

Leading the greening: Assessing leadership attitude towards green policies, green environment, and the green circular economy

Ali Junaid Khan¹, Subuhi Khan², Shahar Yar³, Iza Gigauri⁴, Asifa Jahangir⁵

¹ Islamia University of Bahawalpur, Faculty of Management Sciences and Commerce, Institute of Business, Management & Administrative Sciences, Pakistan, ORCID: 0000-0003-2857-9088, Ali.junaid@iub.edu.pk;

² Princess Nourah bint Abdulrahman University, College of Business Administration, Management Department, Saudi Arabia, ORCID: 0000-0002-5359-7942, szkhan@pnu.edu.sa;

³ University of the Potomac, School of Business, USA, ORCID: 0009-0004-6957-9759, shaharyar7313@gmail.com;

⁴ The University of Georgia, School of Business and Administrative Studies, Georgia, ORCID: 0000-0001-6394-6416, i.gigauri@ug.edu.ge;

⁵ Arizona State University, College of Liberal Arts & Sciences, Centre for Muslim Experience and Future Security Initiatives, USA, ORCID: 0000-0002-7046-2038, asifajahangir2327@gmail.com.

Abstract: Developing nations struggle to adopt and implement green initiatives in order to reach a circular economy. This study examined how leadership's green attitude directly affects green policies, the green environment, and the green economy. Additionally, this study considers the mediating role of green policies in achieving green environment and green economy objectives by using transformational leadership theory. The data was collected from the management-level employees of a public-sector telecom company via email using a time-lag approach. The data was analyzed using Smart PLS 4.0. The results revealed that leadership's green attitude affects the formulation and implementation of green policies in the organization. The leadership attitude also has a significant positive effect on the environment of organizations and contributes to a green economy. The empirical results show that green policies play a significant mediating role in enhancing a green environment and economy. This study has far-reaching consequences for corporate leadership and for the circular economy. It emphasizes the importance of proactive green actions done by leaders through the formulation and implementation of green policies. These actions not only boost the organization's long-term viability but also contribute to the nation's overall economic prosperity. The study's theoretical contributions to transformative leadership and sustainable development provide a new path to accomplishing sustainable development goals.

Keywords: Leadership green attitude, green policies, green environment, green economy, circular economy, sustainability.

JEL Classification: Q01, Q50, Q56, D02, M10, M12, M14, O10, O13, O15, L29.

APA Style Citation: Khan, A. J., Khan, S., Yar, S., Gigauri, I., & Jahangir, A. (2025). Leading the greening: Assessing leadership attitude towards green policies, green environment, and the green circular economy. *E&M Economics and Management*, 28(2), 125–140. <https://doi.org/10.15240/tul/001/2025-2-008>

Introduction

The shift to a circular economy requires appropriate policies, strategies and actions. Green policies and decisions are practiced in developed countries to support economic growth. However, backward countries are facing problems with the implementation of green policies (Wu & Cao, 2021). The existing studies in the literature disclosed different dimensions of green policies and the green environment (Alyahya et al., 2023; Tao et al., 2022; Wang et al., 2022). According to some authors, green policies are necessary for organizational change, but employees should be motivated by the adoption of these policies (Hemanand et al., 2022; Heydari et al., 2021). On the other hand, when employees are not motivated, they would not be happy to adopt the sustainability goals in their organizations. The organizational culture is required to be improved over time, and multiple strategic actions should be taken to improve the working of the employees for development and productivity (Luu, 2022). Motivated employees would contribute to a sustainable future, which should be supported by the organizational culture. Many modern organizations are productive in their work because of their high-quality employees' performance for achieving sustainability. Green economic policies have emerged as a crucial approach to address environmental challenges while promoting sustainable economic development. Recently, the green economy has become a global trend, stimulating extensive research and debate. It encompasses various aspects, including circular economy principles, green environment, and green transformational leadership.

The impact of green policies is improved when the organizational working is strong and the employees are motivated to adopt these policies for their work (Salman & Wang, 2024). Pakistan is a third-world country facing a crisis related to the sustainability of the environment. The economic policies of Pakistan have not been appropriately developed to support its economy (Qi et al., 2023). Environmental degradation continues in modern times, despite different actions taken to support environmental improvement. The mismanagement and lack of policy implementation are considered the major restrictions towards green policies. The countries that are using sustainability-related policies are working in a better direction to achieve policies for environmental

sustainability. The lack of strategic management is also one of the reasons the green policies are not being implemented in Pakistan.

Sustainable development in any organization is the way forward to get the basic requirements fulfilled for the economy and environment. The role of management is to implement strategic planning and take sustainable actions. However, the management of Pakistan Telecommunication Company Limited (PTCL) is facing challenges regarding the implementation of strategic goals to achieve sustainability (Zubair et al., 2025). As a leading telecom company in Pakistan, PTCL has taken significant steps towards green policies, but it is still facing issues in the strategic implementation of the goals for sustainability (Husain et al., 2024). Similar to other organizations in Pakistan, leadership of PTCL is not sharp enough to fulfill the sustainability goals. Hence, sustainable working for a green economy and green environment by PTCL is neglected, and it is only in documents and not properly practiced.

Therefore, the objective of this research is to determine the impact of leadership green behavior on green policies, green environment, and green economy by focusing on PTCL. This research addresses the visible gap in the literature, not highlighted by past studies. The findings of this research are critical for advancing the working of employees based on green policies to achieve sustainability in the organization. The theoretical implementations developed by this research are also significant as the newly developed relationships are introduced in the literature. The future directions proposed by this research can pave the way for further studies in the fields of green economy, leadership, and green policies needed for the transition to a circular economy.

1 Theoretical background

This study is based on the transformational leadership theory, suggesting that leadership is the key to transforming the organization from one situation to another (Gigauri & Khan, 2025). It advocates that leaders who are inclined towards the introduction of best practices at their work, lead their organization into a new way of change for advancement. Through the integration of these new work practices, they devote effort to transforming the organization. Transformational leadership theory can drive PTCL's green policies by inspiring

employees, fostering innovation, and integrating sustainability into its vision. Leaders can act as role models by prioritizing renewable energy and eco-friendly solutions while motivating employees through awareness campaigns and incentives (Ashraf et al., 2024). By encouraging innovative green telecom solutions and investing in employee training, PTCL ensures effective implementation of sustainability initiatives, making it a leader in environmental responsibility within Pakistan's telecom sector.

Organizational culture has a significant interplay with the leadership role; however, leaders require adequate resources to introduce practices that transform the working environment. This study highlights that the attitudes of the leaders are the key factor that facilitates the organizational transformation to becoming green, leading it towards a positive change. The study framework (Fig. 1) reflects the significant association between leaders' attitudes and the organizational inclination towards green policies, transforming it into a green economy and environment, based on the premise of transformational leadership theory (Farrukh et al., 2022). The study includes leadership green attitude as the independent variable influencing the green environment and green economy as the dependent variables, mediated by green policies created by the leader. According to the leadership transformational theory, the leadership green attitude represents the leader's feelings often expressed through the behavior, whereas the green environment and economy represent the transformational change taking place in response to the leader's green attitude towards the green policies.

1.1 Leadership green attitude and green environment

A green environment is necessary for any country, but it can be achieved by the sustainable performance of organizations (Begum et al., 2022). The relationship between leadership that exhibits a pro-environmental mindset and its positive impact on fostering an ecologically conscious atmosphere is a subject that is gaining prominence in the fields of environmental sustainability and leadership studies. Leaders who embrace an environmentally conscious attitude are individuals who prioritize and push the adoption of environmentally responsible practices within their particular organizations. This perspective is exemplified by a variety

of initiatives, such as the promotion of energy efficiency, the minimization of waste, the endorsement of sustainable procurement, and the facilitation of environmentally friendly activities (Mogende & Ramutsindela, 2020). Leaders with an environmental attitude can inspire their teams to adopt environmentally responsible behaviors, thereby championing initiatives such as recycling campaigns, carbon footprint reduction, and the incorporation of sustainable business processes (Zheng et al., 2023).

H1: Leadership green attitude has a positive impact on a green environment.

1.2 Leadership green attitude and green policies

The success of the organization and its performance is a productive way to improve organizational performance, while the role of leadership is to support the employees by developing green policies. Leaders with a pro-environment mindset advocate for environmentally friendly measures and values. These leaders' influence on the development of policies that support sustainability can be considerable. The above association is supported by existing scholarly works that emphasize the critical role of leadership in driving environmental policy attempts (Yin et al., 2023). Furthermore, scholarly research into the relationship between leadership styles and the formulation of environmental policies indicates that transformational leaders play an important role in instilling inspiration and motivation within businesses and communities, thereby facilitating the adoption of environmentally sustainable practices. Leaders with transformational skills and a strong commitment to environmental sustainability are capable of effectively communicating the relevance of sustainable practices. As a result, these leaders can help to design policies that encourage and prioritize environmental stewardship (Riva et al., 2021). Indeed, the access of employees to green policies and support from the leadership can motivate them to develop their green behavior effectively.

H2: Leadership's green attitude has a positive impact on green policies.

1.3 Leadership green attitude and green economy

The relationship between environmentally friendly leadership and its favorable impacts on the promotion of a sustainable economy is

an important topic in the disciplines of environmental sustainability and leadership studies. Leaders who are deeply committed to environmental stewardship prioritize the implementation of sustainable practices and concepts. Contemporary research studies that emphasize the critical importance of leadership in advancing ecologically sustainable economic activities support the aforementioned relationship (Ma et al., 2024). According to Begum et al. (2022), leaders with transformational abilities and a commitment to environmental sustainability can inspire both organizations and communities to adopt sustainable practices. This, in turn, has the potential to lead to economic growth through ecologically responsible tactics and innovative ways. The inclusion of environmentally conscious leadership is critical to the growth of green entrepreneurship, innovation, and investment. Leaders who advocate for sustainability have the capacity to push both businesses and individuals to dedicate resources to green technologies and environmentally responsible undertakings (Gatell & Avella, 2024). This ultimately can lead to promoting economic growth while also reducing environmental deterioration.

H3: Leadership green attitude has a positive impact on the green economy.

1.4 Green policies and green environment

The modern market requires a green environment and working policies that are necessary to be implemented reasonably (Aftab et al., 2022). Furthermore, the success of green organizational performance is a possible way to achieve a green economy. However, it is not only the responsibility of the small or public sector organizations but the corporate sector organizations are also required to achieve green sustainability goals. Evidently, working ethics can be achieved when the organizational work is based on green environmental policies (Ling et al., 2022). The role of green environment policies supported by organizational leadership can be a strategic way to advance green success in the market. The reliability of green services helps people to improve green behavior. In order to achieve sustainability, organizations are required to implement green strategies and contribute to a green environment. Furthermore, green management policies and practices facilitate organizational development and success in the market (Obrecht et al., 2022).

Concurrently, the valuable instructions regarding green policies can motivate employees to strive for a green environment and sustainability. In this regard, the transformational leadership theory emphasizes the role of green policies for organizational performance to support a green environment.

H4: Green policies have a positive impact on the green environment.

1.5 Green policies and green economy

The green policies ensure that the employees and organizational functioning comply with organizational standards (Koval et al., 2022). The availability of green and reliable resources facilitates organizational productivity and effectiveness in advancing green policies (Alyahya et al., 2023). The management support for the adoption of green policies can be successful in implementing green policies in the green organization (Khan et al., 2023). The level of green environment and green success can become a possible way to achieve green sustainability. Furthermore, the transformational leadership theory supports green policies for organizational green performance. Organizations' green policies influence the organizational climate for the green behavior of employees. In this context, green policies may significantly contribute to the green economy.

H5: Green policies have a positive impact on the green economy.

1.6 Mediating role of green policies

When the leadership of the organization is self-motivated to achieve green sustainability, and the employees are working hard to achieve it, the success rate of the organization is improved (Kunapatarawong & Martinez-Ros, 2016). The reliability and successful implementation of green policies increase when employees have the adaptability and acceptance to achieve a green environment (Khoshnava et al., 2019). The employees cannot achieve green behavior when they are not treated fairly. Compensation to the employees for their green behavior is also required to ensure their green performance (Liargovas et al., 2017). The leadership's green attitude motivates and encourages their sustainable behavior towards a green environment. According to transformational leadership theory, the role of leaders is necessary in the transformation of the organizations. This research conceptualized that

green policies developed by the leaders are facilitating them to achieve a green environment.

H6: Green policies positively mediate the relationship between leadership green attitude and green environment.

The organizational goals for sustainability are achieved when the performance of employees is shaped by green behavior. Those employees who are not motivated for strategic performance, are required to have organizational culture awareness (Dauvergne, 2022). The top management of the organization is required to work on the sustainability policy to improve the performance of the organization for green working and a green environment. The strategic way to improve the environment in the organization is possible with green

attitudes. The successful development of organizational culture helps the management to achieve the organizational goals (Bayulken et al., 2021). The management of modern organizations should have green policies to implement sustainable goals. The leadership of the organizations is required to motivate the employees for green attitudes (Mohsin et al., 2022). The sustainability of the environment is possible when all-level management works towards organizational goals of the green economy.

H7: Green policies positively mediate the relationship between leadership green attitude and a green economy.

Hence, based on the above literature the research framework is developed (Fig. 1).

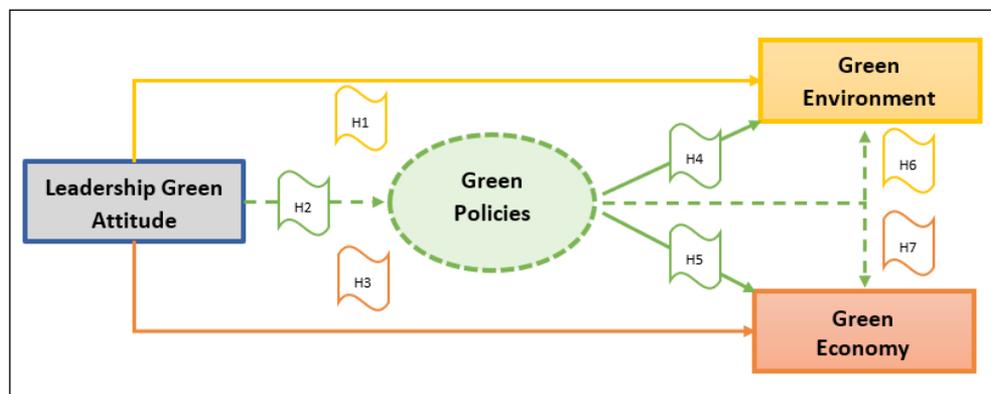


Fig. 1: Theoretical framework

Source: own

2 Research methodology

2.1 Measurement items

This research has used the primary data for the empirical test of the relationship between the variables hypothesized in the previous sections. The quantitative data was collected through the self-administered questionnaire adopted the Likert scale based on 7-points considering "strongly disagree" to "strongly agree."

The scale items were adapted from the existing studies with modifications to fit in the context of the current research. The validity and reliability of the scales were confirmed by the Cronbach

alphas, composite reliability values, and factor loadings of the items. The measuring items for leadership green attitude were adapted from Khan and Khan (2022), considering its Cronbach alpha values of 0.88, composite reliability values of 0.91, and factor loadings for all items above 0.66. Next, the scale items for green policies were adapted from Cheema et al. (2015), demonstrating Cronbach alpha values of 0.78, composite reliability values of 0.87, and factor loadings for all items above 0.71. The scale items for measuring the green environment were adapted from Juliana et al. (2020) with

Cronbach alpha values of 0.81, composite reliability values of 0.70, and factor loadings for all items above 0.69. Lastly, the scale items for measuring green economy were adapted from Kunapatarawong and Martínez-Ros (2016) confirming Cronbach alpha values of 0.77, composite reliability values of 0.73, and factor loadings for all items above 0.67.

2.2 Population, data collection and sample size

A public sector telecom company, Pakistan Telecommunication Limited (PTCL), providing services in all parts of the country, was selected for the study keeping in view the initiatives taken by them for green working. The data was collected from the company's managerial workforce using random sampling techniques. The request for participation in the study was sent to managerial-level personnel only keeping in view their leadership roles and responsibilities. The authors approached the human resource department of PTCL head office for data collection. The HR department subsequent to top management approval, distributed the questionnaire to the management-level employees across the country through their intranet. The purposive sampling technique was used in time lag approach for data collection and the questionnaire was sent in four different phases based on the regional divisions. Purposive sampling allows to select participants based on specific characteristics relevant to the study, ensuring that the data collected is highly targeted and meaningful. While the utilization of the time lag approach in data collection via email conferred numerous advantages by offering convenience and adaptability for the involved parties (Bell et al., 2018). Also, the utilization of the time lag approach in collecting email data served to reduce the impact of social desirability bias. The respondents were given the chance to engage in introspection and furnish more precise data without experiencing the immediate strain of in-person or telephonic interviews. Qi et al. (2023) suggested that the data collected using a time lag approach increases the likelihood of obtaining truthful and straightforward answers, augmenting the caliber of the gathered data. It took about 3 months for the data collection process with several reminders. A total of 398 responses were received and after initial screening, 7 responses were rejected due to a large number

of missing values, resulting in 391 responses included in the final analysis.

2.3 Data analysis tool

The study applied Smart PLS 4.0 for data analysis. The data normality test, the measurement model assessments, the structural model assessment, and the predictive relevance were measured to assess the hypothesized relationships in the study. In measurement model assessment, the validity, reliability, and discriminant validity of the items were checked. In structural model assessment, path coefficient estimates, predictive relevance and its strength, and indirect relationship impact were calculated to determine the findings of paths in the study framework.

3 Results

3.1 Data normality test

The data normality test was undertaken before moving towards the structural analysis of the research framework. Usually, the data-normality is tested using different methods. However, the most used method to test the data normality is the skewness and kurtosis method. It helps to determine the missing values, mean standard deviation, and the values of skewness and kurtosis. As a rule of thumb, the findings of skewness should not be less than -1 and the findings of excess kurtosis should not be more than $+1$ for the normality of data (Royston, 1992). The results confirmed that the data normality was achieved (Tab. 1) with no missing values, confirming its suitability for further analysis.

3.2 Measurement model assessment

After confirming the data normality, the study proceeded with the measurement models' assessments to confirm their convergent validity. The factor loadings of each item of the scales were calculated and were found above 0.60, acceptable for further analyses (Shevlin & Miles, 1998). Next, the study checked the values of Cronbach alpha to determine the validity of the construct's scales. The values of Cronbach alpha above 0.70 confirmed its construct reliability (Tavakol & Dennick, 2011). Moreover, the composite reliability of the study constructs was also tested. The findings confirmed that the composite reliability findings achieved as the values are above the threshold of 0.70 (Hair et al., 2020). Next, the average variance extracted (AVE) was also computed

Tab. 1: Skewness and kurtosis results

Items	No.	Mean	Standard deviation	Excess Kurtosis	Skewness
LGA1	1	4.072	1.074	0.804	-0.167
LGA2	2	3.580	1.150	-0.334	-0.577
LGA3	3	3.957	1.055	-0.083	-0.787
LGA4	4	3.953	1.022	0.169	-0.826
LGA5	5	3.446	1.152	-0.472	-0.417
LGA6	6	3.580	1.128	-0.442	-0.504
GP1	7	3.609	1.185	-0.483	-0.569
GP2	8	4.446	0.956	0.874	-0.846
GP3	9	4.228	1.047	0.117	-0.344
GP4	10	4.014	1.173	0.497	-0.151
GP5	11	4.080	1.158	0.622	-0.211
GP6	12	3.935	1.153	0.197	-0.985
GEN1	13	4.069	1.122	0.673	-0.188
GEN2	14	4.123	1.090	0.908	-0.260
GEN3	15	3.793	1.259	-0.370	-0.800
GEN4	16	3.674	1.181	-0.449	-0.620
GEN5	17	3.989	1.048	0.354	-0.928
GEN6	18	4.065	0.998	0.507	-0.989
GEN7	19	4.025	1.037	0.616	-0.031
GEC1	20	4.058	1.051	0.654	-0.094
GEC2	21	3.978	1.110	0.284	-0.981
GEC3	22	3.793	1.105	-0.122	-0.733
GEC4	23	3.895	1.110	0.199	-0.910
GEC5	24	4.040	1.174	0.539	-0.171
GEC6	25	3.725	1.092	-0.214	-0.611
GEC7	26	3.826	1.122	-0.118	-0.797

Source: own

to determine the variance captured by the construct to validate it further. The acceptable threshold for average variance is above 0.50 (Hair et al., 2019). The findings confirmed that the average variance extracted was achieved for all the study variables (Tab. 2).

Subsequently, the discriminant validity was tested. The discriminant validity factor is used to test whether the measurements used for data collection for different variables are related

or not, which should not be related with clear discrimination between them. The test determines the discrimination between the items by employing different methods. The current study adopted two significant methods of heterotrait-monotrait and measuring cross-loading to determine the discriminant validity of the study constructs. The heterotrait-monotrait method is a second-generation method to test this relationship. When the results generated using

Tab. 2: Convergent validity results

Variables	Items	Factor loadings	Cronbach alpha	Composite reliability	Average variance extracted
<i>Green economy</i>	GEC1	0.855	0.878	0.909	0.598
	GEC2	0.880			
	GEC3	0.849			
	GEC4	0.890			
	GEC5	0.770			
	GEC6	0.649			
	GEC7	0.612			
<i>Green environment</i>	GEN1	0.815	0.894	0.915	0.607
	GEN2	0.753			
	GEN3	0.805			
	GEN4	0.754			
	GEN5	0.761			
	GEN6	0.805			
	GEN7	0.758			
<i>Green policies</i>	GP1	0.665	0.878	0.908	0.626
	GP2	0.667			
	GP3	0.848			
	GP4	0.848			
	GP5	0.839			
	GP6	0.851			
<i>Leadership green attitude</i>	LGA1	0.655	0.846	0.887	0.568
	LGA2	0.705			
	LGA3	0.811			
	LGA4	0.832			
	LGA5	0.771			
	LGA6	0.733			

Note: LGA – leadership green attitude; GP – green policy; GEN – green environment; GEC – green economy.

Source: own

heterotrait-monotrait show that the values are less than 0.90, it confirms the discriminant validity of the constructs (Gold et al., 2001). The findings (Tab. 3) depicted values less than 0.90 thus confirming the study variables' discriminant validity using the heterotrait-monotrait method.

Next, the cross-loading method was run to reconfirm the discriminant validity of the study constructs. In the cross-loading method,

the values of the measurements of one variable are compared with the values of the measurement of other items. For significant cross-loadings, the values of one variable's measurement should be greater than the values of measurements of other variables that are in correlation with it. The findings of cross-loadings reconfirmed that the study variables meet the criteria of discriminant validity (Tab. 4).

Tab. 3: Discriminant validity results (heterotrait-monotrait method)

Variables	Green economy	Green environment	Green policies	Leadership green attitude
<i>Green economy</i>				
<i>Green environment</i>	0.824			
<i>Green policies</i>	0.669	0.849		
<i>Leadership green attitude</i>	0.725	0.761	0.801	

Source: own

Tab. 4: Discriminant validity results (cross loadings method)

Items	Green economy	Green environment	Green policies	Leadership green attitude
GEC1	0.855	0.738	0.531	0.532
GEC2	0.880	0.690	0.532	0.538
GEC3	0.849	0.682	0.520	0.539
GEC4	0.890	0.717	0.520	0.540
GEC5	0.770	0.655	0.475	0.411
GEC6	0.449	0.323	0.261	0.342
GEC7	0.612	0.443	0.401	0.439
GEN1	0.548	0.815	0.756	0.576
GEN2	0.418	0.753	0.739	0.515
GEN3	0.610	0.805	0.717	0.610
GEN4	0.684	0.754	0.489	0.512
GEN5	0.778	0.761	0.478	0.455
GEN6	0.727	0.805	0.539	0.501
GEN7	0.759	0.758	0.483	0.483
GP1	0.594	0.566	0.865	0.743
GP2	0.246	0.415	0.667	0.415
GP3	0.420	0.643	0.848	0.499
GP4	0.461	0.634	0.848	0.520
GP5	0.482	0.687	0.839	0.489
GP6	0.580	0.747	0.851	0.617
LGA1	0.333	0.432	0.520	0.655
LGA2	0.446	0.436	0.428	0.705
LGA3	0.505	0.576	0.587	0.811
LGA4	0.505	0.603	0.640	0.832
LGA5	0.544	0.525	0.522	0.771
LGA6	0.472	0.458	0.491	0.733

Source: own

3.3 Structural model assessment

After the measurement models assessment, the study proceeded with the structural model assessment to determine the findings of the hypothesized relationships among the study variables. The *t*-values and *p*-values were calculated for the path results. The recommended method by Hair et al. (2020) is used to determine the findings for both direct and indirect paths. The one-tailed hypothesis is significant when the *t*-values are above 1.64 (Ramayah et al., 2018). Since this study has a directional and one-tailed hypothesis, the *t*-value above or equal to 1.64 is considered significant.

The structural path analysis findings confirmed the acceptance of hypothesis *H1* with *t*-value = 4.441, illuminating that leader’s green attitude has a significant positive impact on the green work environment.

Next, the findings of hypothesis *H2* unveiled that a leader’s green attitude has a significant positive impact on workplace green policies (*t*-value = 2.023). Thirdly, the findings of hypothesis *H3* also confirmed that a leader’s green

attitude has a significant positive impact on the green economy (*t*-value = 5.487).

Furthermore, the findings of hypotheses *H4* and *H5* disclosed that the leader’s green policies have a significant positive impact on the green environment (*t*-value = 12.884) and the green economy (*t*-value = 4.538). The detailed report is provided in Tab. 5.

Subsequently, hypotheses *H6* and *H7* were tested to determine the mediating effect of the leader’s green policies between his/her attitude and green outcomes in terms of economy and environment. The findings confirmed that the leader’s green policies positively mediated the relationship between his/her green attitude and the green environment (*t*-value = 12.876), thus accepting hypothesis *H6*. Moreover, the findings also confirmed the significant mediating effect of the leader’s green policies on the relationship between a leader’s green attitude and green economy (*t*-value = 4.497), which accepted our study hypothesis *H7* as well. The mediation study results show that the impact of a leader’s green policies on the green environment and economy

Tab. 5: Direct paths findings

Paths	Original sample	Sample mean	Standard deviation	<i>t</i> -statistics	<i>p</i> -values
<i>Leadership green attitude</i> → <i>green environment</i>	0.227	0.233	0.054	4.221	0
<i>Leadership green attitude</i> → <i>green policies</i>	0.710	0.711	0.035	2.023	0
<i>Leadership green attitude</i> → <i>green economy</i>	0.385	0.394	0.070	5.487	0
<i>Green policies</i> → <i>green environment</i>	0.634	0.632	0.049	12.884	0
<i>Green policies</i> → <i>green economy</i>	0.337	0.332	0.074	4.538	0

Source: own

Tab. 6: Indirect paths

Indirect paths	Original sample	Sample mean	Standard deviation	<i>t</i> -statistics	<i>p</i> -values
<i>Leadership green attitude</i> → <i>green policies</i> → <i>green environment</i>	0.450	0.449	0.035	12.876	0
<i>Leadership green attitude</i> → <i>green policies</i> → <i>green economy</i>	0.239	0.236	0.053	4.497	0

Source: own

is more significant and profound than the direct relationship. Tab. 6 presents the results of indirect paths.

3.4 Predictive relevance

The predictive relevance was also tested to establish the relevance of the endogenous constructs. The blindfolding method was adopted

to determine the Q^2 values. When the values of predictive relevance are more than 0, it means there is predictive relevance of the endogenous constructs in the model (Koban et al., 2012). The findings depicted that Q^2 values of the constructs are more than 0, which confirmed the predictive relevance of path coefficients (Tab. 7).

Tab. 7: Q^2 results (predictive relevance)

Variables	SSO	SSE	Q^2 (= 1 - SSE/SSO)
<i>Green economy</i>	1,932	1,426.812	0.261
<i>Green environment</i>	1,932	1,205.951	0.376
<i>Green policies</i>	1,656	1,172.805	0.292
<i>Leadership green attitude</i>	1,656	1,656.000	

Source: own

4 Discussion

The findings of this study, conducted in the context of Pakistan Telecommunication Company Limited (PTCL), shed light on the significant influence of leadership's environmentally friendly attitude on the development of green policies, green environment, and green economic achievements. The existing empirical research supports the assumption that leadership commitment to environmental sustainability has a major impact on a variety of critical factors, both directly and indirectly. Our study demonstrates a substantial relationship between leaders' attitudes towards green policies and their positive influence on the organizational environment and contribution towards a circular economy. This conclusion is consistent with prior research by Aftab et al. (2022), which highlighted the importance of senior leadership in organizational situations. Leadership is generally connected with the ability to successfully utilize resources and encourage employees to exert a consistent level of effort. When leaders at all levels work together to achieve management objectives, it generates an atmosphere that has the potential to enhance the sustainability of the environment. The availability of an effective leadership style and the implementation of green policies enable organizations to achieve a green environment and contribute to a green economy. Furthermore, our findings

are consistent with those of Ling et al. (2022), underlining the necessity of creating favorable conditions to encourage employee participation in environmentally friendly efforts.

In accordance with our second set of findings, our study reveals a significant relationship between leadership's green attitude and the formulation and implementation of green policies. According to Obrecht et al. (2022), worker success rates are impossible to achieve in any type of job until acceptance-related concerns are resolved. It is possible to determine a worker's achievement rate in their work by looking at how strictly they adhere to the goal of a green workplace. Whenever they are not compensated equitably, employees are unable to exhibit green behavior. Implementing a green circular economy is possible through employees striving towards sustainability, which is encouraged by leaders' green behavior. According to Dauvergne (2022), resilience is a key component of creating an environmentally conscious society, but organizational personnel also need to be inspired to strive towards it. In addition, the green environmental policies of businesses can support long-term growth, but management must put in the necessary effort. It would be challenging to attain green performance unless the top leadership is receptive to it. An effective technique to enhance organizational functioning is to evaluate the company's achievements.

Furthermore, the study found a significant relationship between environmentally conscious leadership and a positive impact on the green economy. According to Koval et al. (2022), the secret to working towards an environmentally friendly planet is tactical leadership. Additionally, all organizational management procedures for improved organizational advancement are necessary to achieve market success. Employees should be inspired to strive for sustainable development by receiving helpful guidance. Any organization must have green policies in place to guarantee that its personnel and operations meet organizational standards. According to Bayulken et al. (2021), the effectiveness of organizations in the market determines how successful their efforts at longevity will be. Making green resources available for organizational use can be a useful strategy for advancing green policy.

The study results confirm and build on prior research by highlighting the critical role of green policies in fostering environmental sustainability. According to Mohsin et al. (2022), it is necessary to work equitably to accomplish environmental goals in the proper direction for many organizations that have struggled to accomplish compatibility concerning the environment. In the present era, shaped by complexities of the volatile, uncertain, complex, and ambiguous (VUCA) environment, it is vital for companies to improve their organizational culture through green transformational leadership and implement green practices. According to Alyahya et al. (2023), the general population's exposure to green knowledge and culture can help companies reach the next standard for green policy. The effectiveness of green initiatives in any country depends on their achievements in creating a green environment. The importance of ecological sustainability can serve as a tactical tool for promoting the commercial popularity of green products. Implementing green policies in green organizations can be successful with managerial backing for environmentally friendly rules.

According to the findings of our research on the effects of green policies, the adoption and enforcement of such policies play a significant role in fostering the growth of a sustainable green economy. According to Amankwah-Amoah and Syllias (2020), the degree of environmental sustainability and green business performance may become a viable strategy. The green performance of an organization will

improve if the organization's leadership promotes green policies and practices.

Lastly, the results of mediating variables show that green policies positively mediate the relationship between leadership's green attitude and a green environment. According to Mogende and Ramutsindela (2020), any organization working to promote environmental sustainability can succeed if every member of that particular team is driven to make a difference. It is also conceivable for the management to permit staff to work in a greener manner. Workers may be able to grow in their careers by adopting green work practices. Personnel who have access to green policies may be encouraged to practice green behaviors in a useful manner. According to Riva et al. (2021), the modern marketplace demands a green atmosphere and functioning policies that must be put into place in a just manner.

Conclusions

Developing an environmentally friendly economy is feasible through the achievement of green organizational functioning. Individuals who lack the drive to perform strategically must be aware of the company's culture. To increase the company's achievements for green functioning and an ecologically conscious setting, the top management must support an environmental strategy. Similarly, the findings indicate that green policies positively mediate the relationship between leadership green attitude and a green economy. Environmentally friendly working of an organization makes it feasible to strategically enhance the economic and environment sustainability and contributes to sustainable development goals. The organization's objectives should be set following the environment, with sustainability as its ultimate objective. To ensure that employees are working more effectively for the success of the company, it is also necessary to compensate them for their sustainable behavior. Leaders should provide the support and monitor employee performance to improve the organization's achievements for sustainable future.

Theoretical implications. This study has theoretical as well as practical implications that are new to the literature and practice. Firstly, this research introduced new relationships in the body of knowledge. The findings of this research empirically highlighted that the green environment is influenced by leadership

green behavior. This study also demonstrated in the literature that green leadership behavior is also an influencing variable to green policies. In the same way, the study highlighted that the green economy is possible with leadership green behavior. Furthermore, the study emphasized that the green policies within an organization significantly influence the green environment. The research strengthens academic knowledge by combining transformations leadership theory with sustainability research methods. Leaders expressing a green attitude enable policy development implementing green initiatives which leads to better sustainability at the organizational and national levels. The study brings leadership theory and sustainable development closer together which provides researchers and practitioners new methods to achieve circular economy goals along with sustainable development goals (SDGs) through greater understanding of transformational leadership practices in sustainability contexts.

Practical implications. The practical importance of this research is also critical as it has presented the ways that could be possibly used for the green economy and green environment achievement. The study has demonstrated that a green environment is a crucial factor that can be achieved when the organizational leadership is motivated to work to achieve it. Access to a green environment can improve the organization working in a green direction. The organizational policies developed for the achievement of green behavior can take the organization to a green economy. However, it is also noted that the leadership of the organization should be self-motivated to adopt green behavior. The implementation of green policies is the path towards the improvement of sustainable performance of organizations. The organizational culture should be transformed to support a green environment. Green transformational leaders can play a leading role in introducing green policies, creating a green environment, and achieving a green economy. PTCL's leadership group should adopt green policies through initiatives that support sustainable technologies like solar telecommunications towers and intelligent energy control systems which provide cost reduction and carbon emissions control. PTCL can develop an environmental work culture which meets both national and global sustainability standards through the use of sustainability-based

practice incentives and employee training led by transformational leaders. The investment in green digital infrastructure contains paperless approaches and e-billing systems which yields advantages for both environmental sustainability and consumer satisfaction together with cost-efficiency benefits. PTCL can elevate its position in Pakistan's sustainable transition by implementing leadership-backed programs which both reinforce CSR performance and construct a positive brand image.

Limitations and future directions. This study has some limitations that may prompt further research. The study has identified the relationship between different variables and presented results. Yet, the research has collected data only from the respondents who are employees at the managerial level in one organization. Furthermore, the study has only targeted PTCL branches in the main cities of Pakistan excluding remote areas. Therefore, future studies should enhance the findings of this research by incorporating not only managers but employees as well, and by surveying other companies in diverse industries. Since leadership attitudes may differ among cultures, future research in different countries can be beneficial for the advancement of theory and practice. In addition, scholars can collect not only quantitative data but also use qualitative methods to further explore the phenomenon.

Acknowledgments: Princess Nourah Bint Abdulrahman University Researchers Supporting Project Number (PNURSP2025R794), Princess Nourah Bint Abdulrahman University, Riyadh, Saudi Arabia.

References

- Aftab, J., Abid, N., Sarwar, H., & Venezianni, M. (2022). Environmental ethics, green innovation, and sustainable performance: Exploring the role of environmental leadership and environmental strategy. *Journal of Cleaner Production*, 378, 134639. <https://doi.org/10.1016/j.jclepro.2022.134639>
- Alyahya, M., Aliedan, M., Agag, G., & Abdelmoety, Z. H. (2023). The antecedents of hotels' green creativity: The role of green HRM, environmentally specific servant leadership, and psychological green climate. *Sustainability*, 15(3), 2629. <https://doi.org/10.3390/su15032629>

- Amankwah-Amoah, J., & Syllias, J. (2020). Can adopting ambitious environmental sustainability initiatives lead to business failures? An analytical framework. *Business Strategy and the Environment*, 29(1), 240–249. <https://doi.org/10.1002/bse.2361>
- Ashraf, S., Ali, S. Z., Khan, T. I., Azam, K., & Afridi, S. A. (2024). Fostering sustainable tourism in Pakistan: Exploring the influence of environmental leadership on employees' green behavior. *Business Strategy & Development*, 7(1), 328. <https://doi.org/10.1002/bsd.2.328>
- Bayulken, B., Huisingh, D., & Fisher, P. M. J. (2021). How are nature based solutions helping in the greening of cities in the context of crises such as climate change and pandemics? A comprehensive review. *Journal of Cleaner Production*, 288, 125569. <https://doi.org/10.1016/j.jclepro.2020.125569>
- Begum, S., Ashfaq, M., Xia, E., & Awan, U. (2022). Does green transformational leadership lead to green innovation? The role of green thinking and creative process engagement. *Business Strategy and the Environment*, 31(1), 580–597. <https://doi.org/10.1002/bse.2911>
- Bell, E., Bryman, A., & Harley, B. (2018). *Business research methods*. Oxford University Press.
- Cheema, S., Durrani, A. B., Pasha, A. T., & Javed, F. (2015). Green human resource practices: Implementations and hurdles of SMEs in Pakistan. *Journal of Business Studies Quarterly*, 7(2), 231.
- Dauvergne, P. (2022). Is artificial intelligence greening global supply chains? Exposing the political economy of environmental costs. *Review of International Political Economy*, 29(3), 696–718. <https://doi.org/10.1080/09692290.2020.1814381>
- 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/10.1016/j.techfore.2022.121643>
- Gatell, I. S., & Avella, L. (2024). Impact of Industry 4.0 and circular economy on lean culture and leadership: Assessing digital green lean as a new concept. *European Research on Management and Business Economics*, 30(1), 100232. <https://doi.org/10.1016/j.iedeen.2023.100232>
- Gigauri, I., & Khan, A. J. (Eds.). (2025). Navigating corporate social responsibility through leadership and sustainable entrepreneurship. In *Advances in marketing, customer relationship management, and e-services*. IGI Global. <https://doi.org/10.4018/979-8-3693-6685-1>
- Gold, A. H., Malhotra, A., & Segars, A. H. (2001). Knowledge management: An organizational capabilities perspective. *Journal of Management Information Systems*, 18(1), 185–214. <https://doi.org/10.1080/07421222.2001.11045669>
- Hair, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, 109, 101–110. <https://doi.org/10.1016/j.jbusres.2019.11.069>
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/eb-11-2018-0203>
- Hemanand, D., Mishra, N., Premalatha, G., Mavaluru, D., Vajpayee, A., Kushwaha, S., & Sahile, K. (2022). Applications of intelligent model to analyze the green finance for environmental development in the context of artificial intelligence. *Computational Intelligence and Neuroscience*, 2022, 1–8. <https://doi.org/10.1155/2022/2977824>
- Heydari, J., Govindan, K., & Basiri, Z. (2021). Balancing price and green quality in presence of consumer environmental awareness: A green supply chain coordination approach. *International Journal of Production Research*, 59(7), 1957–1975. <https://doi.org/10.1080/00207543.2020.1771457>
- Husain, M. D., Farooq, S., Siddiqui, M. O. R., & Khan, D. R. (2024). Textile dynamics in Pakistan: Unraveling the threads of production, consumption, and global competitiveness. In R. S. Kumar, H. Memon, & S. Greeshma (Eds.), *Consumption and production in the textile and garment industry: A comparative study among Asian countries* (pp. 33–58). Springer Nature Singapore. https://doi.org/10.1007/978-981-97-6577-5_3
- Juliana, J., Djakasaputra, A., & Pramono, R. (2020). Green perceived risk, green viral communication, green perceived value against green purchase intention through green satisfaction. *Journal of Industrial Engineering & Management Research*, 1(2), 124–139.
- Khan, A. J., Hanif, N., Iqbal, J., Ahmed, T., Hameed, W. U., & Malik, A. A. (2023). Greening

for greater good: Investigating the critical factors for customer satisfaction with sustainable e-banking. *Environmental Science and Pollution Research*, 31(34), 46255–46265. <https://doi.org/10.1007/s11356-023-29090-8>

Khan, A. N., & Khan, N. A. (2022). The nexuses between transformational leadership and employee green organisational citizenship behaviour: Role of environmental attitude and green dedication. *Business Strategy and the Environment*, 31(3), 921–933. <https://doi.org/10.1002/bse.2926>

Khoshnava, S. M., Rostami, R., Zin, R. M., Štreimikienė, D., Yousefpour, A., Strielkowska, W., & Mardani, A. (2019). Aligning the criteria of green economy (GE) and sustainable development goals (SDGs) to implement sustainable development. *Sustainability*, 11(17), 4615. <https://doi.org/10.3390/su11174615>

Koban, L., Pourtois, G., Bediou, B., & Vuilleumier, P. (2012). Effects of social context and predictive relevance on action outcome monitoring. *Cognitive, Affective, & Behavioral Neuroscience*, 12(3), 460–478. <https://doi.org/10.3758/s13415-012-0091-0>

Koval, V., Borodina, O., Lomachynska, I., Olczak, P., Mumladze, A., & Matuszewska, D. (2022). Model analysis of eco-innovation for national decarbonisation transition in integrated European energy system. *Energies*, 15(9), 3306. <https://doi.org/10.3390/en15093306>

Kunapatarawong, R., & Martínez-Ros, E. (2016). Towards green growth: How does green innovation affect employment? *Research Policy*, 45(6), 1218–1232. <https://doi.org/10.1016/j.respol.2016.03.013>

Liargovas, P., Apostolopoulos, N., Pappas, I., & Kakouris, A. (2017). SMEs and green growth: The effectiveness of support mechanisms and initiatives matters. In *Green economy in the Western Balkans* (pp. 79–108). Emerald Publishing Limited. <https://doi.org/10.1108/978-1-78714-499-620171004>

Ling, Y., Xu, J., & Ülkü, M. A. (2022). A game-theoretic analysis of the impact of government subsidy on optimal product greening and pricing decisions in a duopolistic market. *Journal of Cleaner Production*, 338, 130028. <https://doi.org/10.1016/j.jclepro.2021.130028>

Luu, T. T. (2022). How customers matter to tourism employees' green creative behavior? *Journal of Sustainable Tourism*, 32(1), 27–61. <https://doi.org/10.1080/09669582.2022.2113790>

Ma, W., Khan, A. J., Fayyaz, S., Curle, S., & Gigauri, I. (2024). Am I safe at my educational place? Creating secure and sustainable urban learning spaces through green infrastructure and ecological education. *Education and Urban Society*, 56(9), 1118–1141. <https://doi.org/10.1177/00131245241249980>

Mogende, E., & Ramutsindela, M. (2020). Political leadership and non-state actors in the greening of Botswana. *Review of African Political Economy*, 47(165), 399–415. <https://doi.org/10.1080/03056244.2020.1826298>

Mohsin, M., Taghizadeh-Hesary, F., Iqbal, N., & Saydaliev, H. B. (2022). The role of technological progress and renewable energy deployment in green economic growth. *Renewable Energy*, 190, 777–787. <https://doi.org/10.1016/j.renene.2022.03.076>

Obrecht, M., Feodorova, Z., & Rosi, M. (2022). Assessment of environmental sustainability integration into higher education for future experts and leaders. *Journal of Environmental Management*, 316, 115223. <https://doi.org/10.1016/j.jenvman.2022.115223>

Ramayah, T., Cheah, J., Chuah, F., Ting, H., & Memon, M. A. (2018). *Partial least squares structural equation modeling (PLS-SEM) using smartPLS 3.0*. Pearson.

Riva, F., Magrizzos, S., & Rubel, M. R. B. (2021). Investigating the link between managers' green knowledge and leadership style, and their firms' environmental performance: The mediation role of green creativity. *Business Strategy and the Environment*, 30(7), 3228–3240. <https://doi.org/10.1002/bse.2799>

Royston, P. (1992). Which measures of skewness and kurtosis are best? *Statistics in Medicine*, 11(3), 333–343. <https://doi.org/10.1002/sim.4780110306>

Salman, M., & Wang, G. (2024). The impact of National Environmental Policy on Pakistan's green economic development: Evidence from regression discontinuity design. In *Environment, development and sustainability*. Springer Science and Business Media LLC. <https://doi.org/10.1007/s10668-023-04392-6>

Shevlin, M., & Miles, J. N. V. (1998). Effects of sample size, model specification and factor loadings on the GFI in confirmatory factor analysis. *Personality and Individual Differences*, 25(1), 85–90. [https://doi.org/10.1016/s0191-8869\(98\)00055-5](https://doi.org/10.1016/s0191-8869(98)00055-5)

Tao, F., Zhou, Y., Bian, J., & Lai, K. K. (2022). Agency selling or reselling? Channel selection of

green products with consumer environmental awareness. *International Journal of Logistics Research and Applications*, 27(2), 326–345. <https://doi.org/10.1080/13675567.2022.2114436>

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53–55. <https://doi.org/10.5116/ijme.4dfb.8dfd>

Wang, J., Wang, W., Ran, Q., Irfan, M., Ren, S., Yang, X., Wu, H., & Ahmad, M. (2022). Analysis of the mechanism of the impact of internet development on green economic growth: Evidence from 269 prefecture cities in China. *Environmental Science and Pollution Research*, 29(7), 9990–10004. <https://doi.org/10.1007/s11356-021-16381-1>

Wu, M., & Cao, X. (2021). Greening the career incentive structure for local officials in China: Does less pollution increase the chances of promotion for Chinese local leaders? *Journal of Environmental Economics and Man-*

agement, 107, 102440. <https://doi.org/10.1016/j.jeem.2021.102440>

Yin, X., Khan, A. J., Basheer, M. F., Iqbal, J., & Hameed, W. U. (2023). Green human resource management: A need of time and a sustainable solution for organizations and environment. In *Environment, Development and Sustainability*, 27(1), 1379–1400. Springer Science and Business Media LLC. <https://doi.org/10.1007/s10668-023-03915-5>

Zheng, Y., (Lisa) Gao, Y., Li, M., & Dang, N. (2023). Leadership styles and employee pro-environmental behavior in the tourism and hospitality industry: A cognitive-affective personality system perspective. *International Journal of Hospitality Management*, 113, 103509. <https://doi.org/10.1016/j.ijhm.2023.103509>

Zubair, M., Zafar, Z., Mehmood, M. S., & Ahmad, M. I. (2025). Innovative GIS techniques for identifying optimal service center locations in Islamabad a PTCL case study. *Discover Cities*, 2(1), 4. <https://doi.org/10.1007/s44327-025-00044-8>