

Linking Green Transformational Leadership to Environmental Performance: A Mediation–Moderation Study of Pakistan’s Banking Industry

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Abstract

The influence of GTL on environmental performance is inspected in this research of the banking sector, drawing on data from Bank Alfalah and Bank Al Habib. This research examines the role of (i) green corporate social responsibility (CSR), and (ii) green human resource management (HRM) activities, such as green capability, incentives, and opportunities, as mediators, as well as the influence of environmental attitudes as moderators. A quantitative, deductive methodology was considered, and data endorsement was done through online and also by physical surveys from 234 senior and executive-level individuals in Lahore and Islamabad. Smart-PLS was employed to analyze the data. It was declared in the results that GTL significantly enhances EP, with green CSR and green HRM practices acting as advantageous mediators. Furthermore, environmental views strengthen the relationship between GTL and EP. These findings underscore the significance of leadership and human resource management (HRM) approaches in attaining sustained organizational performance. They provide banking industry management with pragmatic strategies to integrate environmental sustainability into their operations.

Keywords: Green practices, Sustainability, NRBV, Green HRM, Green CSR, Environmental Beliefs, Environmental Performance, Green Transformational Leadership, and Banks.

Introduction

The aspect of sustainable development and environmental conservation has gained much attention in the global platform hence causing a high emphasis on environmental leaders in all organizations. Ideally, the new leadership model that has been developed is known as green transformational leadership (GTL), focusing on the decentralization of sustainability in the organizational setting. It makes them change their behavior in the workplace to sustainable practices, as aimed at under the leadership of global environmental norms (Alrowwad et al., 2017). On the way how environmental issues meet financial and business solutions in the field of the financial industry GTL can take on a rather catalytic role in defining the impact of financial institutions on the environment.

The banking sector across the globe and especially the developing countries such as Pakistan raising pressure for proving the sustainability towards environmental concerns (Nguyen et al., 2024) Two premier banks of Pakistan include Bank Alfalah and Habib Bank Limited, have recently started incorporating green practices into their management plans. Such practices include green financing, reduction of carbon footprints, and environmental sustainability. However, the effectiveness of these endeavors is usually predicated on leadership practices, and the impact that these have on the organizational culture and the staff.

It is important to note that Environmental performance is a serious consideration in the measurement of an organization's green activities. Energy efficiency consumption, waste minimization, carbon footprint control, and compliance with environmental laws are some examples of EESM (Nguyen et al., 2024). But for the banking sector, environmental performance goes a notch higher than just practicing environmentally friendly operations, to also include part funding of environmentally friendly projects as well as the incorporation of green policies. Hence, high EE is not only a policy issue but also an organizational culture change, which GTL can bring, according to (Zhao & Huang, 2022).

With more distance given to Corporate Social Responsibility (CSR) in the past, stakeholders have had a strong influence in pushing executive sustainability. Recently, Green CSR or segments of CSR are getting more attention where companies undertake certain activities in resource conservation, mitigating pollution, green charity and other aspects (Bukhari et al., 2021). Green CSR can be understood as a middle tier connecting strategic management with environmental outcomes to increase organizational legitimacy and sustainability. To banks, the adoption of Green CSR is not merely a virtue but a competitive weapon in a cut-throat environment (Chen & Chang, 2013).

Environmental belief or self-generated attitudes towards the environment, referring to the individual's own belief that the environment must be protected, affects individual and organizational behaviors. In general, when the employees and the leaders have a positive environmental attitude, they are more inclined to do what is stipulated in the goals of environmental sustainability (Nguyen et al., 2024). This alignment can enhance the efficacy of GTL in enhancing the environmental performance by promoting cohesiveness. Besides, environmental belief is a psychological facilitator that encourages someone to participate in a green endeavor.

Green HRM practices are central responsibilities of each HRM department to ensure the smooth cycle of working speed for sustainability. Green HRM practices are considered a crucial tool to instill green consciousness and concern among employees, which shapes their green attitudes and behaviors. Such behaviors are very dear to organizations that are in the effort to score high organizational environmental performance (AlKetbi, 2024 #904). In literature, scholars have argued an innovative concept associated with green HRM practices by saying that green HRM practices serve as an accelerator for corporate green culture that in turn increases employees' motivation, skills and opportunities to participate in the environmental performance (Ali et al., 2024). The mentioned three quality drivers under green HRM are derived from the Ability-Motivation-Opportunity AMO model.

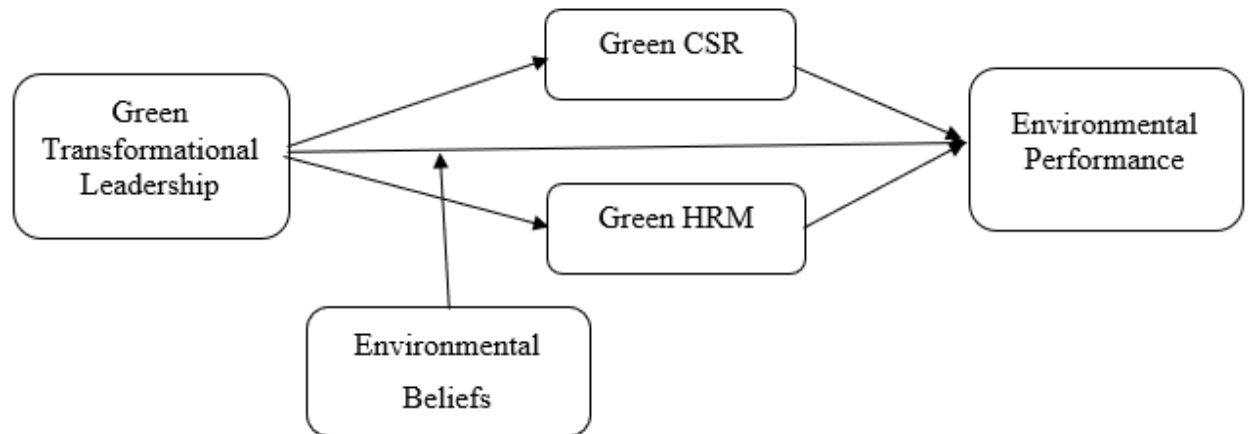
Literature Review

Theoretical Background

The present study is built on the premises of the Natural Resource-Based View (NRBV) theory of Hart (1995). This theory is based on the prevention of pollution, product stewardship, and sustainable development (Hart, 1995). Researchers have pointed out that this theory can help reduce pollution, manage products, and boost sustainable development policies in organizations (A. Farrukh et al., 2022). This theory is concerned with how organizations may attain a competitive advantage by fostering such resources, which promote sustainable development. Similarly, factors like GTL and Green CSR have the potential to foster sustainable development in the banking sector. This would act as a motivating factor for the banks to invest in GTL and Green CSR (Singh et al., 2020).

Similarly, the study has framed the environmental beliefs as the moderator, which is the most significant and core element every person needs, reflecting the most valuable resource for an organization in the current era of sustainable performance challenges. Here, the NRBV theory serves as a base ground that if managers and employees have this worthy asset of environmental beliefs, the organization has a high chance of making a massive transformation in its environmental performance indicator. Thus, identifying all these synergies and prominent intersections between the core idea of NRBV and the key constructs of the study, the NRBV theory was selected as a suitable and fine underpinning theoretical framework to support the conceptual idea for the present study.

Figure 2.1 shows the conceptual framework of the present study.



Hypothesis Development

Green Transformational Leadership and Environmental Performance

Green Transformational Leadership (GTL) adapts classic transformational leadership to the environmental domain: leaders articulate an eco-centric vision, role-model sustainable behaviours, and motivate employees to adopt pro-environmental practices (i.e., inspiring intrinsic green motives and supporting green initiatives) (Janjua et al., 2024). Empirical and theoretical studies build on this idea by linking GTL to employees' green self-efficacy, green mindfulness, and green behaviours mechanisms through which leaders can influence firm-level environmental outcomes (Le, 2020; Niazi et al., 2023). Foundational and recent reviews and empirical papers consistently define GTL as a leadership pattern that fosters environmental awareness and capability across organizational levels, thereby providing the theoretical basis for expecting improved environmental performance under strong GTL (Miao & Cao, 2019; Niazi et al., 2023).

A growing body of empirical research reports positive associations between GTL (or eco-transformational leadership) and organizational environmental outcomes. Studies across contexts manufacturing, SMEs, chemical and pharmaceutical firms, and service sectors find GTL positively related to green innovation, green employee behaviours, and indicators of environmental performance (Pham et al., 2019; Tosun et al., 2022). empirical work in manufacturing and service firms shows GTL fosters green innovation and green practices that translate into superior environmental metrics (Sobaih, Hasanein, et al., 2022). At the same time, several rigorous recent studies indicate that GTL's effect on environmental performance is often partially or fully mediated by organizational practices such as green human resource management, green innovation, green climate, or green CSR suggesting GTL frequently operates through institutionalized routines and employee capabilities rather than solely via direct leader action (Robertson & Carleton, 2018; Sobaih, Hasanein, et al., 2022).

Therefore, the following hypothesis might be expressed:

H1: Green transformational leadership has a significant influence on the environmental performance.

Mediating Role of Green CSR

Majeed et al. (2023) define Green Transformational Leadership leaders who articulate a clear pro-environmental vision, role-model sustainable behaviour, empower employees to pursue eco-goals, and intellectually stimulate green problem-solving has been increasingly linked to improved organizational environmental outcomes. Suganthi (2020) found Empirical studies across sectors (manufacturing, chemical, pharmaceuticals, services) show that GTL fosters employee green behaviours, green self-efficacy, and green training uptake, which in turn contribute to operational improvements such as reduced waste, energy savings, and better regulatory compliance (Broccardo et al., 2023). Several recent papers also find that GTL's direct effect on firm-level environmental performance can be modest or become non-significant once internal organizational practices are accounted for, suggesting that GTL often operates by shaping organizational processes and employee capabilities rather than producing large direct effects alone (Chatterjee et al., 2022; Malik et al., 2021).

Anser et al. (2020) Green CSR is an organizational strategy and set of outward-facing practices that embed environmental responsibility into stakeholder engagement, supply-chain choices, and public commitments. The CSR → environmental performance literature indicates that CSR often improves environmental outcomes indirectly by prompting green innovation, clearer environmental strategy, and investments in capability rather than via CSR statements alone. Kraus et al. (2020) identified a robust and positive correlation between corporate social responsibility (CSR) and entrepreneurial performance (EP). Niazi et al. (2023) have significantly contributed to Building on these findings, theoretical and empirical work proposes and tests Green CSR as a key mechanism through which GTL translates leadership vision into firm-level environmental performance: transformational leaders stimulate and legitimize CSR investments (e.g., eco-processes, stakeholder programs, green reporting), and those CSR activities then generate innovation, stakeholder pressure alignment, and resource allocation that improve environmental metrics. Recent studies explicitly modeling mediation report significant indirect effects of GTL → Green CSR → Environmental Performance, supporting the proposition that Green CSR mediates the leadership–performance link and motivating a mediation hypothesis for empirical testing Therefore, the following theory is proposed:

H2: Green CSR significantly mediates the relationship between green transformational leadership and environmental performance.

Mediating Role of Green HRM

Green Transformational Leadership (GTL) leadership that articulates a clear pro-environmental vision, models eco-friendly behaviour, intellectually stimulates employees to solve environmental problems, and empowers followers to pursue sustainability goals has been increasingly theorized and shown to be an important

antecedent of firm-level environmental outcomes (Ercantan & Eyupoglu, 2022; Opatha & Arulrajah, 2014). Several recent empirical studies report that GTL promotes employees' green awareness, green self-efficacy, and engagement in pro-environmental behaviours, which are mechanisms by which leadership can influence operational environmental metrics such as energy use, waste reduction, and regulatory compliance (Masri & Jaaron, 2017; Niazi et al., 2023). Prior research has demonstrated that GTL produced significant indirect effects on environmental performance via employee empowerment and green training, indicating leadership's influence is often channelled through employee capabilities and behaviours rather than producing large direct effects alone (Ruggerio, 2021).

Green Human Resource Management (Green HRM) comprises HR practices (green recruitment, green training and development, performance management tied to environmental goals, green rewards/compensation, and employee involvement in sustainability) designed to build employees' ability, motivation, and opportunity for pro-environmental action (Niazi et al., 2023; Rawashdeh, 2018). A growing evidence base links Green HRM directly to improved environmental performance because these practices institutionalize environmental priorities, build green skills, and align incentives with eco-outcomes (Awan et al., 2023). Green HRM therefore functions both as an internal capability and as the mechanism that translates individual-level green behaviours into measurable organisational environmental gains. Informed by these insights, the subsequent proposals are proposed:

H3(a): Green HRM practices, as green ability, have a significant positive mediating role between GTL and environmental performance.

H3(b): Green HRM practices, as green motivation, plays significant mediating role between green transformational leadership and environmental performance.

H3(c): GHRM practices of green opportunity cast positive mediating influence on the relationship between green transformational leadership and environmental performance.

Environmental Belief's Moderating Role

Green Transformational Leadership adapts classic transformational leadership behaviors vision articulation, role modelling, intellectual stimulation, and individualized consideration to the environmental domain, motivating employees and shaping organizational priorities toward sustainability (Zhu et al., 2021). GTL has been theorized to influence firm-level environmental outcomes by fostering a pro-environmental climate, encouraging green problem-solving, and legitimizing investments in green routines and resources (e.g., training, green policies). Empirical work supports these claims: multiple studies report that GTL or environmentally-specific transformational leadership is positively associated with employee green behaviours, green innovation, and downstream environmental outcomes (energy efficiency, waste reductions, compliance), although the magnitude of direct effects often depends on intervening mechanisms (Kim et al., 2020).

A closer reading of recent empirical studies reveals that GTL frequently operates indirectly by creating the conditions for organizational practices and resources that produce measurable environmental gains (Raineri & Paillé, 2016). Luu (2019) contends that GTL had an insignificant direct effect on environmental performance once green empowerment, self-efficacy, and green training were included, but a strong indirect effect through those mediators, which indicates leadership functions by mobilizing employee capabilities and organisational investments rather than singlehandedly producing technical improvements. Moreover, Boiral et al. (2018) established that sectoral and cross-industry studies (manufacturing, chemical, services) show GTL's positive association with outcome measures is often contingent on institutionalization via HRM, CSR, or innovation practices that translate vision into action. These findings suggest researchers should expect a positive GTL → EP relationship but also test conditional and mediated pathways to explain how leadership translates into environmental performance

H4: Environmental beliefs have a positive moderating role in strengthening the impact of green transformational leadership on environmental performance.

Research Gap

Despite the growing body of research linking Green Transformational Leadership (GTL) to environmental outcomes, important gaps remain. Existing studies largely confirm that GTL can foster employee green behaviours and organizational environmental performance, yet many focus on direct effects or mediating mechanisms such as green HRM or green CSR while paying limited attention to individual-level boundary conditions. In particular, the moderating role of Environmental Beliefs has been underexplored, even though value–belief–norm theory suggests that employees' ecological convictions critically shape their responsiveness to leadership cues. Few empirical investigations have tested whether the strength of employees' environmental beliefs amplifies or constrains the impact of GTL on firm-level environmental performance, especially in developing-country contexts and resource-intensive industries where environmental challenges are acute. This gap highlights the need for studies that examine Environmental Beliefs as a moderator to clarify when and for whom GTL most effectively drives sustainable environmental outcomes.

Methodology

This study utilizes a positivist perspective and a deductive research methodology to assess hypotheses derived from the Natural Resource-Based View (NRBV). Single-method survey, which is a quantitative study, was executed to examine the interconnections between Green Transformational Leadership (GTL), GCSR, GHRM, Environmental Beliefs (EB), and Environmental Performance (EP). This study is explanatory, focusing on clarifying causal relationships among the constructs through hypothesis testing. A cross-sectional time frame was employed, with data collected in a single phase from individuals in the banking sector.

Population, Sampling, and Data Collection

The intended audience comprised mid- to senior-level professionals from designated branches of Bank Alfalah and HBL in Islamabad and Lahore, anticipated to possess knowledge of leadership strategies, CSR activities, and environmental programs. Purposive sampling was employed to ensure representation across functional domains and hierarchical levels. The surveys were distributed electronically and in print to gather data. Participation was optional, and confidentiality and anonymity were assured. We received a minimum of 234 valid responses, which satisfied the statistical criteria for model testing in accordance with PLS-SEM.

Research Instrument

The survey tool was created utilizing recognized and validated metrics from previous research. The questionnaire comprised three sections: (1) an introduction with study description and permission information, (2) demographic inquiries, and (3) measuring items for each construct. All terms are restrained on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). Due to the dependence on previously established scales, further pilot testing was considered redundant.

Data Analysis

Respondents Demographical Data

The demographic profile of the respondents (N = 234) shows that most of them were women (71.4%), while only 28.6% were men. 58.1% of the people had a bachelor's degree, 32.1% had an M.Phil. or higher degree, and 9.8% said they had additional qualifications. Of those who answered, 34.2% were mid-level employees, 31.6% were executives, 17.5% were senior-level staff, and 16.7% were entry-level employees. 46.6% of the people had between 5 and 10 years of work experience, 35% had less than one year, 12.4% had 1 to 5 years, and only 6% had more than 10 years.

Table 4.1 Reliability and Convergent Validity Assessment

Latent Constructs	Cronbach's alpha	Composite reliability	Average variance extracted
Environmental Beliefs	0.925	0.943	0.767
Environmental Performance	0.823	0.876	0.586
Green Ability	0.907	0.935	0.784
Green CSR	0.860	0.914	0.781
Green Opportunity	0.863	0.916	0.785
Green Transformational Leadership	0.902	0.927	0.719
Green Motivation	0.829	0.887	0.662

Convergent validity is the third step in the outer reflective model assessment, and it's one of the dimensions of construct validity. Convergent validity “implies that a

construct includes more than 50% of the indicator's variance and is being evaluated using the AVE statistic" (Hair Jr et al., 2021). The AVE statistic has a standard cut-off limit of 0.5 to surpass the convergent validity establishment in the constructs and latent indicators (Piedmont, 2024). In the CFA analysis, the results reported that all constructs have high AVE values and denoted the idea that convergent validity has been established in the constructs.

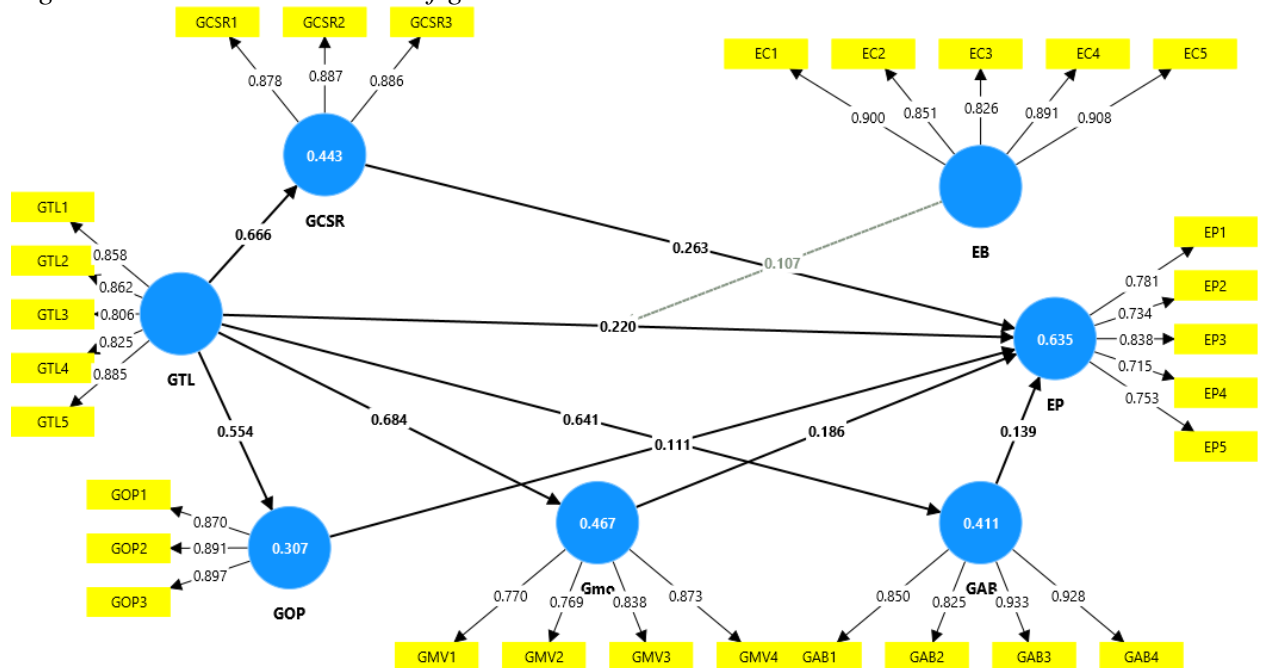
Discriminant Validity Analysis

The evaluation of discriminant validity of the constructs using the HTMT criterion, and the findings (Table 4.2) indicated that all HTMT values fell below the suggested thresholds of 0.85 (Kline, 2011) and 0.90 (Henseler et al., 2015). This signifies that each construct is empirically separate from the others and thus multicollinearity issues are negligible. The findings demonstrate robust evidence that the measurement model attained discriminant validity, validating the constructs' suitability for subsequent structural model evaluation.

Table 4.2 HTMT analysis for discriminant validity

Latent Constructs	1	2	3	4	5	6	7
Environmental Beliefs							
Environmental Performance	0.286						
Green Ability	0.136	0.696					
Green CSR	0.220	0.812	0.692				
Green Opportunity	0.310	0.660	0.493	0.677			
Green Transformational Leadership	0.376	0.816	0.707	0.749	0.622		
Green Motivation	0.272	0.776	0.677	0.715	0.545	0.786	

Figure 4.1. Measurement model figure



Hypothesis Testing

The advanced structural equation modeling (SEM) technique was incorporated into Smart-PLS for hypothesis testing. The relationships were evaluated at a significance level of 0.05 to determine their impact on the environment. Figure 4.1 presents the graphical results of the SEM study, while Table 4.2 displays the findings of the route analysis. This study's results indicated that green transformational leadership significantly positively influenced environmental performance, with $B=0.221$ and $p=0.003<0.05$. The following test results demonstrate the effect of the interaction term, particularly moderation. The findings demonstrated a significant moderating effect of environmental perspectives in amplifying the influence of green transformational leadership on environmental performance ($B = .107$, $p = 0.007 < 0.05$). In Smart-PLS, the simple slope analysis demonstrates the moderating effect distinctly. This study demonstrates that the convergence of the slopes and the positive green line effect at +standard deviation produces a steeper line with a substantial beneficial impact. This suggests that when environmental sentiments increase, the influence of GTL on EP becomes more significant. Figure 4.1 depicts the simple slope plot of environmental belief serving as the moderator in the study.

Table 4.3 Direct and external effects

Estimated Paths	Beta	St.D	t-value	P values	Decision
Green Transformational Leadership → Environmental Performance	0.221	0.074	2.998	0.003	Yes

Environmental Beliefs X Green Transformational Leadership → Environmental Performance	0.107	0.039	2.718	0.007	Yes
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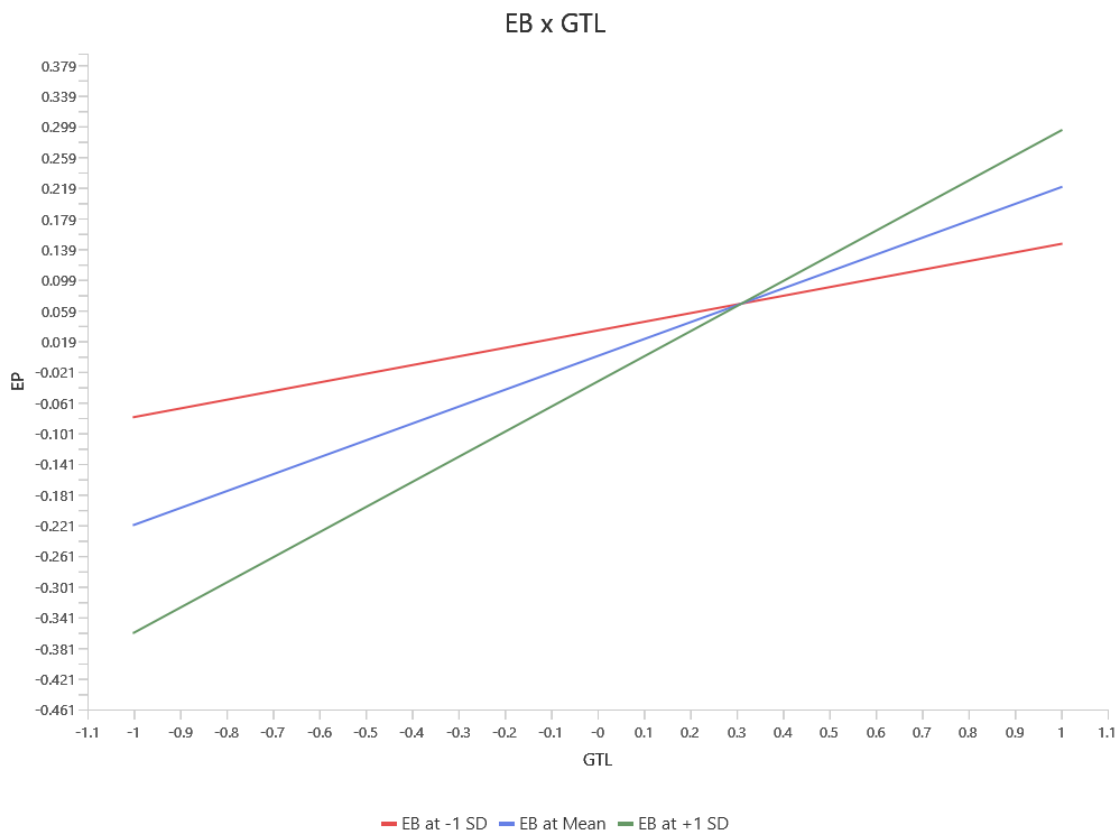


Figure 4.2 Simple slope analysis for the moderation of environmental beliefs

The particular indirect effects in the PLS-SEM study enabled the mediation influences of green CSR and green HRM practices. The table below delineates the mediating effects, demonstrating that all indirect effects yielded meaningful results. Green CSR exerted a substantial mediation effect on the connection between GTL and EP. Likewise, the green HRM performs practices of green ability, green opportunity, and green motivation demonstrated substantial mediating impacts.

Table 4.4. Indirect Effect Testing (Mediation effects)

Estimated Paths	Beta	St.D	t-value	P values	Accepted
Green Transformational Leadership → Green Opportunity → Environmental Performance	0.061	0.029	2.805	0.038	Yes
Green Transformational Leadership → Green CSR → Environmental	0.175	0.053	3.282	0.001	Yes

Performance

Green Transformational Leadership →

Green Ability → Environmental Performance 0.089 0.044 1.996 0.046 Yes

Green Transformational Leadership →

Green Motivation → Environmental Performance 0.126 0.049 2.573 0.010 Yes

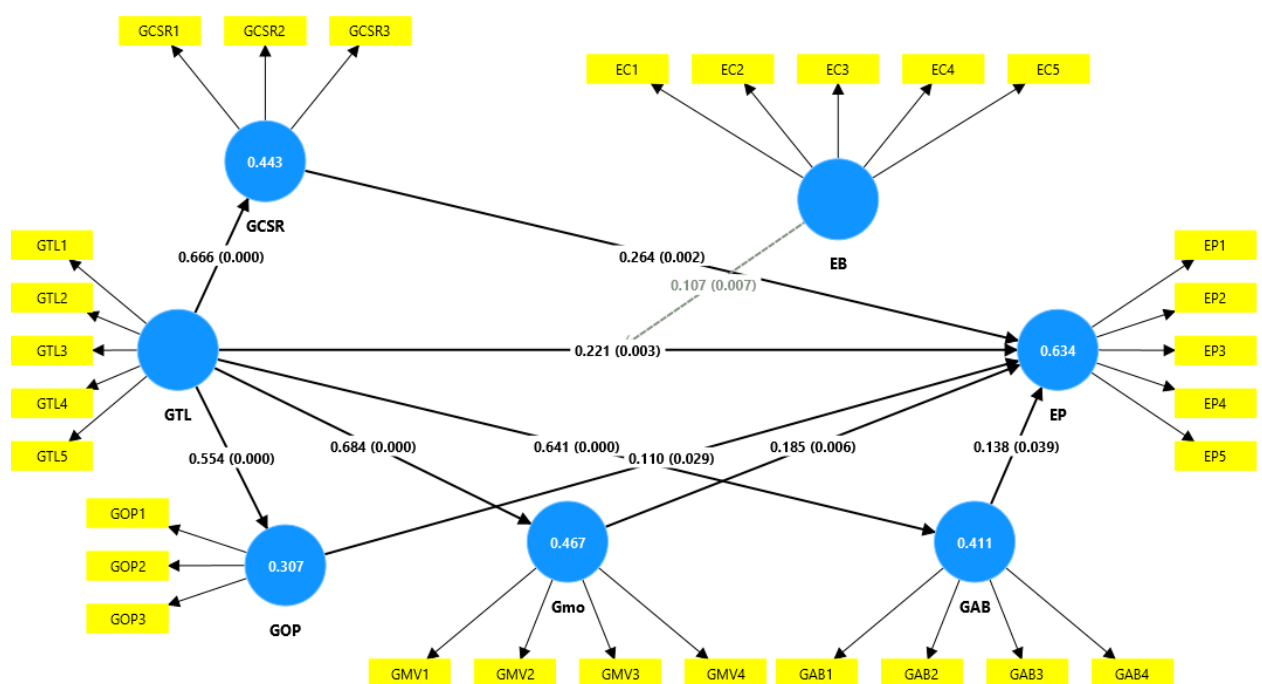


Figure 4.3 Structural model graphical view

Conclusion

In conclusion, this study demonstrates that Green Transformational Leadership (GTL) is a critical driver of sustainable outcomes by directly improving environmental performance and fostering organizational mechanisms that strengthen this effect. The results reveal that GTL not only motivates employees through vision, support, and role modeling but also stimulates Green CSR initiatives and Green HRM practices, which act as key pathways for translating leadership influence into tangible environmental gains. Moreover, the moderating role of Environmental Beliefs highlights that leaders and managers with strong ecological values can significantly amplify the positive impact of GTL, offering a nuanced understanding of when leadership is most effective. By validating these relationships in Pakistan's banking sector, the study enriches the Natural Resource-Based View (NRBV) and provides actionable insights for organizations seeking to embed sustainability into their leadership, CSR, and HRM strategies. These findings emphasize that cultivating

green leadership, institutionalizing CSR and HRM practices, and strengthening environmental values among managers are essential steps toward achieving enduring environmental performance in emerging economies.

Summary of the Research

By taking the green initiatives and green practices of Bank Alfalah and Bank AL Habib, this study specifically designed its aims to investigate the intricate intersection between green transformational leadership and environmental performance. Moreover, assessed the mediating impacts of green CSR and green HRM practices, and the moderation of environmental beliefs to further steel the connection between green transformational leadership and environmental performance To empirically test the designed aims, this study was a quantitative strategy that followed the deductive approach. The main source of data was a questionnaire, which was disseminated using online and physical mediums to the senior, executive and other higher-level subordinates of the selected banks. The data collection was performed in the two main cities, i.e., Lahore and Islamabad. After getting 234 valid responses, the assembled responses were assessed using the advanced features of Smart-PLS. The results found that green transformational leadership significantly influences the environmental performance. Moreover, the specific indirect effects also showed that green CSR and green HRM practices, including green ability, green motivation and green opportunity, exhibit a significant positive catalytic role between the main direct path. Similarly, the simple slope plot graphically illustrated that environmental beliefs with a +standard deviation cast a significant influence on the relationship between GTL and EP. With these findings, the study has illuminated the successful leadership and organizational HRM practices of the selected banks for anchoring a strong environmental performance rank.

Practical Implications

The study emphasized the importance of environmental beliefs. Those organizations and their higher authorities must have high environmental beliefs that they must conserve and safeguard the natural resources, and be more eager to participate in and integrate green initiatives to boost their environmental performance. In the last, this study has extended the practical knowledge about the significance of green CSR for increasing environmental performance. CSR is directly associated with organizational responsibilities for social prosperity, and banking sector organizations must focus on good CSR so that their overall environmental and sustainability performance may increase.

Future Suggestions and Limits

Future researchers can extend the geographical context of this study by investigating the tested empirical model in developed countries to present a comparison regarding the organizational structure effectiveness, including the leadership styles and the green HRM practices of developed countries in achieving sustainable performance.

References

- Ahmad, S., Ahmad, A., Shair, W., & Bhatti, M. A. A. (2022). Unlocking Pakistan's Youth Potential: A Comprehensive Analysis of Youth Development Indices and Strategic Alignment with the UN Sustainable Development Goals. *Journal of Professional Research in Social Sciences*, 9(2), 80-95.
- Al-Hakimi, M. A., Zaid, M. A., Khan, M. F., Saleh, M. H., Sharma, D., Verma, R., & Hasan, M. B. (2024). How and when does green transformational leadership affect environmental performance? *International Journal of Business Environment*, 15(2), 170-192.
- Ahmad, S., Bhatti, M. A. A., & Imam, M. A. (2023). Balancing Control and Collaboration: Project Manager Accountability in Multi-Layered Governance Systems. *Journal of Professional Research in Social Sciences*, 10(2), 134-155.
- Ali, M., Shujahat, M., Fatima, N., Lopes de Sousa Jabbour, A. B., Vo-Thanh, T., Salam, M. A., & Latan, H. (2024). Green HRM practices and corporate sustainability performance. *Management Decision*, 62(11), 3681-3703.
- Ahmad, S., Qamar, A. J., Bhatti, M. A. A., & Bashir, U. (2023). Integrating Islamic Ethics with Modern Governance: A Comprehensive Framework for Accountability Across Religious, Social, and Economic Dimensions. *Al-Irfan*, 8(15), 51-79.
- Akbar, A., Ahmad, S., Ali, M., Fayyaz, M. T., Ali, I., & Bhatti, M. A. A. (2024). Employee Development and Training: How HRM Helps in Staying Competitive in the Changing Market Condition. *Al-Qanṭara*.
- Anser, M. K., Yousaf, Z., Majid, A., & Yasir, M. (2020). Does corporate social responsibility commitment and participation predict environmental and social performance? *Corporate Social Responsibility and Environmental Management*, 27(6), 2578-2587.
<https://doi.org/https://doi.org/10.1002/csr.1977>
- Akbar, A., Ahmad, S., Khalid, M., Aslam, M. F., & Bhatti, M. A. A. (2024). Analyzing the Effect of Green HRM on Organizational Performance. *Bulletin of Business and Economics (BBE)*, 13(2), 864-869.
- Anwar, N., Mahmood, N. H. N., Yusliza, M. Y., Ramayah, T., Faezah, J. N., & Khalid, W. (2020). Green Human Resource Management for organisational citizenship behaviour towards the environment and environmental performance on a university campus. *Journal of Cleaner Production*, 256, 120401.
- Akbar, A., Ahmad, S., Nadim, M., Bhatti, M. A. A., & Khan, H. (2024). Affect of HRM on Employee Motivation Towards Green Creativity and Initiatives. *Center for Management Science Research*, 2(3), 197-216.
- Alharahsheh, H. H., & Pius, A. (2020). A review of key paradigms: Positivism VS interpretivism. *Global academic journal of humanities and social sciences*, 2(3), 39-43. <https://doi.org/10.36348/gajhss.2020.v02i03.001>
- Ali, M. (2025). *ECONOMIC IMPACTS OF THE LAHORE*
- Bakker, A. B., Hetland, J., Olsen, O. K., & Espevik, R. (2023). Daily transformational leadership: A source of inspiration for follower performance? *European*

- management journal*, 41(5), 700-708.
<https://doi.org/https://doi.org/10.1016/j.emj.2022.04.004>
- Barrett, D., & Younas, A. (2024). Induction, deduction and abduction. *Evidence-Based Nursing*, 27(1), 6-7. <https://doi.org/10.1136/ebnurs-2023-103873>
- Bhatti, M. A. A., & Nazir, M. U. (2024). The Impact of Project Process Management on Sustainable Project Success in the Construction Sector: The Moderating Role of Risk Management Practices. *Bulletin of Business and Economics (BBE)*, 13(2), 1065-1072.
- Boiral, O., Raineri, N., & Talbot, D. (2018). Managers' citizenship behaviors for the environment: A developmental perspective. *Journal of Business Ethics*, 149, 395-409. <https://doi.org/https://doi.org/10.1007/s10551-016-3098-6>
- Cahyadi, A., Natalisa, D., Poór, J., Perizade, B., & Szabó, K. (2022). Predicting the relationship between green transformational leadership, green human resource management practices, and employees' green behavior. *Administrative Sciences*, 13(1), 5.
- Chen, Y.-S., & Chang, C.-H. (2013). The determinants of green product development performance: Green dynamic capabilities, green transformational leadership, and green creativity. *Journal of business ethics*, 116, 107-119.
- Creswell, J. W. (2009). *RESEARCH DESIGN Qualitative, Quantitative and Mixed Methods Approaches* (third ed.). SAGE.
- Deng, C., Gulseren, D., Isola, C., Grocutt, K., & Turner, N. (2023). Transformational leadership effectiveness: an evidence-based primer. *Human Resource Development International*, 26(5), 627-641.
<https://doi.org/https://doi.org/10.1080/13678868.2022.2135938>
- Dubey, R., Gunasekaran, A., & Ali, S. S. (2015). Exploring the relationship between leadership, operational practices, institutional pressures and environmental performance: A framework for green supply chain. *International Journal of Production Economics*, 160, 120-132.
<https://doi.org/https://doi.org/10.1016/j.ijpe.2014.10.001>
- Farrukh, A., Mathrani, S., & Sajjad, A. (2022). A natural resource and institutional theory-based view of green-lean-six sigma drivers for environmental management. *Business Strategy and the Environment*, 31(3), 1074-1090.
<https://doi.org/https://doi.org/10.1002/bse.2936>
- Farrukh, M., Ansari, N., Raza, A., Wu, Y., & Wang, H. (2022). Fostering employee's pro-environmental behavior through green transformational leadership, green human resource management and environmental knowledge. *Technological Forecasting and Social Change*, 179, 121643.
<https://doi.org/https://doi.org/10.1016/j.techfore.2022.121643>
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.
<https://doi.org/https://doi.org/10.1177/002224378101800104>

- Gyensare, M. A., Adomako, S., & Amankwah-Amoah, J. (2024). Green HRM practices, employee well-being, and sustainable work behavior: Examining the moderating role of resource commitment. *Business strategy and the environment*, 33(4), 3129-3141.
- Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., Ray, S., Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). Evaluation of reflective measurement models. *Partial least squares structural equation modeling (PLS-SEM) using R: A workbook*, 75-90.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43, 115-135.
<https://doi.org/https://doi.org/10.1007/s11747-014-0403-8>
- Ikram, M., & Kenayathulla, H. B. (2022). Out of touch: comparing and contrasting positivism and interpretivism in social science. *Asian Journal of Research in Education and Social Sciences*, 4(2), 39-49.
<https://doi.org/https://doi.org/10.55057/ajress.2022.4.2.4>
- Imam, M. A., Ahmad, S., Bhatti, M. A. A., & Afzal, M. (2023). Contextualizing Research Approaches: The Role of Western and Islamic Philosophies in Shaping Methodology and Knowledge Creation. *Al-Irfan*, 8(16), 69-90.
- Janjua, N. A., Shi, D., & Sahibzada, U. F. (2024). Harnessing green innovation via green transformational leadership in Italian luxury hotels: key strategic takeaways. *International Journal of Hospitality Management*, 120, 103739.
- Khaddage-Soboh, N., Yunis, M., Imran, M., & Zeb, F. (2024). Sustainable practices in Malaysian manufacturing: The influence of CSR, transformational leadership, and green organizational culture on environmental performance. *Economic Analysis and Policy*, 82, 753-768.
- Kraus, S., Rehman, S. U., & García, F. J. S. (2020). Corporate social responsibility and environmental performance: The mediating role of environmental strategy and green innovation. *Technological Forecasting and Social Change*, 160, 120262. <https://doi.org/https://doi.org/10.1016/j.techfore.2020.120262>
- Kyriazos, T., & Poga-Kyriazou, M. (2023). Applied psychometrics: Estimator considerations in commonly encountered conditions in CFA, SEM, and EFA practice. *Psychology*, 14(5), 799-828.
- Le, P. B. (2020). How transformational leadership facilitates radical and incremental innovation: the mediating role of individual psychological capital. *Asia-Pacific Journal of Business Administration*, 12(3/4), 205-222.
<https://doi.org/https://doi.org/10.1108/APJBA-04-2020-0129>
- Li, W., Bhutto, T. A., Xuhui, W., Maitlo, Q., Zafar, A. U., & Bhutto, N. A. (2020). Unlocking employees' green creativity: The effects of green transformational leadership, green intrinsic, and extrinsic motivation. *Journal of Cleaner Production*, 255, 120229.
<https://doi.org/https://doi.org/10.1016/j.jclepro.2020.120229>
- Luu, T. T. (2019). Building employees' organizational citizenship behavior for the environment: The role of environmentally-specific servant leadership and a

- moderated mediation mechanism. *International Journal of Contemporary Hospitality Management*, 31(1), 406-426.
<https://doi.org/https://doi.org/10.1108/IJCHM-07-2017-0425>
- Majeed, S., Kim, W. G., & Kim, T. (2023). Perceived green psychological benefits and customer pro-environment behavior in the value-belief-norm theory: The moderating role of perceived green CSR. *International Journal of Hospitality Management*, 113, 103502.
- Malik, S. Y., Hayat Mughal, Y., Azam, T., Cao, Y., Wan, Z., Zhu, H., & Thurasamy, R. (2021). Corporate social responsibility, green human resources management, and sustainable performance: is organizational citizenship behavior towards environment the missing link? *Sustainability*, 13(3), 1044.
<https://doi.org/https://doi.org/10.3390/su13031044>
- Mazhar, S. A., Anjum, R., Anwar, A. I., & Khan, A. A. (2021). Methods of data collection: A fundamental tool of research. *Journal of Integrated Community Health*, 10(1), 6-10. <https://doi.org/https://doi.org/10.24321/2319.9113.202101>
- Miao, R., & Cao, Y. (2019). High-performance work system, work well-being, and employee creativity: Cross-level moderating role of transformational leadership. *International journal of environmental research and public health*, 16(9), 1640. <https://doi.org/https://doi.org/10.3390/ijerph16091640>
- Nguyen, T. H., Van, H. V., Afifa, M. A., & Nguyen, N. M. (2024). Environmental corporate social responsibility and environmental performance: The role of green human resource management and green transformational leadership. *Global Business Review*, 09721509241226576.
- Noor, J., Tunnufus, Z., Handrian, V. Y., & Yumhi, Y. (2023). Green human resources management practices, leadership style and employee engagement: Green banking context. *Heliyon*, 9(12).
- Okoli, C. (2023). Inductive, abductive and deductive theorising. *International Journal of Management Concepts and Philosophy*, 16(3), 302-316.
- Ozili, P. K. (2023). The acceptable R-square in empirical modelling for social science research. In *Social research methodology and publishing results: A guide to non-native English speakers* (pp. 134-143). IGI global.
<https://doi.org/10.4018/978-1-6684-6859-3.ch009>
- Peterson, R. A., & Kim, Y. (2013). On the relationship between coefficient alpha and composite reliability. *Journal of applied psychology*, 98(1), 194.
<https://doi.org/https://psycnet.apa.org/doi/10.1037/a0030767>
- Pham, N. T., Tučková, Z., & Jabbour, C. J. C. (2019). Greening the hospitality industry: How do green human resource management practices influence organizational citizenship behavior in hotels? A mixed-methods study. *Tourism Management*, 72, 386-399.
<https://doi.org/https://doi.org/10.1016/j.tourman.2018.12.008>
- Rafaqat, M. ., Azad, F. ., Ahmad, S. ., Aijaz, K. ., Ikram, S. H. ., Bashir, U. ., Bhatti, M. A. A. ., & Saeed, S. . (2024). Impact of Governance and Strategy Performance on Employer Branding. *Research Journal for Societal Issues*, 6(2), 852-867.

- Raineri, N., & Paillé, P. (2016). Linking corporate policy and supervisory support with environmental citizenship behaviors: The role of employee environmental beliefs and commitment. *Journal of Business Ethics*, 137, 129-148. <https://doi.org/https://doi.org/10.1007/s10551-015-2548-x>
- Rawashdeh, A. (2018). The impact of green human resource management on organizational environmental performance in Jordanian health service organizations. *Management Science Letters*, 8(10), 1049-1058. <https://pdfs.semanticscholar.org/25aa/a71c014f82e1a571022c0ac00b547e351708.pdf>
- Ren, S., Jiang, K., & Tang, G. (2022). Leveraging green HRM for firm performance: The joint effects of CEO environmental belief and external pollution severity and the mediating role of employee environmental commitment. *Human Resource Management*, 61(1), 75-90. <https://doi.org/https://doi.org/10.1002/hrm.22079>
- Ruggerio, C. A. (2021). Sustainability and sustainable development: A review of principles and definitions. *Science of The Total Environment*, 786, 147481. <https://doi.org/https://doi.org/10.1016/j.scitotenv.2021.147481>
- San Román-Niaves, M., Morandini, S., Antonini, M., & Pietrantoni, L. (2025). Green Human Resource Management and Green Psychological Climate: A Scoping Review Through the AMO Framework. *Sustainability*, 17(6), 2535.
- Singh, S. K., Del Giudice, M., Chierici, R., & Graziano, D. (2020). Green innovation and environmental performance: The role of green transformational leadership and green human resource management. *Technological Forecasting and Social Change*, 150, 119762.
- Sobaih, A. E. E., Gharbi, H., Hasanein, A. M., & Elnasr, A. E. A. (2022). The mediating effects of green innovation and corporate social responsibility on the link between transformational leadership and performance: An examination using SEM analysis. *Mathematics*, 10(15), 2685. <https://doi.org/https://doi.org/10.3390/math10152685>
- Sobaih, A. E. E., Hasanein, A., Gharbi, H., & Abu Elnasr, A. E. (2022). Going green together: effects of green transformational leadership on employee green behaviour and environmental performance in the Saudi food industry. *Agriculture*, 12(8), 1100.
- Suganthi, L. (2020). Investigating the relationship between corporate social responsibility and market, cost and environmental performance for sustainable business. *South African Journal of Business Management*, 51(1), 1-13. <https://hdl.handle.net/10520/EJC-2091b9b47d>
- Tamminen, K. A., & Poucher, Z. A. (2020). Research philosophies. In *The Routledge international encyclopedia of sport and exercise psychology* (pp. 535-549). Routledge.
- Tosun, C., Parvez, M. O., Bilim, Y., & Yu, L. (2022). Effects of green transformational leadership on green performance of employees via the mediating role of corporate social responsibility: Reflection from North Cyprus. *International Journal of Hospitality Management*, 103, 103218.

- Umair, S., Waqas, U., & Mrugalska, B. (2024). Cultivating sustainable environmental performance: The role of green talent management, transformational leadership, and employee engagement with green initiatives. *Work*, 78(4), 1093-1105.
- Wen, J., Hussain, H., Waheed, J., Ali, W., & Jamil, I. (2022). Pathway toward environmental sustainability: mediating role of corporate social responsibility in green human resource management practices in small and medium enterprises. *International journal of manpower*, 43(3), 701-718.
- Xiang, C., Chen, F., Jones, P., & Xia, S. (2021). The effect of institutional investors' distraction on firms' corporate social responsibility engagement: evidence from China. *Review of Managerial Science*, 15, 1645-1681.
<https://doi.org/https://doi.org/10.1007/s11846-020-00387-z>
- Yang, M., Bento, P., & Akbar, A. (2019). Does CSR influence firm performance indicators? Evidence from Chinese pharmaceutical enterprises. *Sustainability*, 11(20), 5656.
- Zhao, W., & Huang, L. (2022). The impact of green transformational leadership, green HRM, green innovation and organizational support on the sustainable business performance: Evidence from China. *Economic research-Ekonomska istraživanja*, 35(1), 6121-6141.
- Zhu, J., Tang, W., Wang, H., & Chen, Y. (2021). The influence of green human resource management on employee green behavior a study on the mediating effect of environmental belief and green organizational identity. *Sustainability*, 13(8), 4544.