review of existing theories and their various assessment tools. They identified fifteen (15) leadership dimensions, which they subsequently grouped under three competencies: intellectual (IQ), emotional (EQ) and managerial (MQ). These dimensions are provided in Table 3. Based on their fifteen (15) dimensions, they discovered three leadership profiles useful for programs of organizational

change, which they term goal-oriented, involving and engaging, and suitable depending on the amount of change required from within an organization.

Table 3. Competencies and styles of leadership

Group	Competency	Description	Goal oriented	Involving	Engaging
Intellectual (IQ)	1. Critical analysis & judgment	Gathers diverse information, analyses facts weighs pros and cons, makes sound decisions, and remains aware of the impact of assumptions.	High	Medium	Medium
	2. Vision and imagination	Visionary, imaginative, and innovative, anticipating the impact of changes on implementation and business realities.	High	High	Medium
	3. Strategic perspective	Broader implications, balancing short- and long-term factors while identifying opportunities and threats.	High	Medium	Medium
Managerial (MQ)	1. Engaging communication	Efficiently organizes resources, sets clear objectives, and turns long-term goals into action plans.	Medium	Medium	High
	2. Managing resources	Engages others through tailored communication and remains approachable and accessible.	High	Medium	Low
	3. Empowering	Empowers direct reports with autonomy, encouraging problem-solving, accountability, and growth through challenging tasks, skill development, and coaching.	Low	Medium	High
	4. Developing	Involves enhancing key competencies such as strategic thinking, decision-making, communication, and adaptability.	Medium	Medium	High
	5. Achieving	Combination of strategic vision, strong decision-making, and effective communication.	High	Medium	Medium
Emotional (EQ)	1. Self-awareness	Self-awareness, recognizing and controlling their emotions.	Medium	High	High
	2. Emotional resilience	Consistent performance, staying focused on goals despite challenges or criticism.	High	High	High
	3. Motivation	Drive and energy to achieve results and make an impact.	High	High	High
	4. Sensitivity	Considers others' needs and perceptions when making decisions and proposing solutions.	Medium	Medium	High
	5. Influence	Influences others by understanding their views, listening, and providing a clear rationale for change.	Medium	High	High
	6. Intuitiveness	Clear decisions and drive implementation, balancing rational and emotional insights amid ambiguity.	Medium	Medium	High
	7. Conscientiousness	Steadfast commitment, aligning words with actions to inspire support despite challenges.	High	High	High

Source: Research Data (2025)

CONCLUSION

Sustainable construction practices through green transformational leadership are essential for achieving long-term environmental, social, and economic sustainability. Good leaders can change the culture of the organization to embrace sustainable principles like incorporating green initiatives into strategic planning, encouraging innovation, and supporting responsible construction practices. By training employees, engaging stakeholders, and ensuring regulatory compliance, leaders can overcome client resistance, senior management doubts, and misinformation about sustainability. Effective sustainability-driven leadership approaches in organizations advancing a sustainability-driven leadership approach directly contribute to superior environmental performance, which is achieved with a competitive advantage for organizations, retention of top talent, and securing ongoing long-term profitability. Transformational leaders can shape the future of the construction industry through proactive decision-making, advocacy for green policies, and investment in eco-friendly technologies. In the end, sustainable construction leadership is about compliance with regulations and leaving a legacy that positively influences our built environment and is handed to future generations. The results emphasize that sustainability achievement and construction mostly depend on all attributes. This will emphasize why project managers must have the appropriate leadership qualities, skills, and knowledge to effectively implement sustainability in construction projects. This transition to sustainable communities is leadership, and this study identifies some key elements.

REFERENCE

Abbas, J., & Khan, S. M. (2023). Green knowledge management and organizational green culture: an interaction for organizational green innovation and green performance. *Journal of Knowledge Management*, *27*(7), 1852-1870.

Afsar, B., & Umrani, W. A. (2020). Corporate social responsibility and pro-environmental behavior at workplace: The role of moral reflectiveness, coworker advocacy, and environmental commitment. *Corporate Social Responsibility and Environmental Management*, *27*(1), 109-125.

Afzal, F., & Tumpa, R. J. (2024). Exploring leadership styles to foster sustainability in construction projects: a systematic literature review. *Sustainability*, *16*(3), 971.

Ahmed, M., Guo, Q., Qureshi, M. A., Raza, S. A., Khan, K. A., & Salam, J. (2021). Do green HR practices enhance green motivation and proactive environmental management maturity in hotel industry? *International Journal of Hospitality Management*, *94*, 102852.

Akaighe, G., & Okon, S. (2021). Driving green marketing in emerging markets through green leadership. *Green marketing and management in emerging markets: The crucial role of people management in successful implementation*, 59-72.

Alenezi, H., Louail, B., Benarous, J. A., & Tayeb, M. E. (2024). The impact of administrative leadership on green management: the case of leaders of saudi universities. *Access Journal*, *5*(1), 163-178.

Al-Qudah, A. A., Hamdan, A., Al-Okaily, M., & Alhaddad, L. (2023). The impact of green lending on credit risk: Evidence from UAE's banks. *Environmental Science and Pollution Research*, *30*(22), 61381-61393.

Arici, H. E., & Uysal, M. (2022). Leadership, green innovation, and green creativity: A systematic review. *The Service Industries Journal*, *42*(5-6), 280-320.

Birasnav, M., Rangnekar, S., & Dalpati, A. (2010). Transformational leadership, interim leadership, and employee human capital benefits: an empirical study. *Procedia-Social and Behavioral Sciences*, *5*, 1037-1042.

Chou, J. S., & Yeh, K. C. (2015). Life cycle carbon dioxide emissions simulation and environmental cost analysis for building construction. *Journal of Cleaner production*, *101*, 137-147.

Davis, M. C., Unsworth, K. L., Russell, S. V., & Galvan, J. J. (2020). Can green behaviors really be increased for all employees? Trade-offs for "deep greens" in a goal-oriented green human resource management intervention. *Business Strategy and the Environment*, *29*(2), 335-346.

Dinesh, D., Hegger, D. L., Vervoort, J. M., & Driessen, P. P. (2021). A changing climate for knowledge generation in agriculture: lessons to institutionalize science-policy engagement. *Frontiers in Climate*, *3*, 615463.

Dulewicz, V., & Higgs, M. (2005). Assessing leadership styles and organisational context. *Journal of managerial psychology*, *20*(2), 105-123.

Egri, C. P., & Herman, S. (2000). Leadership in the North American environmental sector: Values, leadership styles, and contexts of environmental leaders and their organizations. *Academy of Management journal*, *43*(4), 571-604.

Hallinger, P. (2020). Analyzing the intellectual structure of the Knowledge base on managing for sustainability, 1982–2019: A meta-analysis. *Sustainable Development*, *28*(5), 1493-1506.

Hwang, B. G., & Ng, W. J. (2013). Project management knowledge and skills for green construction: Overcoming challenges. *International journal of project management*, *31*(2), 272-284.Huxham, C., & Vangen, S. (2000). Ambiguity, complexity and dynamics in the membership of collaboration. *Human relations*, *53*(6), 771-806.

Ishak, N. B., Eze, U. C., & Ling, L. S. (2010). Integrating knowledge management and human resource management for sustainable performance. Journal of Organizational Knowledge Management, 2010, 1-13.

Iqbal, S., Nawaz, M. J., Aslam, S., Ali, A., Rehman, M. S., & Rehman, S. U. (2024). Impact of Sustainable Leadership on Construction Project Success: Mediating Role of Green Innovation and Organizational Learning. *International Journal of Organizational Leadership*, *13*(3), 610-631.

Jang, Y. J., Zheng, T., & Bosselman, R. (2017). Top managers' environmental values, leadership, and stakeholder engagement in promoting environmental sustainability in the restaurant industry. *International Journal of Hospitality Management*, *63*, 101-111.

Kardoyo, K., Feriady, M., Farliana, N., & Nurkhin, A. (2020). Influence of the green leadership toward environmental policies support. *The Journal of Asian Finance, Economics and Business*, *7*(11), 459-467.

Khan, M. S., Khan, I., Qureshi, Q. A., Ismail, H. M., Rauf, H., Latif, A., & Tahir, M. (2015). The styles of leadership: A critical review. *Public Policy and Administration Research*, *5*(3), 87-92.

Khan, R. U., Saqib, A., Abbasi, M. A., Mikhaylov, A., & Pinter, G. (2023). Green Leadership, environmental knowledge Sharing, and sustainable performance in manufacturing Industry: Application from upper echelon theory. *Sustainable Energy Technologies and Assessments*, *60*, 103540.

Kim, M. K., Park, J. H., & Paik, J. H. (2018). Factors influencing innovation capability of small and medium-sized enterprises in Korean manufacturing sector: Facilitators, barriers and moderators. *International Journal of Technology Management*, *76*(3-4), 214-235.

Maak, T. (2007). Responsible leadership, stakeholder engagement, and the emergence of social capital. *Journal of business ethics*, *74*, 329-343.

Mittal, S., & Dhar, R. L. (2016). Effect of green transformational leadership on green creativity: A study of tourist hotels. *Tourism management*, *57*, 118-127.

Mubarak, N., Khan, J., Ali, M., & Pesämaa, O. (2024). Roadmap to Achieve Green Project Performance: The Role of Knowledge Co-creation. *Journal of the Knowledge Economy*, 1-23.

Müller, R., & Turner, R. (2010). Leadership competency profiles of successful project managers. *International Journal of project management*, *28*(5), 437-448.

Nawaz Khan, A. (2023). Is green leadership associated with employees' green behavior? Role of green human resource management. *Journal of Environmental Planning and Management*, *66*(9), 1962-1982.

Opoku, A., & Fortune, C. (2011). The implementation of sustainable practices through leadership in construction organizations. *Management*, *1145*, 1154.

Opoku, A., & Ahmed, V. (2014). Embracing sustainability practices in UK construction organizations: Challenges facing intra-organizational leadership. *Built Environment Project and Asset Management*, *4*(1), 90-107.

Rehan, A., Thorpe, D., & Heravi, A. (2024). A framework for leadership practices and communication in the context of the construction sector. *Project Leadership and Society*, *5*, 100142.

Rubel, M. R. B., Kee, D. M. H., & Rimi, N. N. (2021). The influence of green HRM practices on green service behaviors: the mediating effect of green knowledge sharing. *Employee Relations: The International Journal*, *43*(5), 996-1015.

Saqib, A., & Lean, H. H. (2023). Climate change, natural resources, and economic growth. Elsevier.

Shafait, Z., & Huang, J. (2024). Examining the impact of sustainable leadership on green knowledge sharing and green learning: Understanding the roles of green innovation and green organisational performance. *Journal of Cleaner Production*, *457*, 142402.

Siddiquei, A. N., Imam, H., & Asmi, F. (2024). How and when temporal leadership facilitates the success of sustainable construction projects. *Engineering, Construction and Architectural Management*, *31*(12), 4852-4871.

Usman, M., Kiani, A., & Ghani, U. (2024). Leading towards sustainability: visionary innovation leadership's impact on green product innovation. *Technology Analysis & Strategic Management*, 1-15.

Waqar, A., Houda, M., Khan, A. M., Qureshi, A. H., & Elmazi, G. (2024). Sustainable leadership practices in construction: Building a resilient society. *Environmental Challenges*, *14*, 100841.

Zada, M., Khan, J., Saeed, I., Zada, S., & Yong Jun, Z. (2024). Linking sustainable leadership with sustainable project performance: mediating role of knowledge integration and moderating role of top management knowledge values. *Journal of Knowledge Management*, *28*(6), 1588-1608.

Zhang, X., Platten, A., & Shen, L. (2011). Green property development practice in China: Costs and barriers. *Building and environment*, *46*(11), 2153-2160.

Zhao, X., Hwang, B. G., & Lee, H. N. (2016). Identifying critical leadership styles of project managers for green building projects. *International Journal of Construction Management*, *16*(2), 150-160.