

WHEN LEADERSHIP FAILS BUT CSR WORKS: INSIGHTS INTO SUSTAINABLE BUSINESS INNOVATION IN THE HOSPITALITY INDUSTRY

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Abstract

The rapid expansion of hotel construction in the Special Region of Yogyakarta, one of Indonesia's leading tourist destinations, has contributed to environmental degradation, including declining air and water quality, depletion of natural resources, land-use change, and poor environmental management. These issues collectively increase disaster risks and threaten community well-being. Grounded in Resource-Based View theory, this study examines how strategic organisational resources influence sustainability outcomes. Specifically, it analyses the effects of Transformational Leadership and Corporate Social Responsibility on Sustainable Business Innovation, with Green Human Resource Management as a moderating variable. Data were collected from 380 hotel employees using non-probability purposive sampling and quota sampling based on the Slovin formula from a population of 5,445. The data were analysed using Structural Equation Modelling, Partial Least Squares to evaluate the measurement model (validity, reliability, Heterotrait-Monotrait Ratio) and structural model (fit and hypothesis testing). The results show that Transformational Leadership has no significant effect on Sustainable Business Innovation, while Corporate Social Responsibility has a positive and significant influence. Green Human Resource Management does not moderate the relationship between either Transformational Leadership or Corporate Social Responsibility and Sustainable Business Innovation. Theoretically, the study strengthens Resource-Based View by emphasising the strategic value of human resources as valuable, rare, inimitable, and non-substitutable assets. Practically, it highlights the importance of talent retention, fair reward systems, and authentic employee engagement in sustainability programmes. Overall, this research enriches the limited empirical evidence linking Resource-Based View, leadership, Corporate Social Responsibility, and human resource management practices within sustainable hospitality management.

Keywords: corporate social responsibility, green human resource management, sustainable business innovation, transformational leadership

JEL Classification: J53, M54, L21

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1. Introduction

As the number of hotels continues to rise in the Special Region of Yogyakarta, Indonesia – the country's second most popular tourist destination – environmental degradation has become an increasing concern. This growth has led to declining water and air quality, changes in natural resources and land use, and challenges in environmental management, thereby creating potential disaster risks for local communities (Fatmah et al., 2024). Yogyakarta has a unique cultural and environmental context, where local wisdom such as *hamemayu hayuning bawana* (preserving the beauty and balance of nature) is a fundamental part of its people's philosophy of life. With its strong cultural identity as a royal-based city led by a king who also serves as governor, Yogyakarta represents a harmonious blend of palace traditions, arts, and spirituality. This makes the region not only a centre of cultural tourism but also a symbol of harmony between humans and nature. However, the rapid expansion of hotel development and the growing influx of tourists risk disrupting this balance if not managed sustainably.

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In the context of global sustainable tourism, Yogyakarta has significant potential to become a model destination that integrates local cultural preservation with green business innovation. Modern travellers are increasingly conscious of sustainability and tend to prefer companies that act responsibly towards the environment, society, and culture (Pinho and Gomes, 2023). Moreover, many Millennials and Generation Z consumers are willing to pay premium prices for products and services that do not harm the environment, deplete natural resources, or negatively affect human life. Therefore, the implementation of Sustainable Business Innovation (SBI) within Yogyakarta's hospitality industry has become essential, not only to maintain competitiveness but also to safeguard the region's cultural and environmental heritage.

SBI serves as a strategic orientation to ensure long-term sustainability and growth in the hospitality sector (Lo et al., 2023). Increasing competition in hotel development requires companies to innovate continuously and develop competitive advantages that support long-term business sustainability (Onileowo et al., 2021). Such innovations can reduce operational costs, improve efficiency, and minimise negative environmental impacts, including those related to climate change and regulatory pressures (Aulia et al., 2024). However, aligning innovation initiatives with sustainability goals remains a significant challenge. In this context, Transformational Leadership (TL) can play a crucial role as a driving force in fostering an innovation-oriented culture grounded in sustainability values.

Transformational leadership is a leadership approach that emphasises fundamental organisational change through positive influence on individuals and teams. By adopting a creative, adaptive, and innovative mindset, transformational leaders focus on inspiring vision, fostering motivation, and promoting continuous development (Zhao and Huang, 2022). Such leaders not only motivate but also guide employees to embrace innovations that generate positive outcomes for both the organisation and the environment (Evina et al., 2024). In contrast, hospitality businesses that do not apply TL in pursuing Sustainable Business Innovation (SBI) may experience declining employee motivation, reduced creativity, and an excessive focus on short-term goals. These adverse outcomes can ultimately weaken the industry's capacity to adapt, enhance performance, and achieve long-term sustainability (Çop et al., 2021).

As awareness of sustainability increases, the hospitality industry is increasingly expected to act responsibly towards various stakeholders, including communities, employees, customers, and the environment. The implementation of Corporate Social Responsibility (CSR) protects stakeholder interests and enhances public trust in the industry's long-term resilience (Krisna and Emilia, 2023). CSR initiatives also enable hotels to balance commercial objectives with social responsibility by fostering sustainable innovation that improves efficiency, reduces waste, and enhances environmental performance. Integrating sustainability into management strategies supports long-term growth and profitability, and reinforces the industry's role as an agent of sustainable transformation (Maya and Sihite, 2024). Conversely, hotels that neglect CSR or appear indifferent to social and environmental issues risk damaging their reputation and losing the trust of customers, investors, and the wider public (Hengboriboon et al., 2022). Therefore, implementing CSR practices in the hospitality industry is essential to mitigate environmental impacts and foster the development of eco-friendly ideas and initiatives (Juliando and Saputra, 2023).

Green Human Resource Management (GHRM) acts as a catalyst for sustainability in the hospitality sector by aligning human resource practices with environmental objectives and fostering green innovation (Putri and Nugroho, 2024). This approach transforms hotel management systems by developing employees who display positive attitudes towards environmental preservation (Wijonarko and Amaliyah, 2023). The implementation of GHRM is vital for achieving sustainable competitive advantage (Xu and Li, 2020), as it empowers employees to contribute actively to maintaining a green work environment (Pramudita and Gunawan, 2023). Continuous improvement driven by GHRM practices can enhance long-term organisational performance (Siburian and Sugiarto, 2022). Nevertheless, the hotel industry still faces challenges in implementing these sustainability-oriented policies, particularly in raising employees' environmental awareness and responsibility (Kurniawan et al., 2024). These challenges require hospitality businesses to rethink their operations and processes to better align with environmental preservation goals. Through GHRM, employees become actively

engaged in creating eco-friendly workplaces, minimising environmental impacts, and embedding sustainable practices into daily hotel operations (Liu et al., 2020).

Despite the growing attention to TL, CSR, and GHRM, a theoretical gap remains when these are viewed through the lens of the Resource-Based View (RBV) (Wernerfelt, 1984). The RBV emphasises that organisational success derives from resources that are valuable, rare, inimitable, and non-substitutable (VRIN). However, previous studies often treat leadership, CSR, and HRM as independent managerial practices rather than as strategic resources capable of generating sustainable competitive advantage. The integration of these constructs with RBV principles, particularly in the context of developing economies' hospitality sectors, remains underexplored. Many hotels have yet to optimise their human, social, and organisational resources to achieve innovation aligned with sustainability goals. This gap highlights the need to examine whether TL and CSR, supported by GHRM, can function as VRIN resources that drive sustainability-based innovation (SBI), especially within emerging-market contexts such as Indonesia's hospitality industry.

2. Literature Review

RBV serves as the fundamental theory underlying this research. Originally introduced by Birger Wernerfelt (1984), RBV focuses on a company's internal resources and analyses strategic options arising from their effective utilisation. Within this framework, TL emphasises leveraging company resources to drive fundamental changes in individuals and teams. It prioritises inspiration, vision, motivation, and individual development as core elements for achieving higher organisational goals (Pamungkas et al., 2024). This leadership style is characterised by idealised influence, inspirational motivation, intellectual stimulation, and individualised consideration (Northouse, 2025). Through these dimensions, transformational leaders can foster sustainable business model innovation by inspiring change, developing a long-term vision, and embedding sustainability values in all organisational operations (Berliandika et al., 2021). Although RBV traditionally emphasises tangible assets, debates persist regarding the inclusion of intangible and human-centred resources such as leadership and organisational culture. Critics argue that RBV overlooks the dynamic and behavioural dimensions essential for sustainability-oriented innovation. However, recent perspectives suggest that leadership and human capital can be considered VRIN resources when they generate trust, culture, and employee commitment that are difficult to imitate. Thus, TL acts as a dynamic capability that mobilises and transforms organisational resources towards SBI.

Companies can further strengthen their sustainability orientation through CSR. CSR encompasses processes, practices, and policies aimed at identifying and responding to stakeholder needs to ensure business continuity (Doli and Ghazali, 2024). It reflects responsibility towards employees, customers, suppliers, communities, and the environment (Awa et al., 2024), fulfilling moral and ethical obligations to stakeholders (Wirba, 2024). Within the RBV logic, CSR develops reputational capital and stakeholder trust, which enhance competitiveness and legitimacy, though findings remain context-dependent.

Aligned with CSR, GHRM promotes HR practices oriented towards environmental sustainability (Fadhil, 2025). By implementing GHRM, firms demonstrate commitment to sustainability and balance stakeholder interests (Parashakti et al., 2024). Moreover, TL strengthens GHRM through a long-term sustainability vision and inspiration (Mardikaningsih, 2025).

The original contribution of this study lies in integrating TL, CSR, and GHRM within the RBV framework, an area still underexplored, particularly in developing countries. Together, these soft resources form VRIN-based capabilities that drive SBI, extending RBV theory to include human and relational capital.

2.1 *The influence of transformational leadership on sustainable business innovation*

One of the key elements in promoting sustainable business innovation is the presence of a leader who can effectively influence subordinates and actively engage them in achieving organisational goals through an appropriate leadership style (Daratista et al., 2023). The transformational leadership style is widely recognised as a crucial factor in driving sustainable innovation (Sembiring et al., 2023). Transformational leaders are inspiring, thoughtful, charismatic, and intellectually stimulating (Simic et al., 2025). They create an organisational atmosphere that encourages creativity and innovation. Such

leaders often develop an inspiring vision that motivates employees to think creatively and explore new approaches to problem-solving (Alhitmi et al., 2023). Leaders must be capable of managing and innovating within their organisations to ensure competitiveness and long-term business continuity. Leadership is believed to influence employee attitudes and behaviours, shaping an organisational environment that supports environmentally friendly activities. In this context, sustainable business innovation becomes an important contributor to sustainable development (Velter et al., 2022). These innovations promote environmental conservation by integrating social and environmental issues into the company's core innovation strategy (Bocken and Geradts, 2020), thereby reducing reputational risks and enhancing transparency in organisational activities (MacMillan, 2020). Moreover, sustainable innovation has the potential to generate new revenue streams for companies and lower overall operating costs (Weidnerand and Zhu, 2021), while also strengthening organisational resilience and reputation (Dhir et al., 2023). Through these efforts, companies can stay ahead in addressing stakeholder expectations and sustainability concerns (Fobbe and Hilletoth, 2021), thus fostering the development of sustainable business innovation (Fiore et al., 2020). Therefore, it can be argued that transformational leadership acts as a key enabler of sustainable business innovation by fostering creativity, encouraging proactive behaviour, and aligning employees with long-term sustainability goals.

H1: Transformational Leadership has a positive and significant influence on Sustainable Business Innovation.

2.2 The influence of corporate social responsibility on sustainable business innovation

CSR is a strategy adopted by companies as a form of social and environmental responsibility aimed at achieving sustainable growth (Lopez et al., 2022). CSR is one of the key elements influencing Sustainable Business Innovation in the long term (Cahyadi et al., 2025). Companies increasingly recognise that CSR is not merely an option but a necessity for fostering sustainable innovation. By committing to social responsibility, companies contribute to the welfare of society and their stakeholders, while also ensuring long-term benefits for all parties involved (Wu and Jin, 2022). To gain competitive and innovative advantages, companies must implement comprehensive environmental sustainability plans, such as fulfilling legal obligations and meeting shareholder expectations (Tu and Wu, 2021). Consequently, CSR practices generate various positive impacts on organisations (Uyun et al., 2024), including improving the quality of life for employees and local communities, which in turn benefits both business performance and social development (Zheng et al., 2022). Research has shown that companies focusing on CSR and environmentally friendly practices tend to achieve better sustainability outcomes, supported by an innovation-oriented and environmentally conscious workforce (Danish et al., 2024). Moreover, CSR initiatives enhance corporate reputation and strengthen relationships with stakeholders. Voluntary disclosure of sustainability activities can improve corporate image and boost investor confidence (Al-Adeem, 2024). Through effective CSR implementation, companies can enhance performance, build public trust, and ultimately contribute to Sustainable Business Innovation (Ekasari and Noegroho, 2020).

H2: Corporate Social Responsibility has a positive and significant influence on Sustainable Business Innovation.

2.3 Green Human Resource Management moderates the influence of Transformational Leadership on Sustainable Business Innovation.

GHRM and TL are two strategic components that together shape an organisation's capacity for SBI (Pamungkas et al., 2024). In today's era of environmental uncertainty, TL serves as the driving force that inspires change, encourages creativity, and promotes sustainability-oriented behaviours (Zhu et al., 2022). However, the extent to which TL can effectively foster innovation largely depends on the organisational context, particularly the strength of its GHRM practices.

GHRM acts as a contextual enabler that determines whether transformational leadership can translate its vision and motivation into concrete sustainability-oriented innovations (Yafi et al., 2021). When GHRM practices such as green recruitment, green training, and environmentally based reward systems are well implemented, employees are more receptive to leaders' sustainability visions and more motivated to engage in innovative green initiatives (Klaic et al., 2020; Fadhil, 2025). Conversely, when

GHRM practices are weak, even transformational leaders may struggle to mobilise employees towards environmental innovation because their values, competencies, and incentives are misaligned with sustainability goals (Özgül and Zehir, 2022).

In this context, GHRM does not function as a mechanism through which TL directly influences SBI, but rather as a situational factor that strengthens or weakens the leadership's impact on innovation. Organisations with strong GHRM systems provide the necessary support and alignment for leaders to effectively foster sustainability-oriented innovation, while those lacking such systems limit the realisation of transformational leadership's potential. Therefore, GHRM serves as a moderating variable that amplifies the positive effect of transformational leadership on sustainable business innovation.

H3: Green Human Resource Management moderates the influence of Transformational Leadership on Sustainable Business Innovation.

2.4 Green Human Resource Management moderates the influence of Corporate Social Responsibility on Sustainable Business Innovation

GHRM is regarded as one of the most important indicators of an organisation's adoption of green trends, as it influences all aspects of organisational operations (Aboramadan and Karatepe, 2021). Human resource management practices such as recruitment, training, performance management, and employee retention play a vital role in supporting CSR initiatives (Krisna and Emilia, 2023). CSR reflects a company's commitment to conducting business ethically and responsibly by considering the impact of its operations on society, the environment, and stakeholders (Helfaya and Aboud, 2023). However, the effectiveness of CSR in fostering SBI largely depends on internal systems that translate CSR values into daily actions.

In this context, GHRM serves as a contingent factor that determines the strength of the CSR–SBI relationship. When GHRM practices are well established through green recruitment, training, and performance management, employees are more likely to internalise CSR values and contribute to innovation aligned with sustainability goals (Ojo et al., 2020; Hong et al., 2024). Conversely, when GHRM practices are weak, CSR activities may remain symbolic and fail to produce meaningful innovation outcomes (Hameed et al., 2022). Thus, GHRM strengthens the alignment between CSR initiatives and innovation outcomes by creating an environment that encourages pro-environmental behaviour and sustainable thinking among employees.

H4: Green Human Resource Management moderates the influence of Corporate Social Responsibility on Sustainable Business Innovation.

For ease of understanding, the conceptual framework of this study is illustrated in Figure 1.

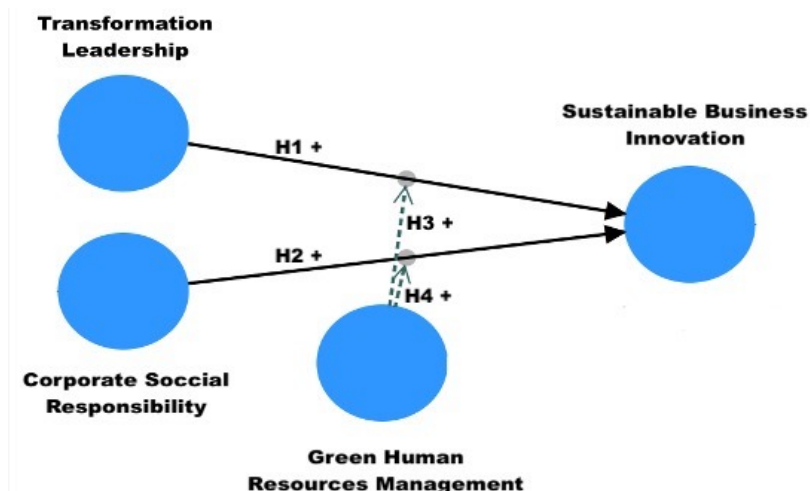


Figure 1. Research Framework

Source: Authors' elaboration (2025)

3. Methodology

The Transformational Leadership variable was adopted from Zhao and Huang, (2022) the Corporate Social Responsibility variable was adopted from Zhao et al., (2019), the Green Human Resource Management variable was adopted from Singh et al., (2020), and the Sustainable Business Model Innovation variable was adopted from Ulvenblad et al., (2019) and subsequently modified by the researchers.

The study was conducted in hotel companies located in the Special Region of Yogyakarta, Indonesia, with a total population of 5,445 employees (Bapperida.jogjaprovo.go.id, 2025). This study employed a non-random sampling approach, with the sampling technique used being non-probability purposive sampling, based on specific inclusion and exclusion criteria (1) The hotel must be classified as a star-rated hotel; (2) The hotel must be located within the Special Region of Yogyakarta, Indonesia; (3) The hotel must have a stable average occupancy rate; (4) Participants must be employees who interact directly with customers; and (5) Participants must express willingness to take part in the data collection process.

The sample size was determined using the Slovin formula, with a 95% confidence level and a margin of error of 0.05 (Majdina et al., 2024), The calculation results are as follows:

Slovin's formula:

$$n = \frac{N}{1 + (N \times e^2)}$$

n= Number of Samples

N= Population

e = the margin of error or the allowable inaccuracy level due to tolerable sampling error, expressed in squared form.

Based on the Slovin formula, the sample size for this study is calculated as follows:

$$n = 5.445 / (1 + (5.445 \times 0,05^2)$$

$$n = 5.445 / (1 + (5.445 \times 0.0025))$$

$$n = 5.445 / (1 + 13.6125)$$

$$n = 5,445 / 14.6125$$

$$n = 379.46963216 = 380$$

The sample size in this study consisted of 380 employees from various hotels in the Special Region of Yogyakarta, Indonesia.

Operational definitions specify how theoretical variables are measured through observable indicators, aiming to ensure clarity, consistency, validity, and replicability in the research measurement process.

Table 1. Definition of Variables, Research Variable Indicators and Measurement Scales

Variables	Operational Definition	Indicator
Transformation Leadership (TL)	This approach emphasizes how leaders inspire and motivate followers to align their personal goals with organizational objectives, ultimately driving performance beyond expectations (Greimel et al., 2023)	<ol style="list-style-type: none"> 1. Sustainable business plan. 2. Sustainable business vision. 3. Driving sustainable business plans. 4. Achieving sustainable business. 5. Sustainable business beliefs 6. Eco-friendly ideas.
Corporate Social Responsibility (CSR)	A strategic approach adopted by companies as an expression of their social responsibility toward the environment and society, aimed at promoting sustainable growth (Lopez et al. 2022)	<ol style="list-style-type: none"> 1. Harmony and prosperity 2. Welfare of vulnerable groups. 3. Donate 4. Salary and insurance payments. 5. Career development 6. Creating a good working environment. 7. Discloses complete operating information. 8. Comply with laws and regulations.

Variables	Operational Definition	Indicator
		9. Protection of property rights 10. Actively participate in social activities. 11. Environmentally friendly technology and materials. 12. Improving resource utilization 13. Providing products and services at reasonable prices. 14. Forming communication channels. 15. Protection of customer information
Green Human Resource Management (GHRM)	A strategic approach that embeds sustainability principles into human resource management functions, including green recruitment, environmentally focused training, and performance management based on sustainability criteria (Khairunnisa and Ratnawati, 2024).	1. Choose the right person. 2. have environmental values. 3. Green staffing process 4. Mandatory environmental training 5. Improve employee environmental skills & knowledge. 6. Using environmental training in the workplace 7. Performance assessment records environmental performance. 8. Performance assessments cover environmental incidents, responsibilities, concerns, and policies. 9. Rewards for environmental management. 10. Competency acquisition rewards 11. Get involved in being environmentally friendly. 12. Teamwork solves environmental problems. 13. Discussing problems in team meetings.
Sustainable Business Innovation (SBI)	A widely studied and applied concept that emphasizes the creation, communication, delivery, and capture of value to support long-term organizational sustainability. (Jorzik et al., 2024)	1. Conserving resources to reduce emissions, pollution and waste. 2. Simplifying the value chain (production and transportation). 3. Optimal use of materials. 4. Recycle waste. 5. Actively recycle waste. 6. Reuse spilled and waste materials. 7. Reducing environmental impact 8. Using renewable energy sources or natural processes to reduce waste. 9. Increase financial profits. 10. Fulfilling user needs without owning a physical product. 11. Maintain close relationships with partners. 12. Customers pay for the service and do not take ownership of the product. 13. Ensuring the long-term health and well-being of employees. 14. Activities with partners focused on health and well-being 15. Actively ensuring long-term health and well-being. 16. Offering sustainable products and services. 17. We and our partners focus on recycling. 18. Educating the public about sustainable products. 19. Contributing to sustainable environmental impact. 20. Focus on social and environmental creation through non-traditional relationships. 21. Focus on providing social and environmental benefits 22. Developing sustainable solutions. 23. Collaborate with partners to develop and deliver sustainable solutions. 24. Using a franchise or license.

Source: Authors' elaboration (2025)

Structural Equation Modelling (SEM) using Partial Least Squares (PLS) is a multivariate statistical method used to test a series of relationships among variables, estimated simultaneously for predictive studies, structural model development, or theoretical exploration (Hair et al., 2021). A measurement

scale of 1–5 was used. SEM-PLS does not require specific distributional assumptions, can accommodate complex models, and is particularly suitable for studies aiming to test model theories with a focus on prediction, model development, or exploration (Hair et al., 2021). This analytical approach has greater potential to provide detailed findings and deeper insights (Magno et al., 2022). Reliability is tested by examining Cronbach's alpha and Composite Reliability (CR) values, both of which should be ≥ 0.70 (Hair et al., 2021). For reflective indicators, convergent validity is assessed using the Average Variance Extracted (AVE), which should exceed 0.50 (Hair et al., 2021). Discriminant validity is tested through the Heterotrait-Monotrait Ratio (HTMT), with recommended values below 0.90 (Hair et al., 2021). Hypothesis testing is based on the t-statistic (≥ 1.96) and p-value (< 0.05) criteria (Al-Kassab, 2022). Model evaluation includes assessing the Goodness of Fit Index, Standardised Root Mean Square Residual (SRMR), PLS Predict, R-square (R^2), Q-square (Q^2), and the overall model fit (Hair et al., 2021).

4. Results

In the results section, the discussion covers the respondents' demographics, along with the analysis of the outer and inner models.

The respondent profile outlines the demographic characteristics of research participants to ensure sample relevance, support data interpretation, and validate the representativeness of respondents within the research context. According to Table 2, 256 male respondents (67.37%) completed the questionnaire, along with 187 respondents aged 31–40 years (49.21%), 188 respondents with a high school or vocational high school education (49.47%), and 143 respondents working in the engineering division (37.63%).

Table 2. Respondent Profile

Respondents	Amount	Percentage (%)
Sex		
Man	256	67.37
Woman	124	32.63
Age		
18 – 30 Years	50	13.16
31 – 40 Years	187	49.21
41 – 50 Years	126	33.16
>51 Years	17	4.47
Level of education		
High School/Vocational High	188	49.47
School or Equivalent	119	31.32
Diploma	72	18.95
Undergraduate	1	0.26
Division of Work		
Engineering	143	37.63
Housekeeping	21	5.53
Human resources	38	10.00
Front office	56	14.74
Accounting	2	0.53
Food and beverage	24	6.32
Sales and marketing	27	7.11
Manager	64	16.84
Owner	1	0.26
Chief engineer	1	0.26
Chief accounting	1	0.26
Admin	2	0.53
Total	380	100.00

Source: Authors' elaboration (2025)

4.1 Outer model analysis

Convergent validity in the measurement model with reflective indicators is evaluated based on the loading factor values of each indicator. A loading factor is considered acceptable when it exceeds 0.70,

indicating that the indicator has a strong correlation with the latent construct. Conversely, indicators with loading factor values below 0.70 are removed to enhance the statistical validity of the model (Sarstedt et al., 2025). Table 4 presents the results of the loading factor analysis.

The loading factor values in Appendix A indicate that a total of 14 indicators are not eligible and are considered invalid because they have values below 0.70. In the first Outer Loading test, 12 indicators were identified as invalid due to loading factor values below 0.70, namely X2.1, X2.2, X2.4, Z.1, Z.2, Y.1, Y.2, Y.3, Y.12, Y.13, Y.15, and Y.24. After conducting the second Outer Loading test, two additional indicators were found to be invalid, namely X2.3 and Y.14. Based on the results of Iteration 3, all indicators achieved loading factor values above 0.70, indicating that all remaining indicators are valid and suitable for further analysis.

Reliability and convergent validity tests ensure measurement consistency and accuracy, confirming that indicators consistently represent the same construct and strongly correlate to measure the intended theoretical concept. Table 3 presents the results for Cronbach's Alpha, Composite Reliability, and Average Variance Extracted (AVE) values, all indicating that each construct variable meets the criteria for reliability and validity.

Table 3. Cronbach's alpha, composite reliability and average variance extracted

Variables	Cronbach's alpha	Composite reliability (rho _a)	Average variance extracted (AVE)	Results
TL (X1)	0.882	0.889	0.627	Valid & Reliable
CSR (X2)	0.930	0.931	0.589	Valid & Reliable
GHRM (Z)	0.951	0.952	0.671	Valid & Reliable
SBI (Y)	0.960	0.961	0.626	Valid & Reliable

Source: Authors' elaboration (2025)

The discriminant validity test confirms that each construct within the research model measures a unique concept, ensuring clear distinction and non-overlapping relationships among all measured constructs. Table 4 presents a comparison between the square root of the Average Variance Extracted (AVE) and the correlation values among the construct variables, showing that the square root of each construct's AVE is greater than its correlations with other constructs. Therefore, the results of the discriminant validity test based on the Fornell-Larcker criterion indicate that all latent constructs have acceptable discriminant validity.

Table 4. Test results discriminant validity

Variables	TL (X1)	CSR (X2)	GHRM (Z)	SBI (Y)
TL (X1)	0.767			
CSR (X2)	0.705	0.819		
GHRM (Z)	0.619	0.698	0.791	
SBI (Y)	0.679	0.655	0.515	0.792

Source: Authors' elaboration (2025)

The Heterotrait-Monotrait Ratio of Correlations (HTMT) is used to assess discriminant validity, ensuring that each construct in the PLS-SEM model measures a distinct concept.

Table 5. Test results of HTMT

Variables	TL (X1)	CSR (X2)	GHRM (Z)	SBI (Y)	GHRM (Z) x TL (X1)	GHRM (Z) x CSR (X2)
TL (X1)						
GHRM (Z)	0.749					
SBI (Y)	0.646	0.725				
TL (X1)	0.748	0.707	0.542			
GHRM (Z) x TL (X1)	0.440	0.510	0.368	0.489		
GHRM (Z) x CSR (X2)	0.474	0.472	0.366	0.449	0.923	

Source: Authors' elaboration (2025)

Table 5 shows that most HTMT values are below the 0.90 cut-off, indicating that discriminant validity is generally achieved. However, the construct pairs GHRM (Z) × CSR (X2) and GHRM (Z) × TL (X1)

have HTMT values that slightly exceed this threshold. This minor deviation is considered acceptable and does not indicate a serious issue with discriminant validity, as other validity assessments, such as the Fornell-Larcker criterion and cross-loadings, confirm that each construct maintains adequate conceptual distinctiveness. Therefore, the model's discriminant validity is considered acceptable overall.

4.2 Inner model analysis

In this inner model analysis section, the discussion focuses on the Goodness of Fit Index and hypothesis testing. In Table 6, the SRMR result of 0.060 indicates that the model meets the criteria for a good fit, as the SRMR value is less than 0.08. The d_ULS confidence interval value of 3.584 also satisfies the model fit criteria, while the d_G value of 1.643 with a confidence level of $P \geq 0.05$ further confirms the model's good fit.

Table 6. Goodness of fit index

Indicator	Criteria	Mark	Results
SRMR	Model Fit if ≤ 0.08 Still acceptable if 0.08-0.10	0.060	Fit
d_ULS	Acceptable if ≥ 0.95	3,584	Fit
d_G	Acceptable if $P \geq 0.05$	1,643	Fit
Chi-Square	Approaching zero	3286.480	Fit
NFI	Worth 0-1	0.780	Fit
R-Square	Low influence (0.25) Moderate influence (0.50)	0.513	Moderate
Adjusted	High influence (0.75)		
Q-Square	Low influence (0) Moderate influence (0.25) High influence (0.50)	0.503	High Influence
GoF Index	Low influence (0.1) Moderate influence (0.25) High influence (0.36)	0.519	High Influence

Source: Authors' elaboration (2025)

The NFI value ranges from 0 to 1, with values closer to 1 indicating a better model fit. The NFI value of 0.780 therefore suggests that the proposed model demonstrates a satisfactory level of fit.

The coefficient of determination (R-squared) reflects the extent to which the endogenous constructs are explained by the exogenous constructs. According to Chicco et al. (2021), R-squared values of 0.75, 0.50, and 0.25 represent strong, moderate, and weak levels of explanatory power, respectively. The obtained R-squared value of 0.513 indicates a moderate level of influence, suggesting that the model has adequate predictive ability.

Furthermore, the Q-Square value of 0.503 demonstrates high predictive relevance, and the Goodness of Fit (GoF) index value of 0.519 indicates a high level of model fit and overall validity.

This hypothesis testing was conducted to determine the probability values, t-test results, and path coefficient (β), in order to identify and interpret the outcomes of the hypotheses.

Table 7. Hypothesis test results

Correlation	Standard deviation (STDEV)	Path Coefficient (β)	T statistics	P values	Results
TL (X1) \rightarrow SBI (Y)	0.058	0.015	0.215	0.790	Not Significant
CSR (X2) \rightarrow SBI (Y)	0.067	0.224	3,597	0.001	Significant
GHRM (Z) x TL (X1) \rightarrow SBI (Y)	0.042	0.028	0.686	0.511	Not Significant
GHRM (Z) x CSR (X2) \rightarrow SBI (Y)	0.045	-0.027	0.647	0.533	Not Significant

Source: Authors' elaboration (2025)

The analysis results show that variable X1 has a very weak positive influence on Y ($\beta = 0.015$), while variable X2 has a stronger positive influence on Y ($\beta = 0.224$). Moderation analysis indicates that variable Z strengthens the relationship between X1 and Y ($\beta = 0.028$), although the effect is relatively small. In contrast, the interaction between X2 and Z has a negative coefficient ($\beta = -0.027$), indicating that Z weakens the influence of X2 on Y. Thus, Z acts as a differential moderator, strengthening the X1–Y relationship but weakening the X2–Y relationship. Despite the opposite signs of the interaction

coefficients, both moderating effects are not statistically significant, indicating a lack of empirical support for the moderating role of GHRM in this model (Figure 2).

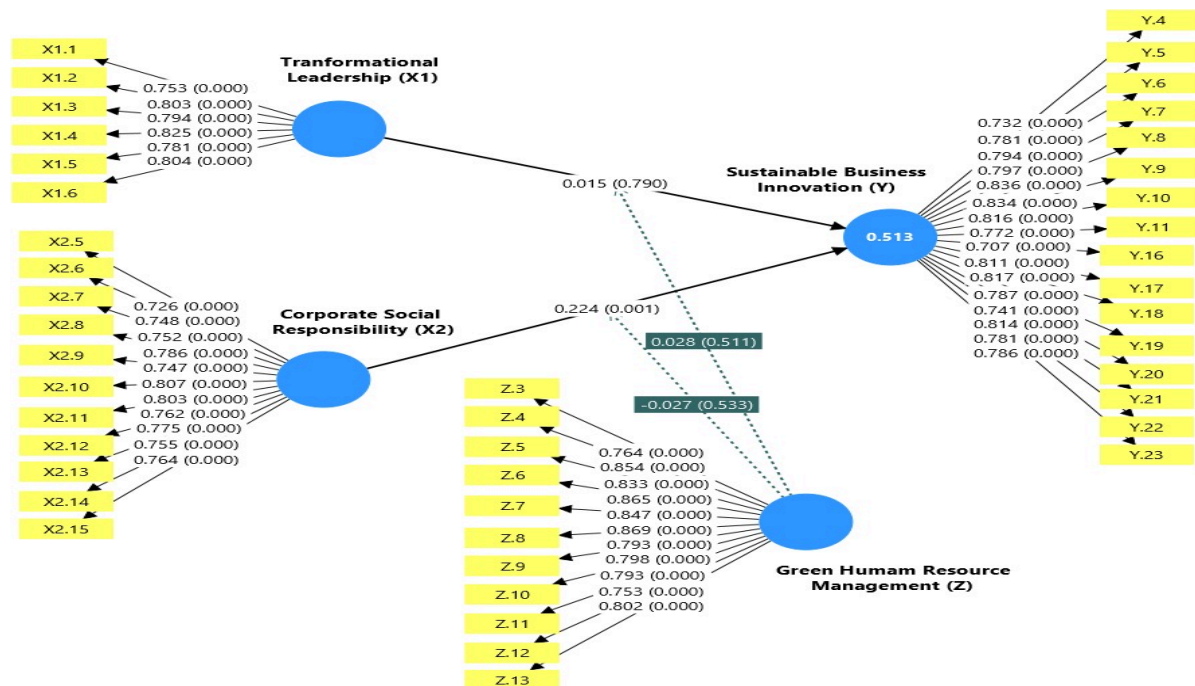


Figure 2. Structural model results

Source: Self-developed based on SmartPLS calculations (2025)

Table 7 presents the results of the direct effect test as follows. The t-statistic between TL and SBI is $0.215 < 1.96$, with a p-value of $0.790 > 0.05$. This indicates that TL does not have a significant effect on SBI. The t-statistic between CSR and SBI is $3.597 > 1.96$, with a p-value of $0.001 < 0.05$. Therefore, CSR has a positive and significant effect on SBI. Furthermore, the t-statistic for GHRM as a moderating variable between TL and SBI is $0.686 < 1.96$, with a p-value of $0.511 > 0.05$. This means that GHRM does not significantly moderate the relationship between TL and SBI. Similarly, the t-statistic for GHRM moderating the relationship between CSR and SBI is $0.647 < 1.96$, with a p-value of $0.533 > 0.05$. Thus, GHRM also does not moderate the effect of CSR on SBI. Based on the β results, it can be interpreted that among the four hypothesised relationships, the strongest influence is exerted by CSR on SBI, as evidenced by the path coefficient value of 0.224.

5. Discussion

5.1 Transformational Leadership has no effect on Sustainable Business Innovation

The first finding reveals that hotel leaders lack confidence in effectively implementing sustainable business practices. This is reflected in the lowest mean score on indicator X1.5, “The leadership shows confidence that the company’s sustainable business can run well.” The uncertainty among hotel leaders arises from both internal and external challenges, as well as the shift from short-term profit orientation to long-term value creation (Adiwijaya, 2024). Many leaders in the hospitality sector remain doubtful about the success of sustainability initiatives, as they face strong pressure to achieve short-term financial targets (Muhammad et al., 2025). Some investors also prioritise quick returns while paying limited attention to the social and environmental dimensions that underpin sustainable hospitality (Maharani and Bayangkara, 2025). This short-term focus makes it difficult for leaders to convince stakeholders that environmentally and socially responsible practices can be both ethical and profitable in the long run (Alfatiha et al., 2022). From the RBV perspective, leadership confidence and sustainability-oriented capabilities represent strategic internal resources that must be developed to create long-term competitive advantage. When leaders lack vision or strategic alignment, the organisation’s valuable, rare, inimitable, and non-substitutable (VRIN) resources, such as knowledge, culture, and human capital, are underutilised. This weakens the company’s ability to transform these resources into sustainable

innovation. Thus, leadership confidence is not merely a behavioural issue but a reflection of how effectively internal resources are mobilised and integrated to achieve sustainability goals.

A sustainable hotel business has become a strategic necessity for balancing economic, environmental, and social performance. Adopting a sustainability-driven innovation approach enables hotels to improve efficiency, comply with environmental regulations, and build customer loyalty. Based on the Triple Bottom Line framework, which integrates economic, social, and environmental pillars, this approach strengthens resilience and competitiveness in the hospitality sector (Puspitasari et al., 2025). Hotel leaders are encouraged to adopt global best practices, participate in benchmarking, and commit to a long-term sustainability vision aligned with social responsibility (Ardiana, 2022). This transformation requires collaboration among stakeholders – employees, customers, and partners – to co-create sustainable value. Leaders with a long-term mindset and systems thinking are better positioned to foster creativity, innovation, and cultural transformation towards sustainability (Cuevas-Vargas et al., 2023). Although transformational leadership theoretically supports sustainability-oriented innovation, its insignificant path to sustainability-based innovation indicates that effective change requires supportive systems, culture, and organisational readiness as complementary strategic resources.

5.2 Corporate Social Responsibility has a positive and significant influence on Sustainable Business Innovation

The second finding indicates that hotel companies exhibit a high level of compliance with laws and regulations. This is evidenced by the highest mean score for indicator X2.8, “My company complies with laws and regulations”. However, corporate social responsibility extends well beyond legal compliance. It reflects a company’s ethical commitment to exceed legal requirements, such as reducing carbon emissions, supporting charitable programmes, and ensuring fair and safe working conditions for employees (Adrai and Perkasa, 2024). Compliance itself generates long-term positive impacts on sustainability and reputation (Bitencourt et al., 2024). By adhering to legal standards, hotel companies can avoid sanctions, penalties, and reputational risks, thereby creating a stable and trustworthy business environment. Companies that maintain strong compliance practices are perceived as having integrity and good governance, earning greater trust from customers, business partners, and investors (Kurniawan and Putra, 2025). From an institutional perspective, compliance also improves relationships with government and regulators, facilitating licensing, partnerships, and collaboration (Zaenudin et al., 2025). Internally, regulatory adherence standardises hotel operations, minimises employee conflict, and fosters transparency in decision-making. Collectively, these practices enhance operational sustainability and contribute to fair competition within the hospitality sector (Hadiwibowo and Purwanti, 2024). Within the resource-based view framework, CSR can be understood as a strategic internal capability that provides sustainable competitive advantage. When effectively implemented, CSR becomes a valuable, rare, inimitable, and non-substitutable organisational resource because it strengthens intangible assets such as brand reputation, stakeholder trust, and employee commitment. These intangible resources are difficult for competitors to imitate and thus enhance long-term business performance. CSR also helps organisations mobilise internal resources – human capital, knowledge, and innovation – to create unique value aligned with sustainability goals.

Empirical findings indicate that CSR has a positive and significant impact on sustainable business innovation (Saputra et al., 2024). Through CSR, hotel companies integrate social and environmental goals with profitability objectives (Sabolak and Zebua, 2024). CSR-driven initiatives, such as energy conservation, waste management, community empowerment, and ethical supply chain practices, often serve as sources of innovation that lead to environmentally responsible and socially inclusive business models (Dzage et al., 2024). Moreover, CSR enhances reputation, customer loyalty, and investor interest in sustainability-oriented companies (Inekwe et al., 2020). For example, hotels that support education, health, and environmental programmes tend to gain stronger community support, increasing operational stability and reducing social risks (Qu et al., 2022). These practices foster adaptability, cross-sector collaboration, and a long-term investment mindset– key drivers of sustainable innovation (Anugerah, 2024). When CSR is embedded in organisational culture, it nurtures innovation, strengthens corporate values, builds collaborative networks, and motivates employees. Thus, CSR represents an enduring business commitment to ethical conduct and sustainable development, improving the quality of life for employees, their families, and communities (Aviatri and Nilasari, 2021).

5.3 Green Human Resource Management does not moderate the influence of Transformational Leadership on Sustainable Business Innovation.

The third finding indicates that hotel leaders lack confidence in the success of sustainable business initiatives because rewards for competent employees are not aligned with their contributions. This is evident in the lowest mean scores for indicators X1.5, “The leadership shows confidence that the company’s sustainable business can run well”, and Z.10, “My company provides rewards when increasing competence”. When leaders do not value sustainability and employees feel their efforts are undervalued, motivation and productivity decline (Rahmawati et al., 2024). Competent employees who are not properly rewarded may become discouraged, resulting in lower engagement and weaker organisational performance (Wisanggeni et al., 2024). Such imbalance can also create an unhealthy work environment, increase stress levels, and trigger internal conflicts within hotel organisations (William, 2025). Furthermore, unfair reward distribution can increase turnover among high-performing employees who seek fairer opportunities elsewhere (Wijono et al., 2025). Competent human resources are essential for supporting long-term business sustainability. If these employees are neglected, strategic decisions become less effective and may harm the company’s reputation and growth (Hammadi et al., 2025). Therefore, the success of a sustainable business depends on management’s ability to recognise and reward employee competence fairly, fostering a productive and supportive work climate (Jo and Shin, 2025).

In this study, GHRM was expected to strengthen the relationship between TL and SBI. However, the moderating effect of GHRM was found to be statistically insignificant. Although GHRM integrates environmental principles into HR practices such as green recruitment, environmental training, and sustainability-based evaluations (Jatiwardani et al., 2025), its implementation in many hospitality companies remains weak. Often, GHRM policies are driven by external pressures (e.g. regulations or global expectations) rather than internal strategic commitment (Kholifatunnisa et al., 2025). Additionally, these policies are not effectively communicated or consistently applied across organisational levels (Chreif and Farmanesh, 2022).

From a theoretical perspective, the insignificance of GHRM’s moderating effect can be explained through the RBV framework (Wernerfelt, 1984). Although GHRM conceptually represents a valuable internal capability that should enhance leadership-driven innovation, in practice it has not yet achieved the VRIN characteristics required to generate strategic advantage. This is because the integration of GHRM in many hotels is still at a policy or compliance level, rather than being deeply embedded as an organisational culture or dynamic capability that transforms leadership vision into operational behaviour. In RBV terms, resources that are not institutionalised and synergised with other capabilities—such as leadership and innovation systems—cannot produce sustained competitive advantage.

Moreover, TL tends to rely on intrinsic motivation and cultural transformation, while GHRM operates through structured systems and procedural mechanisms. When these two forces are not aligned, the moderating synergy is weak. Instead of reinforcing leadership influence, GHRM functions more as an administrative formality than as a strategic enabler of innovation (Amini, 2025). This theoretical tension explains why the moderation effect does not appear statistically significant: the cultural influence of leadership and the systemic influence of HRM may run in parallel but do not interact dynamically.

From the RBV perspective, this finding implies that GHRM, though conceptually a valuable internal resource, has not yet evolved into a strategic dynamic capability within hotel organisations. The failure to fully internalise GHRM principles means that human capital, one of the core strategic resources, remains underutilised. Consequently, leadership alone cannot drive sustainable innovation without support from a well-integrated, sustainability-focused HR system. To maximise RBV potential, hotels must institutionalise GHRM as a strategic capability that enhances employee competence, motivation, and innovation capacity, ensuring that sustainability efforts are embedded within the organisation’s long-term value creation process (Rajagukguk et al., 2025).

5.4 Green Human Resource Management does not moderate the influence of Corporate Social Responsibility on Sustainable Business Innovation

The fourth finding indicates that hotel companies have not adequately supported employee career development, even though many employees are becoming more competent. This is reflected in the lowest mean scores for indicators X2.5, “My company encourages employees to develop their careers”, and Z.10, “My company provides rewards for increasing competence”. The lack of managerial support for career growth, despite rising competence levels, risks motivational stagnation and reduced productivity (Precellas and Bauyot, 2025). According to RBV theory, human resources are strategic assets that can provide a sustainable competitive advantage when they are valuable, rare, inimitable, and well-organised. However, without structured development programmes such as training, coaching, job rotation, or advanced education, employees’ competencies may not become valuable organisational resources (Wibowo et al., 2024). Career development extends beyond technical skills– it also offers opportunities for employees to apply and expand their competencies in more meaningful roles (O'Brien and Woody, 2025). When hotels neglect this process, capable employees may feel their career progress is blocked, leading to job dissatisfaction and higher turnover intentions (Puspitasari et al., 2025). To align with RBV principles, hotel management must invest in personalised and continuous development programmes that nurture employees’ potential and align with organisational objectives (Khaeruman and Maryam, 2025).

Furthermore, recognising and rewarding competent employees is essential for maintaining motivation and retaining key talent. Hotels should establish structured and sustainable recognition systems with transparent criteria and a combination of financial (e.g. bonuses, promotions) and non-financial rewards (e.g. “Best Employee” awards, certificates, or advanced training opportunities) tailored to employee preferences (Deeksha and Mishra, 2025; Yani and Whardana, 2025). Consistent recognition increases engagement and fosters a positive work culture, ultimately improving retention and productivity (Afridah et al., 2025). Continuous evaluation of reward and recognition systems is also necessary to ensure fairness and sustainability (Sulistriarini and Ismail, 2025). In the relationship between CSR and SBI, the moderating role of GHRM was found to be statistically insignificant. Although GHRM aims to promote sustainable practices (Qershi et al., 2023), its effect remains weak because hotels overlook employee motivation and career development (Yi et al., 2025). Weak management commitment and an unsupportive organisational culture further hinder effective implementation (Budiono et al., 2025), leading to employee apathy towards sustainability programmes (Elshaer et al., 2025). However, with strong leadership commitment and standardised procedures, green initiatives can be more inclusive and effective (Pancić et al., 2023).

6. Conclusions

This study confirms that TL does not have a significant effect on SBI in the hospitality industry in Yogyakarta. This finding highlights a misalignment between leaders’ strategic vision and the management of internal resources, particularly in optimising human capital as a strategic resource that is valuable, rare, inimitable, and non-substitutable. From the RBV perspective, this condition indicates a weakening of the role of leadership and human capital as VRIN assets, which should serve as the primary foundation for building sustainable competitive advantage. In practice, this situation leads to low talent retention, erosion of organisational culture, and stagnation of green transformation, thereby increasing corporate reputational risk in the ESG era. Conversely, CSR demonstrates a positive and significant influence on SBI. CSR functions as a strategic internal capability that strengthens intangible assets such as brand reputation, stakeholder trust, and employee commitment. When effectively integrated into organisational culture, CSR becomes a driver of sustainable innovation by enhancing employee participation, reinforcing environmental values, and strengthening long-term strategic orientation aligned with sustainability principles. However, GHRM is not proven to significantly moderate the relationships between TL–SBI and CSR–SBI. This finding indicates that GHRM has not yet been institutionalised as a strategic VRIN resource and is still unable to transform sustainability values into operational excellence. The absence of fair reward systems, sustainability-oriented career pathways, and consistent leadership support weakens the role of GHRM as a catalyst for innovation.

Theoretically, this study enriches the RBV by emphasising that sustainable innovation and competitive advantage are determined not only by resource ownership but also by the degree of strategic alignment, functional integration, and dynamic utilisation of these resources within the organisational system. In practice, hotel managers are urged to strengthen GHRM capabilities through the development of green competencies, sustainability-based incentive systems, and the revitalisation of leadership roles so that human capital can truly function as a driving force for sustainable business innovation.

The practical implications are as follows: (1) Low Talent Retention: Competent employees are likely to seek employment with organisations that value their contributions and offer career advancement opportunities. This leads to high turnover, increased recruitment and training costs, and potential loss of knowledge. (2) Erosion of Organisational Culture: Inequity in reward and recognition systems fosters apathy and cynicism, undermining morale, collaboration, and overall team productivity. (3) Failure of Green Transformation: Sustainability initiatives require employee motivation, innovation, and participation. Without sufficient support and engagement, green programmes remain superficial slogans rather than actionable strategies. (4) Reputational Risk in the ESG Era: In the context of Environmental, Social, and Governance (ESG) standards, companies that neglect human resource development are viewed negatively by investors and the public. This perception can diminish corporate reputation and market valuation.

Given the limitations of the regional focus on Yogyakarta and the cross-sectional research design, future studies are encouraged to adopt longitudinal approaches and expand sectoral coverage to explore the dynamics of leadership transformation, GHRM maturity, and CSR integration in shaping sustainable business innovation in a broader context within the hospitality industry.

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Conflict of interest

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Appendix A

Table 8. Average and Outer Loading

Variables	Indicators	Mean	Outer1	Outer2	Outer3
Transformational Leadership(X1)	(X1.1) My leader can clearly explain the company's sustainable business plan to me.	4,204	0.753	0.753	0.753
	(X1.2) My leader encourages me to participate in achieving the company's sustainable business mission.	4,247	0.803	0.803	0.803
	(X1.3) My leader actively promotes the implementation of sustainable business plans within the company.	4,314*	0.794	0.794	0.794
	(X1.4) My leader effectively drives the achievement of sustainability goals in the company.	4,284	0.825	0.825	0.825
	(X1.5) My leader demonstrates confidence that the company's sustainable business initiatives can run successfully.	4,201*	0.781	0.781	0.781
	(X1.6) My leader is able to communicate environmentally friendly ideas clearly to me.	4,252	0.804	0.804	0.804
Corporate Social Responsibility (X2)	(X2.1) My company upholds harmony and employee well-being.	4,391	0.616*		
	(X2.2) My company protects the welfare of vulnerable groups.	4,241	0.673*		
	(X2.3) My company contributes to charitable donations.	4,223	0.703	0.686*	
	(X2.4) My company pays salaries and insurance benefits on time.	4,399	0.644*		
	(X2.5) My company encourages employees to pursue career development.	4,247*	0.726	0.726	0.726
	(X2.6) My company provides a healthy and supportive working environment.	4,335	0.748	0.748	0.748
	(X2.7) My company discloses complete and transparent operational information.	4,298	0.752	0.752	0.752
	(X2.8) My company complies with all applicable laws and regulations.	4,373*	0.786	0.786	0.786
	(X2.9) My company guarantees the protection of property rights.	4,271	0.747	0.747	0.747
	(X2.10) My company actively participates in social and community activities.	4,319	0.807	0.807	0.807
	(X2.11) My company uses environmentally friendly technologies and materials.	4,332	0.803	0.803	0.803
	(X2.12) My company continuously improves resource utilization efficiency.	4,311	0.762	0.762	0.762
	(X2.13) My company provides products and services at fair and reasonable prices.	4,332	0.775	0.775	0.775
	(X2.14) My company establishes effective communication channels with stakeholders.	4,354	0.755	0.755	0.755
	(X2.15) My company ensures the protection of customer information.	4,351	0.764	0.764	0.764
Green Human Resource Management (Z)	(Z1) My company selects the right people who fit the organization's environmental values.	4,346	0.601*		
	(Z2) My company promotes strong environmental values in its operations.	4,145	0.636*		
	(Z3) My company implements environmentally friendly staffing practices (green staffing).	4,252	0.764	0.764	0.764
	(Z4) My company requires employees to participate in environmental training programs.	4,172	0.854	0.854	0.854
	(Z5) My company enhances employees' environmental skills and knowledge.	4,180	0.833	0.833	0.833
	(Z6) My company applies the outcomes of environmental training in daily work activities.	4,180	0.865	0.865	0.865
	(Z7) My company evaluates employee performance by including environmental performance records.	4,196	0.847	0.847	0.847

Variables	Indicators	Mean	Outer1	Outer2	Outer3
	(Z8) My company assesses performance based on environmental incidents, responsibilities, concerns, and policies.	4,231	0.869	0.869	0.869
	(Z9) My company provides rewards for effective environmental management practices.	4,172	0.793	0.793	0.793
	(Z10) My company gives rewards when employees demonstrate improved environmental competence.	4,145*	0.798	0.798	0.798
	(Z11) My company is actively involved in environmentally friendly initiatives.	4,284	0.793	0.793	0.793
	(Z12) My company collaborates with employees to solve environmental problems.	4,290*	0.753	0.753	0.753
	(Z13) My company discusses environmental issues during team meetings.	4,236	0.802	0.802	0.802
Sustainable Business Innovation (Y)	(Y1) My company conserves resources to minimize emissions, pollution, and waste.	4,381	0.626*		
	(Y2) My company simplifies the value chain in production and transportation processes.	4,252	0.631*		
	(Y3) My company uses materials optimally to enhance efficiency.	4,255	0.676*		
	(Y4) My company implements waste recycling initiatives.	3,871*	0.732	0.732	0.732
	(Y5) My company actively promotes recycling activities.	3,930	0.781	0.781	0.781
	(Y6) My company reuses spilled and waste materials effectively.	4,048	0.794	0.794	0.794
	(Y7) My company takes actions to reduce environmental impacts.	3,912	0.797	0.797	0.797
	(Y8) My company uses renewable energy sources or natural processes to minimize waste.	3,898	0.836	0.836	0.836
	(Y9) My company increases financial profitability through sustainable practices.	3,938	0.834	0.834	0.834
	(Y10) My company fulfills customer needs without requiring ownership of physical products.	3,987	0.816	0.816	0.816
	(Y11) My company maintains close and long-term relationships with its business partners.	4,147	0.772	0.772	0.772
	(Y12) In my company, customers pay for services rather than take ownership of products.	4,107	0.693*		
	(Y13) My company ensures the long-term health and well-being of employees.	4,255	0.692*		
	(Y14) My company and its partners jointly focus on promoting health and well-being.	4,172	0.720	0.696*	
	(Y15) My company actively safeguards long-term employee health and well-being.	4,190	0.682*		
	(Y16) My company provides sustainable products and services.	4,158	0.707	0.707	0.707
	(Y17) My company and its partners emphasize recycling initiatives.	3,877	0.811	0.811	0.811
	(Y18) My company educates the public about sustainable products.	4,056	0.817	0.817	0.817
	(Y19) My company contributes to creating positive and sustainable environmental impacts.	4,105	0.787	0.787	0.787
	(Y20) My company engages in social and environmental value creation through non-traditional partnerships.	4,008	0.741	0.741	0.741
	(Y21) My company focuses on delivering both social and environmental benefits.	4,070	0.814	0.814	0.814
	(Y22) My company develops innovative and sustainable solutions.	4,134	0.781	0.781	0.781
	(Y23) My company collaborates with partners to develop and deliver sustainable solutions.	4,177*	0.786	0.786	0.786
	(Y24) My company applies franchise or licensing systems in its sustainable business model.	3,727	0.491*		

Source: authors processed, (2025)

Description: *Rejected, <0.70 **Lowest Mean ***Highest Mean