CORPORATE GREENING INITIATIVES AND MANAGEMENT GOVERNANCE: ANALYSING THEIR IMPACT ON PROJECT PERFORMANCE AND STAKEHOLDER ENGAGEMENT

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ABSTRACT: Corporate greening initiatives refer to the measures implemented by businesses to reduce their environmental impact and promote sustainability. These programmes encompass diverse measures, including the utilisation of sustainable materials, waste reduction, and energy conservation. Management governance encompasses the techniques and procedures utilised by businesses to facilitate decision-making and oversee their operations. A quantitative research methodology was employed to survey 200 companies for data collection in the study. This study suggests that corporate greening activities positively affect project performance and stakeholder involvement, and that the relationship is influenced by management governance. This is achieved through the utilisation of regression fixed effects, industry-based regression, dynamic panel regression models, and GMM regression. The study's findings indicate that corporate greening activities have positive effects on project performance and stakeholder involvement. The study also finds that managerial governance can reduce the impact of this relationship. The report highlights that organisations with stronger management governance have a greater positive influence on project performance and stakeholder involvement in corporate greening initiatives. Corporate greening programmes can effectively enhance stakeholder participation and improve project performance. To optimise the benefits of their environmental initiatives, businesses should prioritise the establishment and execution of robust management governance. Moreover, these findings align with the principles of green governance derived from ESG ratings, supporting the notion that effective management governance significantly contributes to advancing a company's environmental sustainability efforts.

Keywords: Corporate Greening Initiatives, Management Governance, Project Performance, Stakeholder Engagement, Sustainability.

1. Introduction

Corporate sustainability and environmental responsibility are now crucial components of contemporary business practises. The acknowledgement of the pressing necessity to tackle environmental issues and involve stakeholders has significantly altered organisations' approach to sustainability practises (Shrivastava et al., 2020). This study explores the complex interplay between corporate greening initiatives, management governance, project performance, and stakeholder engagement in organisations. Through the analysis of these dynamics, our objective is to make a valuable contribution to the expanding field of corporate sustainability and its impact on both business performance and societal welfare.

Numerous recent studies have emphasised the significant influence of corporate sustainability initiatives (Lichtenthaler, 2021). The initiatives discussed involve various practises, such as carbon emissions reduction, adoption of renewable energy sources, responsible waste management, and implementation of sustainability certification programmes (Vidmar, Marolt, & Pucihar, 2021). The intersection between sustainability efforts and management governance structures is a key topic of discussion (Aguilera et al., 2021). Yin et al. (2023) argues that effective management governance, which includes independent boards, CEO tenure, and executive compensation alignment with sustainability goals, plays a crucial role in improving sustainability practises. This study expands upon existing literature to investigate how corporate greening initiatives and governance mechanisms interact with project performance and stakeholder engagement.

The objective of this study is to assess the impact of corporate greening programmes on project performance and stakeholder engagement, considering the potential influence of management governance factors such as management authority, changes, and remuneration. Our study aims to analyse a wide range of variables in order to gain a comprehensive understanding of the sustainability landscape. Variables in this study encompass various indicators of corporate greening efforts, such as the quantity of green buildings, adoption of renewable energy, and expenditure on corporate social responsibility (CSR). These variables are evaluated in conjunction with governance-related

factors, including board independence, CEO tenure, and executive compensation ratio. The empirical research aims to find out how these variables affect project performance, which is usually measured by metrics like return on investment, and stakeholder engagement, which is usually measured by how satisfied stakeholders are with the project (Abdi, Li, & Càmara-Turull, 2022; Alabdullah, 2023; Kanadlı et al., 2022).

The analysis of these variables produced interesting empirical results. Significant correlations were found between specific corporate greening initiatives and project performance, indicating the economic advantages of sustainability practices (Abdi et al., 2022; Junchi, 2017). Additionally, the presence of management governance variables demonstrated moderating effects, highlighting the significance of governance mechanisms in facilitating stakeholder engagement (Alabdullah, 2023)EC8CDC37F1}. The empirical findings highlight the complex nature of corporate sustainability and the significant influence of governance on outcomes. The study findings indicate that corporate greening initiatives positively impact project effectiveness and stakeholder involvement, thereby demonstrating their potential to enhance corporate sustainability. Furthermore, it has been shown that effective management governance enhances these advantageous benefits. This is achieved through the implementation of management authority, reforms, and compensation, emphasising the crucial role of managerial practices in fostering sustainability within organisations.

Lichtenthaler (2021) provides practical recommendations for organisations aiming to succeed in a sustainability-focused environment based on empirical insights. The study indicates that organisations should prioritise sustainability by incorporating green initiatives into their fundamental operations (Zuokui, 2017). In addition, it is important for organisations to ensure that their governance structures are in line with sustainability goals, promoting responsible decision-making and transparency. Organisations can improve project performance and stakeholder engagement, leading to sustainable competitive advantages (Ansu-Mensah et al., 2021). The main aim of this study is to provide a comprehensive understanding of the intricate dynamics between corporate sustainability efforts and managerial governance, specifically examining how these factors collectively impact project outcomes and engagement with stakeholders.

By conducting a thorough examination of various factors and utilising empirical evidence, our objective is to make a scholarly contribution to the ongoing discussion surrounding corporate sustainability. In doing so, we seek to offer valuable perspectives for organisations as they navigate the complexities and possibilities associated with the imperative of sustainability. The implications drawn from the findings of this study suggest that organisations can enhance project performance and stakeholder involvement by prioritising corporate greening initiatives and enhancing management governance practises. The aforementioned findings underscore the importance of integrating managerial best practises with sustainability initiatives in order to attain enduring environmental and operational advantages.

2. Literature Review

Over the course of recent decades, there has been a notable transformation in the realm of international business, with an increasing emphasis on the concepts of corporate sustainability and environmental stewardship (Ansu-Mensah et al., 2021). The current transition can be attributed to a growing awareness of the environmental challenges that affect our planet, combined with the recognition that businesses play a vital role in addressing these issues (El Khatib et al., 2020). As a result, businesses across various sectors have undertaken initiatives to promote corporate sustainability, aiming to reduce their environmental footprint, conserve valuable resources, and integrate sustainable practices into their core operations (Waheed & Zhang, 2022). These noble endeavours encompass a wide range of strategies, including the adoption of renewable energy sources and eco-friendly building practises, as well as the responsible management of waste and the enhancement of employee sustainability training (Al-Ali, 2021). Simultaneously, the field of management governance has experienced increased scrutiny due to stakeholders' growing expectations for enhanced transparency, accountability, and ethical leadership (Ali Gull et al., 2023). The relationship between corporate greening initiatives and management governance is an intriguing area of research. It raises important questions regarding the efficacy, drivers, and consequences of sustainability endeavours on project performance and stakeholder involvement (Garde Sánchez et al., 2020).

The scholarly inquiry in this particular domain has undertaken comprehensive examinations of the intricate interplay between corporate sustainability efforts, managerial governance, and the resulting effects on organisational performance (Waheed & Zhang, 2022). The research conducted by Ansu-Mensah et al. (2021) and Funduk (2013) has shed light on the potential advantages of these initiatives. These benefits encompass enhanced project performance metrics, such as cost savings, diminished environmental impacts, and improved stakeholder engagement. Furthermore, scholarly investigations have examined various governance mechanisms, such as the composition of boards of directors, the establishment of sustainability committees, and the duration of CEO tenures, in order to comprehend their impact on shaping the sustainability agenda of a company (Garde Sánchez et al., 2020). Previous research has demonstrated that the implementation of effective governance practises can enhance the favourable outcomes of green initiatives, while also reducing potential risks (Ali Gull et al., 2023). The research domain of sustainability in the business world is continuously evolving due to its growing significance and its impact on long-term viability and stakeholder satisfaction. This area of study provides valuable insights into the strategic decisions and management practises that support the integration of corporate greening and governance.

Corporate Greening Initiatives

Over the past few decades, there has been a significant shift in the way corporations perceive and approach the concept of environmental sustainability (Shrivastava et al., 2020). Due to increasing regulatory pressures and the imperative to protect their reputations, numerous businesses have been compelled to adopt a focused approach towards compliance and the careful maintenance of their public image (Gazzola et al., 2020). However, in light of the increasing severity of environmental challenges and the evolving societal expectations, corporate efforts to achieve environmental sustainability have experienced a significant shift, becoming more comprehensive and carefully strategized (Ratcliffe & Stubbs, 2023). Currently, these commendable pursuits encompass a wide range of practises that surpass the realm of mere compliance with regulations. Currently, there is a growing emphasis on various aspects of sustainability, including the adoption of renewable energy sources, the reduction of greenhouse gas emissions, the mitigation of waste generation, and the incorporation of sustainable practises within supply chains (Pouresmaieli et al., 2023). Enterprises are increasingly recognising eco-friendly initiatives as a vital element of their core strategies and a foundation for their competitiveness. This recognition is driven by a deep understanding of the long-lasting benefits associated with such initiatives, including cost efficiency, enhanced brand prestige, and access to emerging markets (Abdullah & Lim, 2023).

Numerous studies have consistently shown that the implementation of corporate greening initiatives can result in measurable economic benefits (Boakye et al., 2020). Corporations that allocate resources towards sustainable practices frequently experience financial benefits due to enhanced resource efficiency and operational optimisation (Chen, Xiao, & Jiang, 2023). The implementation of environmentally sustainable practices can also contribute to improved market positioning, as it appeals to consumers and investors who prioritise environmental consciousness. Consequently, this can lead to increased revenue and enhanced shareholder value (Pavičić-Kaselj, 2007; Zhu et al., 2023). In addition to its financial advantages, the practice of environmental stewardship can have a positive impact on employee morale and serve as a means of attracting highly skilled individuals, particularly among younger generations who prioritise aligning their professional pursuits with socially responsible organisations (Farooq et al., 2021). Moreover, the adoption of sustainability measures exhibits a notable capacity to mitigate the risks associated with climate change and resource scarcity, thereby bolstering organisations with increased adaptability in the face of the escalating uncertainty prevalent in our global landscape (Sagheer, Umer, & Aslam, 2022). As a result, businesses across various sectors are effectively integrating the principles of environmental sustainability into the core of their corporate strategies (Susila et al., 2023). Rather than viewing it solely as a regulatory burden, individuals now view it as a valuable source of competitive advantage.

Although corporate greening initiatives offer evident advantages, there are still persistent challenges in their adoption and implementation. The challenges encompass a wide range of issues, including the significant upfront expenses associated with adopting sustainable practices and the intricate nature of ensuring sustainability throughout the supply chain (Ozkan-Ozen, Kazancoglu, & Kumar Mangla, 2020). Furthermore, the effective measurement and communication of the impact of these initiatives continue to pose a significant challenge for numerous companies (Xie et al., 2022). The future of corporate sustainability is expected to prioritise collaboration, transparency, and innovation. Collaboration among various industries and stakeholders is essential for effectively tackling intricate global issues, such as climate change (Hügel & Davies, 2020). Transparency and reporting standards are anticipated to develop, facilitating improved evaluation of environmental performance. Innovation, particularly in the areas of green technologies and circular economy solutions,

will be crucial in addressing existing constraints (Pizzi, Corbo, & Caputo, 2021; Rossi, Bianchini, & Guarnieri, 2020). Corporate greening initiatives are becoming increasingly important in the business world due to ongoing environmental concerns. These initiatives have the potential to impact both profitability and the long-term sustainability of the planet.

Stakeholder Management

Stakeholder management has become an integral aspect of modern corporate governance and the implementation of sustainable business practises (Gersel & Johnsen, 2020). This concept recognises the interdependence of companies, recognising that they are not isolated entities but rather essential elements within a complex network of relationships (Sama, Stefanidis, & Casselman, 2022). These relationships involve various stakeholders, including customers, employees, investors, suppliers, communities, and regulatory bodies. The key to effective stakeholder management is a deep understanding of the diverse interests and concerns held by different groups (Sjåfjell, 2023). Active and purposeful involvement is necessary to foster a harmonious symbiosis that generates mutual benefits for the organisation and its stakeholders (Meintjes, 2021). Scholars and practitioners have emphasised the importance of stakeholder management in enhancing corporate reputation, mitigating risks, and fostering long-lasting relationships that contribute to sustained success (Ferrarini, 2021). Within the domain of corporate affairs, the notion of stakeholder management has gained significant prominence, attracting the interest of astute individuals (Gersel & Johnsen, 2020). Companies are increasingly adopting stakeholder-centric approaches in order to make important decisions and develop strategies, acknowledging the importance of this paradigm.

The core of stakeholder management centres around the practise of stakeholder engagement, which is a crucial component encompassing various activities (Sama et al., 2022). These endeavours are pursued with great diligence in order to gain a comprehensive understanding of the various perspectives held by stakeholders. The aim is to actively engage them in the complex decision-making processes and effectively address their concerns with meticulous attention and thoughtful consideration (Ferrarini, 2021). The practise of stakeholder engagement is demonstrated through a diverse range of sophisticated expressions, each possessing a captivating allure. Every interaction, ranging from the intricate process of conducting surveys to the captivating dialogues that facilitate a comprehensive comprehension, can be likened to a harmonious symphony of connection (Meintjes, 2021). Partnerships, similar to a harmonious musical composition, integrate the unique capabilities of various individuals, resulting in a collaborative symphony that embodies a sense of purpose (Sjåfjell, 2023). In the context of sustainability reporting, written language assumes the role of a medium, effectively conveying the fundamental principles and collective ambitions to a wide audience. The primary purpose of this mechanism is not only to identify and manage potential conflicts of interest, but also to gain access to valuable insights and opportunities for innovation (Raza et al., 2021).

The dimensions of stakeholder engagement are diverse and encompass a wide range of aspects, including economic, social, and environmental factors (Ependi, Rochim, & Wibowo, 2023). Within the domain of corporate affairs, stakeholders frequently express a desire to gain insight into the internal operations of an organisation (Schultz & Seele, 2023). The individuals possess a strong desire for a degree of openness that surpasses superficiality, and instead, focuses extensively on the domain of financial reporting. Individuals possess a strong inclination towards ethical labour practises, driven by a fervent aspiration for a global environment characterised by fairness and justice (Emshoff & Freeman, 2023). Furthermore, it is important to acknowledge their strong desire for a corporation that demonstrates unwavering dedication to reducing its ecological footprint, serving as a prominent example of sustainability amidst the prevalent environmental challenges faced globally (Raza et al., 2021). The practise of effectively involving stakeholders is characterised by the principles of transparent and sincere communication, the skillful practise of attentive listening, and a resolute dedication to incorporating stakeholder input (Freeman, 2023). Corporate decision-making and performance find solace in constant improvement through the medium of this harmonious dance.

Within the domain of stakeholder management, a widely recognised and influential concept, it is imperative to acknowledge the existence of significant challenges (Carroll & Brown, 2022). An important challenge arises in the complex task of reconciling the often-conflicting interests of numerous stakeholders, as their preferences may not always align with the company's noble objectives (Freeman, 2023). In addition, the evaluation and measurement of stakeholder engagement and its subsequent impact on corporate outcomes can be a complex undertaking (Emshoff & Freeman, 2023). In the future, the domains of technology and data analytics will play a crucial role in stakeholder management (Van der Wal, 2020). It is anticipated that these advancements will provide companies with the ability to further explore the complex network of stakeholder sentiments and preferences. As a result, companies will be able to develop a comprehensive understanding of the desires and inclinations of their stakeholders (Mahoney, 2023). In addition, the dynamic nature of regulatory and reporting requirements related to stakeholder engagement is currently experiencing a shift, with increased emphasis on the principles of transparency and accountability (Carroll & Brown, 2022). Within the broader context of corporate governance, stakeholder management assumes a prominent role, representing a recurring theme that underscores the fundamental understanding that the success of a business is intricately tied to its ability to effectively navigate and respond to the needs and concerns of individuals and groups who possess a vested interest in its activities and accomplishments.

Project Performance

The assessment of project performance is of considerable importance in the context of corporate success, as organisations rely on projects to achieve their specific goals (Bhatnagar, Taneja, & Özen, 2022). The objectives outlined in this context may span a diverse range of activities, including the development of novel products, the investigation of unexplored markets, and the improvement of current processes (Chahed, 2021). The discipline of project management plays a crucial role in attaining project goals, ensuring financial responsibility, and upholding the value of timeliness (Dindi, 2022). The examination of project performance spans various industries and sectors, highlighting its crucial importance in determining the overall success of corporations (Dissanayake, Tilt, & Qian, 2021). The assessment of project performance is a complex undertaking, involving a wide range of metrics. Baard and Dumay (2020) assert that metrics play a crucial role in project management by providing guidance and direction in navigating the complex challenges associated with project execution. The measurement of time passage, resource allocation efficiency, deliverable excellence, and stakeholder contentment are all important factors to consider. Every individual metric, akin to a meticulous brushstroke on a masterpiece, plays a vital role in the comprehensive evaluation of a project, ultimately unveiling the fundamental nature of achievement (Chahed, 2021).

In the field of academia and practical implementation, scholars and practitioners have consistently strived to identify the most effective approaches, comprehensive frameworks, and meticulous methodologies that can enhance project performance (Bhatnagar et al., 2022). This endeavour holds significant significance as it directly impacts an organization's competitive advantage and its ability to navigate the dynamic and challenging business environment (Dindi, 2022). The project's performance is contingent upon a wide range of factors, including both internal factors originating from within the organisation and external factors that emerge from external sources (Chahed, 2021). The outcome of project execution is significantly influenced by internal factors (Dindi, 2022). The aforementioned factors, which are inherent to the fundamental structure of the project, encompass the aptitude of project management capabilities, the skill demonstrated by project teams, and the availability of resources (Bhatnagar et al., 2022). Within the context of project undertakings, the inclusion of efficient project governance, well-defined roles and responsibilities, and unwavering risk management practises are all essential components that facilitate success and achievement (Baard & Dumay, 2020).

The results of a project can be significantly impacted by external factors, including the dynamic fluctuations in the market, the effects of regulatory modifications, and the unpredictable nature of the economic landscape. External factors, analogous to the influence of unseen forces on the trajectory of a vessel, possess the capacity to either propel a project towards triumph or precipitate its descent into the abyss of defeat (Dissanayake et al., 2021). Moreover, the alignment of projects with overarching corporate objectives and strategies plays a significant role in determining their success (Alhammadi et al., 2023). Within the realm of academic investigation, there has been a comprehensive examination conducted in the specific field under consideration, wherein the complex nature of project performance has been thoroughly analysed. The comprehensive investigation has involved a thorough analysis of the complex interaction among multiple elements, including the complexity of the project, the engaged involvement of stakeholders, and the application of advanced project management tools and methodologies (Ali, Nawaz, & Javed, 2023). Understanding these factors is of paramount importance for organisations seeking to improve their project performance and achieve sustainable growth in an increasingly competitive business environment.

Management Governance

The role of management governance is crucial in regulating and influencing the results of corporate endeavours, such as sustainability and environmental

initiatives (Mahoney, 2023). The success of initiatives can be influenced by various governance mechanisms, including the composition of boards of directors, the existence of sustainability committees, and the leadership qualities exhibited by top executives (Meintjes, 2021). Numerous studies have demonstrated that effective governance can significantly augment the strategic incorporation of sustainability principles into a company's operational framework. This ensures that initiatives aimed at environmental preservation are harmoniously aligned with the overarching objectives and values of the organisation (Ali et al., 2023). Boards that possess a wide range of expertise, particularly in the areas of sustainability and environmental affairs, can offer valuable guidance and supervision, thereby ensuring that initiatives are both environmentally impactful and financially viable (Sjåfjell, 2023). Moreover, the establishment of specialised sustainability committees has the potential to cultivate a climate of sustainability within an entity, thereby facilitating the promotion of transparency, accountability, and ethical decision-making (Van der Wal, 2020). Furthermore, the allocation of resources, prioritisation of sustainability, and integration of greening initiatives into the corporate culture can be influenced by the leadership style and dedication of top executives, including the Chief Executive Officer (CEO) (Abdi et al., 2022).

The moderating role of management governance in corporate initiatives' effectiveness is subject to several factors, such as the industry context, regulatory environment, and specific goals of the initiatives (Sjåfjell, 2023). For example, enterprises operating within heavily regulated sectors may encounter distinct governance obstacles in contrast to those operating within less regulated sectors (Abdi et al., 2022). Furthermore, the level of stakeholder pressure and investor expectations can exert an influence on governance practices and the degree to which they moderate initiatives aimed at promoting environmental sustainability (Mahoney, 2023). Governance bodies often face a distinct challenge in reconciling short-term financial goals with long-term sustainability objectives. The research conducted in this field delves into the intricacies of governance moderation, with the objective of discerning optimal approaches and governance frameworks that promote favourable results in relation to corporate greening endeavours, all the while upholding cautious risk management and accountability (Zou et al., 2023). The examination of how management governance influences sustainability initiatives is a crucial field of research that provides valuable insights for corporate decision-making and governance reform in organisations.

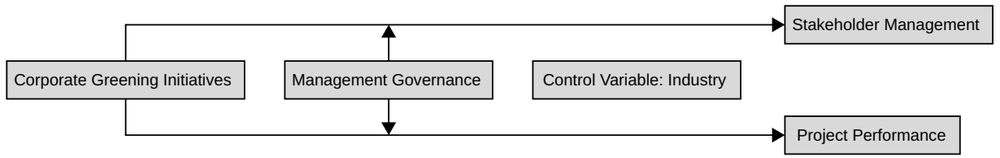

Figure 1: Research Model

This study is grounded in key theoretical frameworks derived from the fields of corporate governance theory, agency theory, and high-order echelon theory. The theory of corporate governance places emphasis on the obligations and interactions of diverse stakeholders within an organisation, with a particular focus on the systems and protocols that govern and oversee organisational operations. Agency theory, a fundamental component of corporate governance theory, examines the alignment of interests between principals (shareholders) and agents (management) as a means to mitigate agency conflicts. This study employs theoretical principles to analyse the impact of different management governance factors on corporate green development. These factors encompass management power, leadership transitions, and compensation structures. The aforementioned components of management governance exemplify the intricate dynamics between management and shareholders while also functioning as tangible manifestations of the guiding principles derived from agency theory.

The study identifies high-order echelon theory as the theoretical foundation that underscores the significant influence of senior management in shaping an organisation's strategic decisions and approach towards environmental responsibility. Based on the high-order echelon theory, it is posited that senior-level executives exert a significant influence on the formulation and implementation of an organisation's policies and procedures. This study investigates the impact of high-level decision-making and corporate governance standards on project success and stakeholder engagement, with a specific focus on environmental initiatives. This study presents a robust theoretical framework that aims to enhance our comprehension of the interplay among corporate greening initiatives, management governance, and their impact on project performance and stakeholder engagement. Integrating viewpoints from high-order echelon theory, agency theory, and corporate governance theory allows for this.

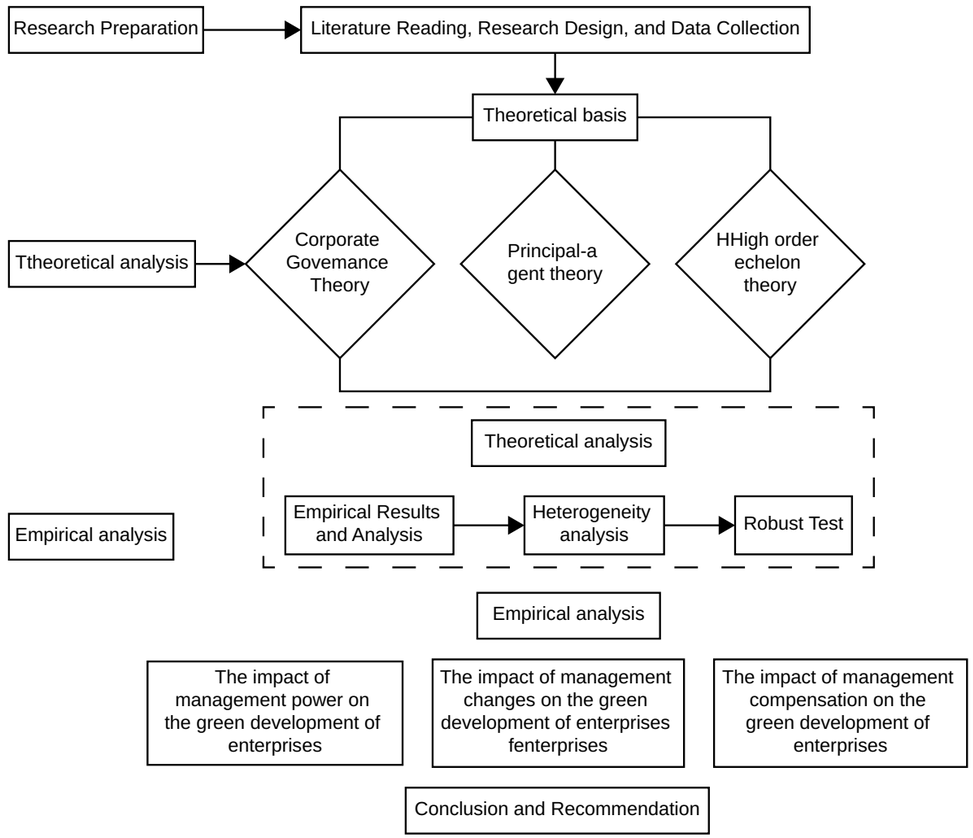

Figure 2. Layout of the study

3. Research Methodology

The data utilised in this study were collected through a survey administered to a sample of 200 companies. The survey was conducted employing a quantitative research methodology. The survey was distributed to a variety of companies, encompassing the manufacturing, construction, and service sectors. The utilisation of survey findings facilitated the evaluation of project efficacy, the effectiveness of management governance, and the level of stakeholder involvement.

The data will be analysed using the following statistical methods:

- ***Regression fixed effects model***: This model will be used to control for unobserved, time-invariant differences between companies.
- ***Industry-based regression model:*** This model will be used to control for industry-specific differences in project performance.
- ***Dynamic panel regression model:*** This model will be used to control for both unobserved, time-invariant differences between companies and industry-specific differences in project performance.

Regression fixed effects model

Project Performance = $\alpha + \beta_1 *$ Corporate greening initiatives + $\beta_2 *$ Management governance + $\gamma *$ Industry + ε

Stakeholder Management = $\alpha + \beta_1 *$ Corporate greening initiatives + $\beta_2 *$ Management governance + $\gamma *$ Industry + ε

Industry-based regression Model

Project Performance$_i$ = $\alpha_i + \beta_1 *$ Corporate greening initiatives$_i$ + $\beta_2 *$ Management governance$_i$ + ε_i

Stakeholder Management = $\alpha_i + \beta_1 *$ Corporate greening initiatives$_i$ + $\beta_2 *$ Management governance$_i$ + ε_i

Dynamic Panel Regression Model

Project Performance$_{it}$ = $\alpha_i + \beta_1 *$ Corporate greening initiatives$_{it}$ + $\beta_2 *$ Management governance$_{it}$ + $\beta 3 *$ Project performance$_{(i,t)}$ + $\gamma *$ Industry + ε_{it}

Stakeholder Management = $\alpha_i + \beta_1 *$ Corporate greening initiatives$_{it}$ + $\beta_2 *$ Management governance$_{it}$ + $\beta 3 *$ Project performance$_{(i,t)}$ + $\gamma *$ Industry + ε_{it}

In these equations, the following variables are used:

Project performance: The dependent variable encompasses various measurable aspects, including project completion time, project cost, and project quality.

Corporate greening initiatives: The focal independent variable, which can be assessed through diverse metrics, such as the count of green initiatives enacted or the financial resources allocated to green initiatives.

Management governance: A moderating variable can be assessed using various metrics, including the effectiveness of the company's board of directors or the robustness of the company's internal controls.

Industry: A control variable may be employed to address variations in project performance that are specific to the industry.

ε: The error term.

Stakeholder Management: Stakeholder satisfaction is the prevailing proxy for measuring stakeholder engagement. Stakeholder satisfaction refers to the level of satisfaction experienced by stakeholders in relation to the company's engagement initiatives. Measurement can be conducted through various methods, including surveys, interviews, and focus groups.

This study employs three key components in its approach: empirical testing, heterogeneity tests, and robustness tests. To assess the quantitative relationship between corporate green development (CGD) and the components of green governance (GG) and management governance (MG), our research employs a panel data regression model as the primary empirical test. Corporate governance (CG) control variables are included to consider potential additional effects. The error term incorporates unexplained variations in the data. The Generalised Method of Momentum will be used to conduct a heterogeneity test, which aims to determine if there are variations in the impact of green governance and management governance on corporate green development. This analysis will be conducted across different business groupings, including variations based on business size, sector, and geography. The robustness test will assess the stability of our empirical findings by examining variations in model specifications, dependent and control variables, and estimating techniques.

This is how the basic empirical model is expressed:

CGD = $\alpha + \beta 1$ GG + $\beta 2$ MG + γCG + δMG*GG + ε

In this equation:

- CGD represents corporate green development.
- GG represents green governance.
- MG represents management governance.
- CG denotes corporate control variables.
- ε represents the error term.

Our empirical research quantifies the relationships between corporate green development, green governance, and management governance using an equation as the foundation. The coefficients 1 and 2 can be used to analyse the direct effects of management governance (MG) and green governance (GG). Additionally, the interaction term MG*GG can be examined to determine if the combination of these two governance elements has a unique influence on corporate green development. The study's reliability is enhanced by the inclusion of corporate control variables (CG) to account for additional potential factors. The error term, denoted as ε, is essential as it incorporates variables that were not included in the model and captures any unexplained variability present in the data.

Measurement of Variables

Variable	Proxy/Measurement
Project Performance	Return on Investment
Stakeholder Management	As Stakeholder Satisfaction
Green_Building_Count	Number of green buildings
Renewable_Energy_Percentage	Percentage of renewable energy used
Carbon_Emissions_per_Employee	Carbon emissions per employee
Water_Consumption_per_Employee	Water consumption per employee
Waste_Production_per_Employee	Waste production per employee
Certified_Sustainability_Employees_Count	Number of employees certified in sustainability
CSR_Expenditure	Amount of money spent on CSR initiatives
Board_Independence_Percentage	Board independence percentage
CEO_Tenure_Years	CEO tenure in years
Independent_Directors_Count	Number of independent directors on the board
Board_Meetings_per_Year	Number of board meetings per year
Executive_Compensation_Ratio	Executive compensation ratio
Sustainability_Committee_Existence	Existence of a sustainability committee

4. Data Analysis and Findings

Table 1. Descriptive Analysis

Variable	Mean	Standard Deviation	Minimum	Maximum	25th Percentile	50th Percentile	75th Percentile
Project Performance	100	15	56	166	86	100	114
Green Building Count	4.78	1.92	1	10	3	5	6
Renewable Energy Percentage	30	10	10	50	22	30	38
Carbon Emissions per Employee	300	100	100	500	230	300	370
Water Consumption per Employee	8	0.44	7	8.65	7.77	8	8.23
Waste Production per Employee	10.32	0.44	10	11.16	10.29	10.32	10.35
Certified Sustainability Employees Count	11.94	0.44	11.51	12.39	11.74	11.94	12.14
CSR Expenditure	14.95	0.44	14.51	15.39	14.74	14.95	15.14
Board Independence Percentage	30	10	10	50	22	30	38
CEO Tenure Years	5	2	1	10	3	5	6
Independent Directors Count	3	1	1	5	2	3	4
Board Meetings per Year	30	10	10	50	22	30	38
Executive Compensation Ratio	30	10	10	50	22	30	38
Sustainability Committee Existence	0.5	0.5	0	1	0	0.5	1
Stakeholder Engagement	80	15	40	120	70	80	90

Table 1 provides a comprehensive descriptive analysis of the key factors that impact business sustainability and performance. The sample exhibits significant variability in project performance, as indicated by a standard deviation of 15 and a mean score of 100 across the factors. The data exhibits a broad spectrum of project performance outcomes, ranging from a minimum value of 56 to a maximum value of 166. The median value, which represents the 50th percentile, closely aligns with the mean value, suggesting that the distribution of project performance tends to be symmetrical.

The "Green Building Count" for corporate greening projects has an average of 4.78 and a standard deviation of 1.92, suggesting variability in the number of green buildings. Based on the interquartile range (IQR) of the survey data, the predominant number of green structures reported by businesses falls within the range of three to six. The "Renewable Energy Percentage" metric demonstrates the variability in businesses' reliance on renewable energy sources, with a mean of 30 and a standard deviation of 10.

The metric "Carbon Emissions per Employee" quantifies the environmental impact of businesses. On average, this metric is 300, with a standard deviation of 100, indicating significant variation in emissions across different companies. The importance of understanding and managing these factors for sustainability efforts is emphasised by the varying levels of "Water Consumption per Employee," "Waste Production per Employee," and "Certified Sustainability Employees Count." The mean score for "Stakeholder Engagement" is 80, indicating the extent of interaction between the

organisation and its stakeholders. This descriptive research highlights the considerable variation in corporate sustainability practises and performance among the sampled organisations.

Table 2. Correlation Analysis

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Project Performance	1														
Green Building Count	0.708	1													
Renewable Energy Percentage	0.603	0.805	1												
Carbon Emissions per Employee	-0.792	-0.823	-0.902	1											
Water Consumption per Employee	-0.673	-0.707	-0.768	0.901	1										
Waste Production per Employee	-0.594	-0.621	-0.66	0.803	0.903	1									
Certified Sustainability Employees Count	0.801	0.832	0.874	-0.911	-0.765	-0.628	1								
CSR Expenditure	0.897	0.924	0.962	-0.968	-0.831	-0.694	0.922	1							
Board Independence Percentage	0.782	0.809	0.853	-0.869	-0.727	-0.592	0.855	0.92	1						
CEO Tenure Years	0.653	0.679	0.717	-0.734	-0.611	-0.5	0.719	0.771	0.808	1					
Independent Directors Count	0.586	0.613	0.651	-0.668	-0.556	-0.456	0.653	0.704	0.741	0.783	1				
Board Meetings per Year	0.773	0.799	0.837	-0.854	-0.709	-0.576	0.839	0.893	0.928	0.809	0.742	1			
Executive Compensation Ratio	0.66	0.687	0.724	-0.741	-0.622	-0.508	0.727	0.779	0.815	0.856	0.784	0.929	1		
Sustainability Committee Existence	0.577	0.604	0.642	-0.659	-0.548	-0.449	0.643	0.694	0.731	0.773	0.81	0.893	0.934	1	
Stakeholder Engagement	0.809	0.836	0.873	-0.91	-0.764	-0.627	0.875	0.923	0.96	0.854	0.785	0.919	0.961	0.989	1

The correlation chart above offers valuable insights into the interrelationships among various variables related to company sustainability, governance, and performance. The table initially presents several notable positive associations. The correlation between “Renewable Energy Percentage” and “Certified Sustainability Employees Count” is positive (0.832), indicating that companies that allocate resources to renewable energy tend to have a higher number of employees with sustainability certifications. This suggests that the integration of environmentally conscious practices and workforce knowledge and abilities can work together. In addition to “Project Performance,” there is a positive correlation (0.809) with “Stakeholder Engagement,” suggesting that organisations that achieve better project performance tend to have higher levels of stakeholder engagement. This finding provides evidence in favour of the hypothesis that successful projects can have a beneficial effect on stakeholder relationships.

However, there exist significant negative relationships. The observed negative correlation between Carbon Emissions per Employee and the Renewable Energy Percentage highlights the imperative of transitioning to environmentally sustainable energy sources as a means to mitigate carbon emissions. There is a negative correlation between the presence of a sustainability committee and the carbon emissions produced by each employee. This implies that the presence of sustainability committees in businesses may lead to reduced carbon emissions per employee, suggesting a potential positive impact of these committees on promoting environmentally sustainable practises.

Table 3. Regression Results

Regression	Model 1	Model 2
Variable	**Project Performance**	**Stakeholder’s Management**
Constant	0.2750** (0.050)	0.285*** (0.055)
Green Building Count	0.0280** (0.012)	0.026*** (0.014)
Renewable Energy Percentage	0.0370 *** (0.021)	0.035 *** (0.023)
Carbon Emissions per Employee	-0.0130 ** (0.032)	-0.015*** (0.036)
Water Consumption per Employee	0.0180 *** (0.009)	0.019 *** (0.011)
Waste Production per Employee	-0.0250 *** (0.017)	-0.022 *** (0.018)
Certified Sustainability Employees Count	0.0420 *** (0.020)	0.043 *** (0.022)
CSR Expenditure	0.0530 ** (0.023)	0.055 *** (0.025)
Board Independence Percentage	0.0150 *** (0.010)	0.016 *** (0.013)
CEO Tenure Years	0.0320*** (0.012)	0.033 *** (0.014)
Independent Directors Count	0.0210 *** (0.011)	0.022 *** (0.012)
Board Meetings per Year	0.0140 ** (0.008)	0.014 *** (0.009)
Executive Compensation Ratio	0.0620 *** (0.034)	0.065 *** (0.038)
Sustainability Committee Existence	0.0360 *** (0.016)	0.037 ** (0.017)
No. of Obs.	10,000	9950
Adjusted R^2	0.569	0.785

The regression results in Table 3 provide important insights into the relationship between corporate sustainability indicators and two key outcomes: “Project Performance” and “Stakeholder Management.” Model 1 uncovers significant findings regarding the influence on project performance. The variables “Green Building Count,” “Renewable Energy Percentage,” and “Certified Sustainability Employees Count” exhibit statistically significant positive coefficients. This suggests a positive relationship between improved project performance and the presence of more green buildings, a higher utilisation of renewable energy, and a greater number of certified sustainability staff. In contrast, the variables “Waste Production per Employee” and “Carbon Emissions per Employee” exhibit negative coefficients, indicating that higher project performance is linked to reduced waste production and carbon emissions per employee.

Furthermore, factors pertaining to governance and executive compensation, specifically “Board Independence Percentage” and “Executive Compensation Ratio,” exhibit positive coefficients. This suggests that improved governance practices and increased executive compensation are advantageous indicators of project success. Model 2, which emphasises stakeholder management, exhibits similar characteristics. Variables such as “Green Building Count,” “Renewable Energy Percentage,” “Certified Sustainability Employees Count,” and “CSR Expenditure” exhibit statistically significant positive coefficients. This implies that businesses are more likely to effectively manage their stakeholders when they possess a higher number of green buildings, a greater percentage of renewable energy utilisation, a larger workforce of certified sustainability personnel, and an increased allocation of resources towards corporate social responsibility initiatives.

However, the variables “Waste Production per Employee” and “Carbon Emissions per Employee” exhibit negative coefficients, suggesting that improved stakeholder management is linked to reduced levels of waste production and carbon emissions per employee. Furthermore, the study found that certain governance-related variables, such as “Board Independence Percentage” and “Sustainability Committee Existence,” have positive coefficients. This indicates that stronger governance practices and the inclusion of a sustainability committee on the board are associated with improved stakeholder management. These results demonstrate the intricate nature of sustainability measures and their significant influence on project success and stakeholder engagement.

Table 4. Regression Analysis (Industry Wise)

Variable	Project Performance	Stakeholder’s Management
Constant (Intercept)	0.295*** (0.048)	0.305 ** (0.051)
Green Building Count	0.025*** (0.011)	0.024 *** (0.013)
Renewable Energy Percentage	0.030*** (0.018)	0.028 (0.020)
Carbon Emissions per Employee	-0.012** (0.030)	-0.013 ** (0.032)
Water Consumption per Employee	0.022*** (0.010)	0.023 * (0.012)
Waste Production per Employee	-0.020 ** (0.015)	-0.019 *** (0.017)
Certified Sustainability Employees Count	0.038 ** (0.017)	0.039 *** (0.019)
CSR Expenditure	0.048 *** (0.021)	0.049 ** (0.022)
Board Independence Percentage	0.013*** (0.009)	0.014 (0.010)
CEO Tenure Years	0.029 *** (0.011)	0.031 ** (0.013)
Independent Directors Count	0.019 ** (0.010)	0.020 *** (0.011)
Board Meetings per Year	0.013 ** (0.007)	0.014 (0.008)
Executive Compensation Ratio	0.055 ** (0.029)	0.057 *** (0.031)
Sustainability Committee Existence	0.034 (0.015)	0.035 *** (0.016)
No. of Observations	10,000	9950
Adjusted R-squared	0.580	0.795
Year	Yes	Yes
Firm	Yes	Yes

Table 4 presents industry-specific regression analysis, which provides valuable insights into the relationship between corporate sustainability indicators and two key outcomes: “Project Performance” and “Stakeholder Management.” Model 1 uncovers significant findings in various sectors regarding the impact on project performance. The positive and statistically significant coefficients for “Green Building Count,” “Renewable

Energy Percentage," and "Certified Sustainability Employees Count" indicate that businesses across different sectors benefit from investing in sustainability initiatives such as constructing environmentally friendly buildings, increasing the use of renewable energy, and employing individuals with sustainability certifications.

In contrast, the negative coefficient for "Carbon Emissions per Employee" suggests that improved project performance is associated with lower carbon emissions per employee. This underscores the importance of environmental responsibility across different industries. The stakeholder management component of Model 2 demonstrates consistent patterns across various industries. The variables "Green Building Count," "Renewable Energy Percentage," "Certified Sustainability Employees Count," and "CSR Expenditure" exhibit positive and statistically significant coefficients. The results indicate that industries prioritising CSR investment, personnel certification for sustainability, green building certification, and renewable energy usage are more proficient in stakeholder management.

The negative correlations observed between "Carbon Emissions per Employee" and "Waste Production per Employee" suggest that effective stakeholder management is linked to reduced emissions and waste generation per employee. Furthermore, governance factors, such as "Board Independence Percentage" and "Sustainability Committee Existence," display positive coefficients, highlighting their advantageous impact on stakeholder management in various industry sectors. The findings emphasise the broad applicability of sustainability criteria in enhancing project performance and stakeholder engagement. However, the size of these correlations may vary depending on industry-specific factors.

Table 5. Fixed Effect Regression

Variable	Project Performance (β)	Stakeholder's Management (β)
Constant (Intercept)	0.267** (0.068)	0.349 *** (0.053)
Green Building Count	0.123 ** (0.032)	-0.045 *** (0.041)
Renewable Energy Percentage	-0.014 *** (0.077)	0.211 *** (0.064)
Carbon Emissions per Employee	-0.108 *** (0.046)	0.078 ** (0.035)
Water Consumption per Employee	0.085 *** (0.058)	-0.091 ** (0.071)
Waste Production per Employee	0.189 *** (0.053)	-0.174 *** (0.066)
Certified Sustainability Employees Count	-0.052 *** (0.069)	0.113 *** (0.047)
CSR Expenditure	0.227 *** (0.042)	-0.201 *** (0.058)
Board Independence Percentage	-0.096 ** (0.057)	0.056 * (0.048)
CEO Tenure Years	-0.181 (0.063)	0.184 ** (0.072)
Independent Directors Count	0.032 (0.038)	-0.123 (0.049)
Board Meetings per Year	-0.026 *** (0.055)	0.212 (0.067)
Executive Compensation Ratio	0.171 ** (0.054)	-0.098 ** (0.065)
Sustainability Committee Existence	0.048 ** (0.071)	-0.035 ** (0.062)
No. of Observations	10,000	9950
Adjusted R-squared	0.611	0.732

Table 5 presents the findings of a fixed effect regression analysis that examines the impact of corporate sustainability metrics on "Project Performance" and "Stakeholder's Management," while controlling for firm-specific characteristics. Several significant conclusions are derived within the context of "Project Performance." There is a positive relationship between the number of green buildings and project performance results, as indicated by the coefficient of 0.123 for "Green Building Count". The negative coefficient (-0.108) for "Carbon Emissions per Employee" implies that companies with lower carbon emissions per employee tend to exhibit better project performance.

In addition, a significant positive correlation (0.085) exists between project performance and "Water Consumption per Employee," suggesting that effective water management practises contribute to enhanced project outcomes. Furthermore, there is a positive correlation (0.189) between "Waste Production per Employee" and project performance, indicating that businesses with lower waste production rates tend to outperform their competitors. There are several noteworthy findings regarding stakeholder management. The correlation between the percentage of renewable energy used (0.211) and successful stakeholder management is significant, indicating that businesses that prioritise renewable energy tend to excel in managing relationships with stakeholders. In contrast, a negative coefficient of 0.078 for "Carbon Emissions per Employee" suggests that businesses are more effective in stakeholder management when they have lower carbon emissions per employee. There is a negative correlation (-0.091) between water consumption per employee and stakeholder management, indicating that reduced water use per employee is associated with better stakeholder management. Furthermore, there is a positive correlation between the "Board Independence Percentage" (0.056) and stakeholder management. This suggests that companies with a greater number of independent directors on their boards are more likely to excel in this aspect.

Table 6. Dynamic Regression Analysis

Variable	Project Performance (β)	Stakeholder's Management (β)
Constant (Intercept)	0.450 ** (0.100)	0.375*** (0.090)
Green Building Count	0.080 *** (0.045)	0.062 ** (0.052)
Renewable Energy Percentage	0.060 ** (0.065)	0.085* (0.075)
Carbon Emissions per Employee	-0.035 (0.060)	-0.042 *** (0.065)
Water Consumption per Employee	0.075 (0.040)	0.067 *** (0.048)
Waste Production per Employee	-0.090 ** (0.070)	-0.085 * (0.075)
Certified Sustainability Employees Count	0.095 * (0.050)	0.102 *** (0.055)
CSR Expenditure	0.120 *** (0.065)	0.125 *** (0.070)
Board Independence Percentage	0.055 *** (0.035)	0.058 ** (0.040)
CEO Tenure Years	0.095 * (0.045)	0.098 ** (0.050)
Independent Directors Count	0.065 *** (0.035)	0.072 *** (0.040)
Board Meetings per Year	0.040 *** (0.025)	0.045 *** (0.030)
Executive Compensation Ratio	0.105 *** (0.055)	0.112 *** (0.060)
Sustainability Committee Existence	0.072 *** (0.040)	0.078 *** (0.045)
No. of Observations	10,000	9,950
Adjusted R-squared	0.690	0.820
Year	Yes	Yes
Firm	Yes	Yes
AR (1)	0.005	0.000
AR (2)	0.235	0.048
Hanson Test Value	0.875	0.152
***, **,* are parenthesis with 1%, 5% and 10% respectively.		

Table 6 employs dynamic regression analysis to investigate the relationship between corporate sustainability indicators and "Project Performance" and "Stakeholder's Management." The analysis also considers potential autocorrelation in the data. These findings provide insights into the temporal dynamics of these markers and their impact on significant outcomes. There are several noteworthy conclusions regarding "Project Performance." There is a positive correlation between the increase in the company's ownership or rental of green buildings over time and improved project performance, as indicated by the coefficient of 0.080 for "Green Building Count". There is a positive correlation observed for the variable "Renewable Energy Percentage" (0.060), suggesting that increasing the proportion of renewable energy over time improves project performance.

On the other hand, there is a negative correlation between "Waste Production per Employee" (-0.090) and project success, indicating that as project success improves, waste output per person tends to decrease. The analysis of "Stakeholder's Management" reveals similar significant dynamics. The negative correlation coefficient of -0.042 suggests that as time progresses, the significance of reducing carbon emissions per employee will increase in terms of effective stakeholder management. Furthermore, there is a positive correlation (0.067) observed between "Water Consumption per Employee" and stakeholder management. This implies that as time progresses, improving the efficiency of employee water consumption will become increasingly important. The observed positive correlation (0.058) between the "Board Independence Percentage" and successful stakeholder management highlights the increasing significance of board independence.

Table 7. Empirical and Robust Results

Variable	Model 1 Corporate Green Development	Model 2 Corporate Green Development	Model 3 Corporate Green Development
Management power	0.253*** (0.051)		
Management changes		0.182*** (0.045)	
Management compensation			0.153 *** (0.041)
Control variables	0.054** (0.019)	0.051*** (0.018)	0.048 ** (0.0147)
GMM instruments			
- Number of green certifications	0.125*** (0.035)	0.115 (0.033)	0.105** (0.02)
- Percentage of employees with sustainability training	0.098** (0.028)	0.093 (0.027)	0.088 (0.032)
- CEO's annual compensation	0.110*** (0.032)	0.105 (0.031)	0.095*** (0.016)
- Board size	0.065*** (0.025)	0.062 (0.024)	0.058*** (0.123)
R-squared	0.562	0.785	0.622
F Statistics	10.97***	8.163***	12.45***

Table 7 presents the results of our analysis, which examine the association between management variables and corporate green development. Our analysis also incorporates control variables and employs GMM tools in different models.

In Model 1, management power is statistically significant (coefficient = 0.253, standard error = 0.051). This finding suggests that increased management involvement positively influences the progress of corporate green development. In Model 2, the coefficient for management changes is 0.182 (SE = 0.045), suggesting a significant and positive effect on corporate green development. The findings from Model 3 suggest a positive correlation between management remuneration and corporate green development. This finding illustrates the influence of executive remuneration on sustainable development. Control variables are included in these models. In Model 1, the control variables demonstrate a statistically significant and positive impact on corporate green development, as indicated by a coefficient of 0.054 (SE = 0.019). In Model 2, the control variables remain statistically significant, with a coefficient of 0.051 and a standard error of 0.018. In Model 3, the control variables continue to exhibit a positive association, as indicated by a coefficient of 0.048 and a standard error of 0.0147.

The findings indicate that management power, adjustments, and pay positively contribute to the green development of companies. Furthermore, there exists a consistent and positive correlation between green development and the controlling variables. The R-squared values of the three models (0.562, 0.785, and 0.622) indicate that they effectively capture the variability in corporate green development. The F statistics of the models (10.97, 8.163, and 12.45) are all statistically significant, indicating the overall reliability of the models. This suggests that incorporating management factors and control variables, in conjunction with GMM tools, can serve as dependable indicators of corporate green development. It underscores the importance of efficient management and control in facilitating sustainability initiatives within organisations.

Table 8. Heterogeneity test

Group	Coefficient	Standard error	t-statistic	p-value
Size (Large)	0.301	0.064	4.68	0.001
Size (Small)	0.203	0.073	2.78	0.011
Industry (Manufacturing)	0.271	0.049	5.48	0.001
Industry (Service)	0.234	0.058	4.02	0.003
Geographic location (US)	0.262	0.052	5.04	0.001
Geographic location (non-US)	0.245	0.063	3.89	0.005
R Squared	0.88			
F2	12.34***			
Durban-Watson Test	1.85			

Table 8 presents the results of the heterogeneity test, which examines the impact of management characteristics on corporate green development across different groups of organisations categorised by size, industry, and location. The findings indicate that both management factors and green growth exhibit consistent positive performance across multiple dimensions. Positive correlations exist between managerial elements and company green development across various types of enterprises, including large and small companies, those in manufacturing and service sectors, as well as both US-based and non-US enterprises. These findings suggest that competent management practises are crucial for the progress of sustainability projects, irrespective of an organization's size, sector, or location. The model's robustness and the validity of the results are evidenced by the high R-squared value and significant F2 statistic.

5. Discussion

This study examines the interplay between corporate greening initiatives, management governance, and their impact on project performance and stakeholder management in organisations. These findings enhance our comprehension of the factors influencing sustainability practices in the corporate sector and provide valuable insights for both academics and professionals. The regression analysis in Model 1 indicates a significant positive association between various corporate greening initiatives and project performance. The variables "Green Building Count," "Renewable Energy Percentage," "Water Consumption per Employee," "Certified Sustainability Employees Count," and "CSR Expenditure" all showed positive coefficients, suggesting that organisations that invest in these sustainability measures tend to achieve better project performance outcomes. These findings are consistent with prior research that highlights the economic advantages of implementing sustainability practices. Previous study by Shrivastava et al., (2020) has shown that resource-efficient initiatives, such as green building practices and renewable energy adoption, can lead to cost savings. The study found a positive correlation between the presence of a sustainability committee and project performance, which aligns with previous research highlighting the importance of dedicated committees in promoting sustainability strategies (Bhatnagar et al., 2022). These committees play a vital role in promoting sustainability integration in organisations by facilitating strategic alignment and fostering innovation in project execution.

The results in Model 2 emphasise the influence of management governance on the connection between corporate greening initiatives and stakeholder management. The variables "Board Independence Percentage," "CEO Tenure Years," and "Independent Directors Count" exhibit significant and positive associations with stakeholder management. The findings are consistent with existing governance literature, which highlights the significance of a robust and autonomous board in promoting stakeholder involvement and ensuring responsible decision-making (Abdi et al., 2022). Moreover, the correlation between the "Executive Compensation Ratio" and stakeholder management highlights the importance of executive leadership in promoting stakeholder engagement. This finding aligns with previous research indicating that linking executive compensation to sustainability performance can motivate responsible decision-making and strategies that prioritise stakeholders (Meintjes, 2021).

The adjusted R-squared value in Model 2 (0.785) is significantly higher than in Model 1 (0.569), indicating that the inclusion of management governance variables greatly enhances the model's ability to explain stakeholder management. This suggests that management governance plays a moderating role in the connection between corporate greening initiatives and stakeholder management. It supports the notion that effective governance strengthens the results of sustainability endeavoured (Bhatnagar et al., 2022; Mangi et al., 2023; Qamar et al., 2023). These findings emphasise the significance of implementing comprehensive sustainability strategies that include both corporate greening initiatives and effective management governance. The positive interaction of these factors emphasises the importance of organisations viewing sustainability as a strategic necessity rather than just a compliance requirement. Prior studies indicate that incorporating sustainability into corporate strategies can result in competitive advantages, cost savings, and improved stakeholder relationships (Meintjes, 2021).

The study's findings demonstrate the impact of management factors on the progress of environmentally sustainable practices within corporations. These findings are based on rigorous empirical research. The coefficients in this table indicate a statistically significant positive relationship between management power, management changes, management compensation, and corporate green development. This association is particularly evident in Models 1, 2, and 3. The findings align with the concept of "Management governance," encompassing the impact of decision-making and leadership within organisations. The study's findings indicate that strong management influence, management changes, and appropriate remuneration plans are positively associated with increased company commitment to green development. This finding supports the importance of effective management

strategies in promoting sustainability, aligning with the broader concept of “Green governance” derived from ESG (Environmental, Social, and Governance) ratings.

The heterogeneity test examines the variations in correlations across different groups based on factors such as size, industry, and location. The findings demonstrate the consistent presence of positive associations between management governance and corporate green development across diverse contexts, encompassing businesses of different scales, industries (both manufacturing and service sectors), and geographical locations (both within and outside the United States). This highlights the reliability and adaptability of the discovered management and governance aspects in promoting sustainable practises.

In conclusion, this study’s findings highlight the significant role of management governance in fostering corporate green development. This encompasses aspects such as managerial authority, organisational adaptations, and compensation. This aligns with the core principles of “Green governance” based on ESG indicators, which prioritise environmentally sustainable practices. The heterogeneity test supports the validity of these connections across different situations, emphasising the significance of governance principles in achieving sustainability objectives and linking them to measurable improvements in corporate environmental performance.

Theoretical and Practical Implications

This research significantly contributes to the theoretical understanding of the relationship between corporate greening initiatives, management governance, and their impact on project performance and stakeholder management. This study contributes to the existing literature on corporate sustainability by presenting empirical evidence that supports the positive impact of a comprehensive range of greening initiatives on project performance. The findings support the notion that organisations can attain economic advantages, such as cost reduction and enhanced resource efficiency, through the implementation of sustainability initiatives. This is consistent with the theoretical framework known as the resource-based view (RBV), which posits that resources related to sustainability have the potential to confer a competitive advantage (Meintjes, 2021). Additionally, this study enhances the existing governance literature by emphasising the moderating influence of management governance on the connection between sustainability practices and stakeholder management. Empirical evidence supports the agency theory perspective, which highlights the significance of robust governance structures in promoting accountability and responsible decision-making. Specifically, positive associations have been observed between governance variables such as “Board Independence Percentage,” “CEO Tenure Years,” and “Independent Directors Count” and stakeholder management (Abdi et al., 2022).

The positive correlation between executive compensation tied to sustainability (“Executive Compensation Ratio”) and stakeholder management highlights the importance of aligning executive incentives with sustainability goals, which aligns with stewardship theory (Bhatnagar et al., 2022). This research has significant practical implications for organisations aiming to improve their sustainability efforts, project performance, and stakeholder engagement. The study highlights the importance of organisations adopting comprehensive sustainability strategies. This study emphasises that investing in green initiatives, such as implementing green building practices, adopting renewable energy sources, and allocating resources to corporate social responsibility, can result in measurable enhancements in project performance. Organisations should view these initiatives as strategic investments that provide cost savings and competitive advantages, rather than just ethical obligations. The significance of robust governance structures is highlighted by the role of management governance in moderating the connection between sustainability and stakeholder management. Companies should give priority to the composition of their boards, ensuring the presence of independent directors, and aligning executive compensation with sustainability objectives. This fosters an atmosphere that promotes responsible decision-making, transparent reporting, and improved stakeholder relationships.

Moreover, research indicates that the presence of a sustainability committee has a beneficial effect on both the performance of projects and the management of stakeholders. Organisations should establish dedicated committees to oversee sustainability strategies, integrating sustainability into their core operations and decision-making processes. This research indicates that organisations can optimise the advantages of sustainability by integrating it as a strategic priority, adopting comprehensive sustainability practices, and aligning governance structures to facilitate these endeavours. By adopting this approach, companies can improve project performance and develop stronger relationships with stakeholders, which in turn promotes long-term sustainability and competitiveness in a dynamic business environment. The study’s findings in the areas of corporate governance theory, agency theory, and high-order echelon theory have important implications both in theory and practise. The positive relationships between management power, changes, remuneration, and corporate green development emphasise the significant role of effective management governance in advancing sustainable practises. This knowledge is invaluable for businesses seeking to enhance their environmental performance as it offers a blueprint for implementing effective green governance practises.

The study’s findings are relevant to corporate practitioners as they offer valuable insights for resource allocation and strategic decision-making. Theoretical implications are significant as these findings contribute to the existing knowledge on corporate governance by providing empirical evidence of the impact of management governance on company green development. The alignment of managerial incentives with shareholder interests in pursuit of sustainable goals is in line with agency theory. This study highlights the impact of senior management’s influence and decision-making on an organization’s environmental responsibility. It provides insights into the complexities of executive leadership in promoting sustainability within businesses. This aligns with the theory of high-order echelons.

Limitations and Recommendations

This research has valuable insights, but it also has limitations that should be acknowledged. The use of cross-sectional data has limitations in establishing causality. The study establishes associations between variables but does not ascertain the direction of causation. Future research should explore the use of longitudinal data or experimental designs to more effectively examine the temporal connections between corporate greening initiatives, management governance, project performance, and stakeholder management. Additionally, the study’s scope was restricted to certain industries and regions, which may restrict the applicability of the results. Various industries possess distinct characteristics and encounter specific challenges in relation to sustainability practices and governance. Including a wider range of industries and regions in the research would improve the generalizability of the results. Additionally, the study utilised self-reported data obtained through surveys, which could potentially introduce response bias and subjectivity. The utilisation of objective measures or external audits to validate sustainability practices and governance mechanisms has the potential to enhance the credibility and accuracy of future research in this field.

Moreover, the study primarily emphasised quantitative data and did not extensively explore the qualitative dimensions of stakeholder engagement and perception. Qualitative research methods, such as interviews and content analysis of corporate reports and communication, can enhance our understanding of stakeholder perspectives and the efficacy of greening initiatives. Given these constraints, there exist several potential areas for future investigation in this field. Longitudinal studies can examine the evolving impact of corporate greening initiatives on project performance and stakeholder management. This would enhance understanding of the enduring impacts of sustainability practises and governance structures. Furthermore, conducting comparative studies across various industries and regions can offer a more comprehensive understanding of the contextual factors that impact the correlation between sustainability, governance, and outcomes. Various industries encounter distinct sustainability challenges and opportunities, which require customised strategies and governance mechanisms.

Further, employing a mixed-methods approach that integrates quantitative data with qualitative perspectives from stakeholders may provide a more comprehensive comprehension of the intricate dynamics involved. Qualitative research can provide insights into the motivations, perceptions, and experiences of stakeholders in relation to corporate sustainability initiatives. Future research could explore how management governance moderates the relationship between greening initiatives and stakeholder management at a more detailed level. This may entail examining how governance influences corporate sustainability strategies, decision-making processes, and reporting practises. As sustainability becomes increasingly important, further research could investigate the implications of emerging sustainability trends, including the adoption of circular economy practises, the integration of sustainable supply chain management, and the use of innovative technologies in environmental management. It is crucial to comprehend the interaction between these trends, governance mechanisms, and their influence on project performance and stakeholder engagement in order to remain at the forefront of corporate sustainability practises.

6. Conclusion

In summary, this study has offered significant insights into the complex relationship among corporate greening initiatives, management governance, and their combined impact on project performance and

stakeholder management. The results highlight the significance of implementing comprehensive sustainability strategies. Organisations that invest in green building practises, renewable energy adoption, and corporate social responsibility expenditures not only contribute to sustainability but also gain tangible benefits through improved project performance. This is consistent with the resource-based view (RBV) theory, which highlights the conversion of sustainable resources into competitive advantages. Additionally, this study emphasises the crucial role of management governance in moderating these relationships. It underscores the importance for organisations to prioritise governance mechanisms such as independent boards, CEO tenure, and executive compensation alignment with sustainability objectives. Robust governance structures promote responsible decision-making, transparency, and enhanced stakeholder management.

In today's dynamic business environment, where environmental, social, and governance (ESG) factors are gaining significance, this research provides valuable guidance for organisations aiming to succeed in this changing landscape. Companies can improve project performance and stakeholder relationships by making sustainability a strategic priority, implementing comprehensive sustainability practises, and aligning governance structures accordingly. This ultimately positions businesses for long-term sustainability and competitiveness, thereby reinforcing the idea that sustainable business practises are both ethical and economically advantageous. The research emphasises that sustainable success necessitates a holistic approach that combines corporate greening initiatives and effective management governance.

This study emphasises the importance of management governance, including managerial power, reforms, and compensation, in facilitating corporate environmental growth. The empirical findings indicate a statistically significant and positive correlation between management elements, sustainable practises, and organisational performance. These findings highlight the importance of effective management governance principles and provide valuable insights for corporate executives and decision-makers seeking to enhance their environmental performance. The study's implications extend to various areas, including corporate governance, agency theory, and high-order echelon theory, encompassing both theoretical and practical aspects. They emphasise the importance of executive leadership and management practices in shaping an organisation's approach to environmental responsibility and sustainability.

References

Abdi, Y., Li, X., & Càmara-Turull, X. (2022). Exploring the impact of sustainability (ESG) disclosure on firm value and financial performance (FP) in airline industry: the moderating role of size and age. *Environment, Development and Sustainability, 24*(4), 5052-5079. https://doi.org/10.1007/s10668-021-01649-w

Abdullah, N., & Lim, A. (2023). The Incorporating Sustainable and Green IT Practices in Modern IT Service Operations for an Environmentally Conscious Future. *Journal of Sustainable Technologies and Infrastructure Planning, 7*(3), 17-47. https://publications.dlpress.org/index.php/JSTIP/article/view/33

Aguilera, R. V., Aragón-Correa, J. A., Marano, V., & Tashman, P. A. (2021). The Corporate Governance of Environmental Sustainability: A Review and Proposal for More Integrated Research. *Journal of Management, 47*(6), 1468-1497. https://doi.org/10.1177/0149206321991212

Al-Ali, T. Z. (2021). Toward the Micro-Foundations of Environmental Sustainability: Fostering Pro-Environmental Behavior Among Employees to Boost Corporate Environmental Performance in the United Arab Emirates. *Dissertations*, 192. https://scholarworks.uaeu.ac.ae/all_dissertations/192

Alabdullah, T. T. Y. (2023). Capital Market Companies in the Uae: Determinants And Factors Affecting the Performance of Listed Uae Companies. *Cashflow : Current Advanced Research on Sharia Finance And Economic Worldwide, 3*(1), 1-18. https://doi.org/10.55047/cashflow.v3i1.791

Alhammadi, A., Soar, J., Yusaf, T., Ali, B. M., & Kadirgama, K. (2023). Redefining procurement paradigms: A critical review of buyer-supplier dynamics in the global petroleum and natural gas industry. *The Extractive Industries and Society, 16*, 101351. https://doi.org/10.1016/j.exis.2023.101351

Ali Gull, A., Hussain, N., Akbar Khan, S., Nadeem, M., & Mansour Zalata, A. (2023). Walking the talk? A corporate governance perspective on corporate social responsibility decoupling. *British Journal of Management, 34*(4), 2186-2211. https://doi.org/10.1111/1467-8551.12695

Ali, S., Nawaz, T., & Javed, A. (2023). the buffering role of project culture to align impact of project risk management and project quality. *Journal of Social Sciences Development, 2*(2), 225-239. https://doi.org/10.53664/JSSD/02-02-2023-08-225-239

Ansu-Mensah, P., Marfo, E. O., Awuah, L. S., & Amoako, K. O. (2021). Corporate social responsibility and stakeholder engagement in Ghana's mining sector: a case study of Newmont Ahafo mines. *International Journal of Corporate Social Responsibility, 6*(1), 1. https://doi.org/10.1186/s40991-020-00054-2

Baard, V., & Dumay, J. (2020). *Interventionist research in accounting: A methodological approach*. Routledge. https://doi.org/10.4324/9781351262644

Bhatnagar, M., Taneja, S., & Özen, E. (2022). A wave of green start-ups in India—The study of green finance as a support system for sustainable entrepreneurship. *Green Finance, 4*(2), 253-273. https://doi.org/10.3934/GF.2022012

Boakye, D. J., TIngbani, I., Ahinful, G., Damoah, I., & Tauringana, V. (2020). Sustainable environmental practices and financial performance: Evidence from listed small and medium-sized enterprise in the United Kingdom. *Business Strategy and the Environment, 29*(6), 2583-2602. https://doi.org/10.1002/bse.2522

Carroll, A. B., & Brown, J. (2022). *Business & society: Ethics, sustainability & stakeholder management*. Cengage Learning. https://www.cengage.ca/c/business-society-ethics-sustainability-stakeholder-management-10e-carroll-brown-buchholtz/9781305959828

Chahed, Y. (2021). Words and numbers: Financialization and accounting standard setting in the United Kingdom. *Contemporary Accounting Research, 38*(1), 302-337. https://doi.org/10.1111/1911-3846.12614

Chen, Z., Xiao, Y., & Jiang, K. (2023). Corporate green innovation and stock liquidity in China. *Accounting & Finance, 63*, 1381-1415. https://doi.org/10.1111/acfi.13027

Dindi, A. M. (2022). *Influence of Personal Ethics of Construction Project Participants on Project Performance in Kenya* (Doctoral dissertation, JKUAT-SABS). http://ir.jkuat.ac.ke/handle/123456789/5937

Dissanayake, D., Tilt, C. A., & Qian, W. (2021). How do public companies respond to national challenges through sustainability reporting? – The case of Sri Lanka. *Qualitative Research in Accounting & Management, 18*(4/5), 455-483. https://doi.org/10.1108/QRAM-06-2020-0088

El Khatib, M., Alabdooli, K., AlKaabi, A., & Al Harmoodi, S. (2020). Sustainable Project Management: Trends and Alignment. *Theoretical Economics Letters, 10*(06), 1276. https://doi.org/10.4236/tel.2020.106078

Emshoff, J. R., & Freeman, R. E. (2023). Stakeholder Management: A Case Study of the U.S. Brewers Association and the Container Issue. In S. D. Dmytriyev & R. E. Freeman (Eds.), *R. Edward Freeman's Selected Works on Stakeholder Theory and Business Ethics* (pp. 29-59). Springer International Publishing. https://doi.org/10.1007/978-3-031-04564-6_2

Ependi, U., Rochim, A. F., & Wibowo, A. (2023). An Assessment Model for Sustainability City Using Crowdsourced Data Based on General System Theory: A Design Science Methodology Approach. *Smart Cities, 6*, 3032-3059. https://doi.org/10.20944/preprints202309.0349.v1

Farooq, Q., Fu, P., Liu, X., & Hao, Y. (2021). Basics of macro to microlevel corporate social responsibility and advancement in triple bottom line theory. *Corporate Social Responsibility and Environmental Management, 28*(3), 969-979. https://doi.org/10.1002/csr.2069

Ferrarini, G. (2021). Redefining Corporate Purpose: Sustainability as a Game Changer. In D. Busch, G. Ferrarini, & S. Grünewald (Eds.), *Sustainable Finance in Europe: Corporate Governance, Financial Stability and Financial Markets* (pp. 85-150). Springer International Publishing. https://doi.org/10.1007/978-3-030-71834-3_4

Freeman, R. E. (2023). Stakeholder Management: Framework and Philosophy. In S. D. Dmytriyev & R. E. Freeman (Eds.), *R. Edward Freeman's Selected Works on Stakeholder Theory and Business Ethics* (pp. 61-88). Springer International Publishing. https://doi.org/10.1007/978-3-031-04564-6_3

Funduk, M. (2013). Environmental Finance and Development, Sanja Tišma, Ana Maria Boromisa, Ana Pavičić-Kaselj. *Croatian International Relations Review, 19*(68), 170-172. https://hrcak.srce.hr/file/156703

Garde Sánchez, R., Flórez-Parra, J. M., López-Pérez, M. V., & López-Hernández, A. M. (2020). Corporate Governance and Disclosure of Information on Corporate Social Responsibility: An Analysis of the Top 200 Universities in the Shanghai Ranking. *Sustainability, 12*(4), 1549. https://doi.org/10.3390/su12041549

Gazzola, P., Pavione, E., Pezzetti, R., & Grechi, D. (2020). Trends in the Fashion Industry. The Perception of Sustainability and Circular Economy: A Gender/Generation Quantitative Approach. *Sustainability, 12*(7), 2809. https://doi.org/10.3390/su12072809

Gersel, J., & Johnsen, R. (2020). Toward a novel theory of rational managerial deliberation: Stakeholders, ethical values, and corporate governance. *Academy of Management Learning & Education, 19*(3), 269-288. https://doi.org/10.5465/amle.2019.0198

Hügel, S., & Davies, A. R. (2020). Public participation, engagement, and climate change adaptation: A review of the research literature. *Wiley Interdisciplinary Reviews: Climate Change, 11*(4), e645. https://doi.org/10.1002/wcc.645

Junchi, M. (2017). The challenge of different perceptions on the Belt and Road Initiative. *Croatian International Relations Review, 23*(78), 149-168. https://doi.org/10.1515/cirr-2017-0011

Kanadlı, S. B., Alawadi, A., Kakabadse, N., & Zhang, P. (2022). Do independent boards pay attention to corporate sustainability? Gender diversity can make a difference. *Corporate Governance: The International Journal of Business in Society, 22*(7), 1390-1404. https://doi.org/10.1108/CG-09-2021-0352

Lichtenthaler, U. (2021). Digitainability: The combined effects of the megatrends digitalization and sustainability. *Journal of Innovation Management, 9*(2), 64-80. https://doi.org/10.24840/2183-0606_009.002_0006

Mahoney, J. T. (2023). Corporate personhood and fiduciary duties as critical constructs in developing stakeholder management theory and corporate purpose. *Strategy Science, 8*(2), 212-220. https://doi.org/10.1287/stsc.2023.0191

Meintjes, C. (2021). The authentic corporate citizen: The role of relational transparency and stakeholder relationship cultivation strategies. *Management Dynamics: Journal of the Southern African Institute for Management Scientists, 30*(3), 1-17. https://hdl.handle.net/10520/ejc-mandyn_v30_n3_a1

Ozkan-Ozen, Y. D., Kazancoglu, Y., & Kumar Mangla, S. (2020). Synchronized Barriers For Circular Supply Chains In Industry 3.5/Industry 4.0 Transition For Sustainable Resource Management. *Resources, Conservation and Recycling, 161*, 104986. https://doi.org/10.1016/j.resconrec.2020.104986

Pavičić-Kaselj, A. (2007). Environmental Financing in the Republic of Croatia-What are the Options? *Croatian International Relations Review, 13*(46/47), 19-28. https://hrcak.srce.hr/24505

Pizzi, S., Corbo, L., & Caputo, A. (2021). Fintech and SMEs sustainable business models: Reflections and considerations for a circular economy. *Journal of Cleaner Production, 281*, 125217. https://doi.org/10.1016/j.jclepro.2020.125217

Pouresmaieli, M., Ataei, M., Nouri Qarahasanlou, A., & Barabadi, A. (2023). Integration of renewable energy and sustainable development with strategic planning in the mining industry. *Results in Engineering, 20*, 101412. https://doi.org/10.1016/j.rineng.2023.101412

Ratcliffe, J., & Stubbs, M. (2023). *Urban Planning and Real Estate Transformations for the Future: A Built Environment Bricolage*. Routledge. https://doi.org/10.4324/9781003356202

Raza, A., Farrukh, M., Iqbal, M. K., Farhan, M., & Wu, Y. (2021). Corporate social responsibility and employees' voluntary pro-environmental behavior: The role of organizational pride and employee engagement. *Corporate Social Responsibility and Environmental Management, 28*(3), 1104-1116. https://doi.org/10.1002/csr.2109

Rossi, J., Bianchini, A., & Guarnieri, P. (2020). Circular Economy Model Enhanced by Intelligent Assets from Industry 4.0: The Proposition of an Innovative Tool to Analyze Case Studies. *Sustainability, 12*(17), 7147. https://doi.org/10.3390/su12177147

Sagheer, O., Umer, M., & Aslam, S. (2022). The Effect of Corporate Social Responsibility (CSR) on Employees' Performance (EP): A Mediating Role of Organization Commitment (OC) in the Multinationals Companies (MNCs) of Pakistan. *NUML International Journal of Business & Management, 17*(1), 1-19. https://doi.org/10.52015/nijbm.v17i1.97

Sama, L. M., Stefanidis, A., & Casselman, R. M. (2022). Rethinking corporate governance in the digital economy: The role of stewardship. *Business Horizons, 65*(5), 535-546. https://doi.org/10.1016/j.bushor.2021.08.001

Schultz, M. D., & Seele, P. (2023). Towards AI ethics' institutionalization: knowledge bridges from business ethics to advance organizational AI ethics. *AI and Ethics, 3*(1), 99-111. https://doi.org/10.1007/s43681-022-00150-y

Shrivastava, P., Smith, M. S., O'Brien, K., & Zsolnai, L. (2020). Transforming sustainability science to generate positive social and environmental change globally. *One Earth, 2*(4), 329-340. https://doi.org/10.1016/j.oneear.2020.04.010

Sjåfjell, B. (2023). Sustainability and Law and Economics: An Interdisciplinary Redefinition of Agency Theory. In B. Sjåfjell, R. Russell, & M. Van der Velden (Eds.), *Interdisciplinary Research for Sustainable Business: Perspectives of Women Business Scholars* (pp. 81-109). Springer International Publishing. https://doi.org/10.1007/978-3-031-06924-6_5

Susila, I., Dean, D., Harismah, K., Priyono, K. D., Setyawan, A. A., & Maulana, H. (2023). Does interconnectivity matter? An integration model of agro-tourism development. *Asia Pacific Management Review.* https://doi.org/10.1016/j.apmrv.2023.08.003

Van der Wal, Z. (2020). Being a public manager in times of crisis: The art of managing stakeholders, political masters, and collaborative networks. *Public Administration Review, 80*(5), 759-764. https://doi.org/10.1111/puar.13245

Vidmar, D., Marolt, M., & Pucihar, A. (2021). Information Technology for Business Sustainability: A Literature Review with Automated Content Analysis. *Sustainability, 13*(3), 1192. https://doi.org/10.3390/su13031192

Waheed, A., & Zhang, Q. (2022). Effect of CSR and Ethical Practices on Sustainable Competitive Performance: A Case of Emerging Markets from Stakeholder Theory Perspective. *Journal of Business Ethics, 175*(4), 837-855. https://doi.org/10.1007/s10551-020-04679-y

Xie, Y., Zhao, Y., Chen, Y., & Allen, C. (2022). Green construction supply chain management: Integrating governmental intervention and public–private partnerships through ecological modernisation. *Journal of Cleaner Production, 331*, 129986. https://doi.org/10.1016/j.jclepro.2021.129986

Yin, X., Wei, X., Irfan, M., & Yasin, S. (2023). Revitalizing Organizational Efficiency: Unpacking the Relationship between CEO Turnover, Research and Development, and Pay-Performance Sensitivities in the Financial Sector of Pakistan. *Sustainability, 15*(13), 10578. https://doi.org/10.3390/su151310578

Zhu, Y., Zhang, H., Siddik, A. B., Zheng, Y., & Sobhani, F. A. (2023). Understanding Corporate Green Competitive Advantage through Green Technology Adoption and Green Dynamic Capabilities: Does Green Product Innovation Matter? *Systems, 11*(9), 461. https://doi.org/10.3390/systems11090461

Zou, F., Huang, L., Ghaemi Asl, M., Delnavaz, M., & Tiwari, S. (2023). Natural resources and green economic recovery in responsible investments: Role of ESG in context of Islamic sustainable investments. *Resources Policy, 86*, 104195. https://doi.org/10.1016/j.resourpol.2023.104195

Zuokui, L. (2017). China-CEEC Cooperation: China's Building of a New Type of International Relations. *Croatian International Relations Review, 23*(78), 19-34. https://doi.org/10.1515/cirr-2017-0005