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RESEARCH ARTICLE

The Influence of Leaders' Green Humility on Sustainability Business Performance: The Moderating Role of Green Innovation

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ABSTRACT

The significance of leadership in promoting environmentally focused company performance is growing in response to global sustainability problems. This study seeks to evaluate the impact of leaders' green humility on sustainable business performance and investigate green innovation's function as a moderating variable in this connection. Leader's Green Humility is defined as a leadership disposition characterized by humility toward environmental concerns, receptiveness to input, and recognition of collaborative efforts in sustainability initiatives. Sustainability business performance involves the attainment of economic, social, and environmental outcomes in a sustainable fashion. This study is grounded in the Resource-Based View (RBV), which posits that leadership and the organization's internal capabilities are strategically pivotal in influencing the successful implementation of sustainability ideals. A quantitative methodology utilizing survey methodologies is employed to assess data from organizations implementing green practices, employing moderation regression analysis. This study uses a quantitative methodology, gathering data from Batik MSMEs in West Java, including Cirebon (Batik Megamendung), Garut (Batik Garutan), Tasikmalaya (Batik Tasik), Batik Bogor, Indramayu (Batik Dermayon), Batik Sumedang, and Batik Bandung. SmartPLS employs statistical analytic techniques to examine the correlation among Leader's Green Humility, Green Innovation, and Sustainability Business Performance. The research findings are anticipated to demonstrate that Leader's Green Humility positively impacts Sustainability Business Performance, with this effect intensifying when coupled with a robust capacity for green innovation. These findings enhance the sustainability management literature and offer practical implications for the formulation of leadership and green innovation initiatives inside enterprises.

INTRODUCTION

In the era of globalization marked by increased awareness of environmental issues, green leadership practices are gaining more attention in the study of management and business sustainability (Lusiani et al., 2020; Singh et al., 2020). One of the prominent concepts in this realm is Leader's Green Humility, a form of humility in leaders focused on environmental sustainability. This concept is characterized by openness to feedback, recognition of personal limitations, and appreciation for collective contributions to preserving nature (Zainab, 2024; Taylor et al., 2019). Leadership like this plays an important role in aligning ethical values, environmental innovation, and long-term orientation towards sustainable business performance. Previous research shows that the humility of ecologically conscious leaders can foster a pro-environment organizational culture, enhance employee commitment, and encourage voluntary green behavior within the organization (Zhao et al., 2023; Alsetoohy et al., 2022; Mansoor et al., 2025).

This research aims to evaluate the influence of Leader's Green Humility on sustainability business performance, as well as to examine the moderating role of green innovation in that relationship. This research is based on the Resource-Based View (RBV) approach, which states that internal resources

such as leadership and innovative capabilities play a strategic role in achieving sustainable competitive advantage (Barney, 1991; Su et al., 2020). Green innovation in this context refers to the organization's ability to create environmentally friendly products, processes, and business models (Xu et al., 2022; Su et al., 2020; Jam et al., 2025; Abbas et al., 2025).

Humble leadership has emerged as a modern leadership paradigm that enhances organizational performance and is pertinent to sustainability. According to research (Ren et al., 2020) illustrate that humble leadership in CEOs, characterized by self-awareness, receptiveness to feedback, and recognition of team efforts, can improve the performance and sustainability of start-up enterprises. In a precarious and unpredictable world, the modest demeanor of leaders fosters a psychologically comfortable atmosphere conducive to learning, ecological contemplation, and the pursuit of green innovation. This approach is becoming increasingly relevant to the needs of modern enterprises that are striving for environmental sustainability. The innovation ecosystem's shift toward a green transition necessitates not just technical expertise but also the willingness of enterprises to adapt and provide environments for collaborative engagement (Li et al., 2024). Humble leadership acts as a catalyst for communal values by shifting the focus of leadership from control to facilitation and from domination to cooperation. This notion facilitates the development of environmentally sustainable innovation processes rooted in grassroots ideas and activities, aligned with the organization's pro-environmental ideals.

Moreover, the facets of organizational sustainability are demonstrably enhanced by Green Human Resource Management (GHRM) methods and environmentally conscious employee behavior. According to research (Perez et al., 2023; Kahil, 2025; Mohan, 2024) and; demonstrate that GHRM functions as a conduit between leadership and environmental performance while also mediating the incorporation of green innovation into corporate operations. Within this context, humble leadership may enhance the efficacy of GHRM by employing an empowering and non-directive leadership style, hence bolstering employees' intrinsic willingness to engage in green activities. According to research (Zihan & Makhbul, 2024; Aguir, 2025) assert that GHRM is the primary driver in enhancing the sustainable performance of companies via the innovation route. Consequently, humble leadership fundamentally establishes profound social and psychological foundations for the spontaneous and sustained implementation of green practices, even though it is not overtly transformative or grounded in a robust environmental vision. Consequently, humble leadership occupies a pivotal role in the conversation surrounding organizational sustainability. It substantially fosters the development of a green innovation culture and the adoption of sustainability ideals, particularly by enhancing organizational social structures such as Green Human Resource Management, receptiveness to ideas, and collaborative engagement. This story broadens the concept of leadership from a simple administrative role to a contemplative and ecological practice that adapts to the requirements of the global green transition.

Batik MSME actors in West Java, as research subjects, possess unique value in the context of studies on leaders' Green Humility, green innovation, and sustainability business performance. Batik SMEs are a sector that not only holds economic value but also possesses a strong cultural dimension, while simultaneously facing environmental challenges due to the use of chemicals and waste production. The presence of research subjects in areas such as Cirebon, Garut, Tasikmalaya, and Bandung showcases diversity in leadership practices, innovation capabilities, and responses to sustainability issues. The geographical and historical uniqueness of each region provides a rich backdrop for understanding how the humility of leaders on environmental issues can have a tangible impact on strategic decisions, especially in the context of resource limitations that are characteristic of SMEs. Moreover, Batik SMEs in this region generally have a simple organizational structure and are directly led by the business owner, so the personal values of the leader are likely to directly influence the direction of innovation and the sustainability orientation of the business. In the framework of the Resource-Based View, this condition makes the research object highly relevant for examining the role of internal resources such as leadership and innovation in creating sustainable competitive advantages. Thus, Batik SMEs in West Java are not only culturally and economically representative but also offer an authentic empirical field to test how leaders' Green Humility can be maximized as a strategic force in supporting the green transformation in the small and medium enterprise sector (Zhang & Wang, 2020).

The results of this study are expected to show that Leader's Green Humility has a positive impact on sustainable business performance, especially when the organization has a high capacity for green innovation. These findings align with previous literature that indicates that humble leadership values need to be supported by organizational systems and structures that promote innovation to produce a tangible impact (Liu & Yu, 2023). Moreover, the effectiveness of green humility is often hindered in organizations with a conservative culture or minimal support for green technology experiments (Kim & Park, 2020). In the context of SMEs, a more agile organizational structure can become a catalyst for innovation, provided there is strategic support from leadership and the external ecosystem (Singh et al., 2020).

The theoretical contribution of this research lies in the incorporation of green innovation as a moderating variable in the relationship between green humility and sustainable performance, an approach that has not been extensively studied in the previous literature, which has focused more on the direct influence of green humility on internal behavior or organizational culture (Yao & Hao, 2023). Practically, this research provides strategic directions for organizations, particularly SMEs, to integrate the values of humble leadership with green innovation practices as an effort to build competitiveness in the global green economy landscape. Therefore, the success of business sustainability does not only rely on the moral principles of the leaders but also on the organization's capacity to transform those principles into innovative actions that have a tangible impact (He et al., 2025; Tanriverdi et al., 2025).

This research is new due to numerous significant elements. This research not only investigates the direct correlation between green humility and sustainability performance, as other studies have done, but also distinctly identifies green innovation as a moderating element, rather than merely an intervening or control variable. This method elucidates that green humility must be integrated with green innovation to get optimal sustainability outcomes. This research provides a theoretical synthesis of value-based methods (humble environmental leadership) and resource-based approaches (innovative capacity), a combination that remains hardly addressed in the green leadership literature. This research introduces uniqueness by examining the dynamics within SMEs and resource-constrained industries, thereby initiating a discourse on the significance of structural flexibility and inventive adaptation in enhancing the efficacy of green humility. This research is pertinent in the context of the worldwide shift toward a green economy, necessitating firms to possess not just environmentally visionary executives but also an innovative ecosystem that fosters authentic sustainability. This research elucidates the mechanisms linking green humility to sustainable performance and enhances the formulation of a comprehensive, strategic, and contextual green leadership model.

LITERATURE REVIEW

Resource-Based View (RBV)

The Resource-Based View (RBV) hypothesis posits that sustainable competitive advantage relies on a company's capacity to use distinctive and inimitable internal resources. Within the framework of sustainability, Leader's Green Humility is conceptualized as an intangible asset that embodies the leader's cognizance of environmental concerns, receptiveness to team contributions, and modesty in executing eco-friendly decisions. This leadership quality fosters an organizational culture that is environmentally conscious and receptive to green technologies, hence enhancing sustainability in corporate performance (Zhao et al., 2023).

The organization's level of green innovation significantly influences the efficacy of the leader's green humility in achieving exceptional sustainability performance. Green innovation acts as a catalyst that enhances the impact of green leadership ideals in developing ecologically sustainable goods, processes, and strategies (Ahsan, 2024). In the Resource-Based View (RBV) framework, green innovation shows how an organization's ability to adapt improves the use of its internal resources, particularly in creating competitive advantages focused on sustainability. As a result, combining a leader's Green Humility with Green Innovation shows a smart partnership that aligns with RBV principles, where the company uses its strengths in new ways to achieve lasting business success.

Leader's Green Humility

Leaders' green humility is a form of leadership that emphasizes the humility of leaders in addressing environmental and social issues, characterized by a willingness to learn from others, recognition of personal limitations, and a commitment to sustainability values. In the context of modern organizations, green humility is considered a highly strategic intangible leadership asset because it can create a work climate that supports collaboration, green innovation, and collective awareness of the importance of environmental sustainability (He et al., 2025). Leaders who exhibit ecological humility typically adopt participatory and reflective approaches in decision-making, which encourages employees to contribute green ideas and fosters a shared sense of responsibility for achieving sustainability goals.

This approach is also in line with the values of sustainable leadership, which not only pursues organizational efficiency but also takes responsibility for long-term social and ecological impacts (Zhang & Wang, 2020). Green humility allows leaders to navigate global complexities, such as climate change and social inequality, by prioritizing moral leadership rooted in empathy and ecological justice (Kelvin, 2024). Moreover, this quality facilitates the integration of Sustainable Development Goals (SDGs) into organizational strategies and reinforces the values of corporate social responsibility (CSR) as part of a sustainable corporate identity (Gazi et al., 2024). Therefore, leaders' green humility is not only a psychological dimension of a leader but also a strategic capability that can be optimized to create value-based and sustainable competitive advantages.

Green Innovation

Green innovation refers to the application of new knowledge, technology, and processes aimed at reducing environmental impact and enhancing the sustainable performance of companies. This innovation involves changes in product design, production processes, and business models that are more environmentally friendly. Within the framework of the Natural Resource-Based View (NRBV), green innovation is considered a strategic asset that enables organizations to gain a competitive advantage by balancing economic value and ecological sustainability (Badar & Siddiquei, 2024).

Leadership plays a crucial role in driving green innovation, as the values and decisions of leaders significantly influence the innovation strategies adopted by organizations. Empirical studies indicate that leadership has a significant influence on green innovation performance, and this role is reinforced through the company's involvement in Corporate Social Responsibility (CSR), which acts as a mediator between leadership values and the implementation of green innovation (Wei, 2024). Additionally, green innovation has also been proven to strengthen the impact of CSR on the company's sustainability achievements, indicating that this innovation is not merely a technical strategy but also reflects the company's social and ethical values (Zargar, 2023). Thus, green innovation serves as a bridge between sustainable leadership, social responsibility, and the achievement of Sustainable Development Goals (SDGs), while also strengthening the organization's position in the increasingly sustainability-oriented global business landscape *(*Zhao & Huang, 2022).

Sustainability Business Performance

A company's ability to achieve long-term performance that balances economic, social, and environmental factors is known as Sustainability Business Performance (SBP). This idea is based on sustainability, which considers social and environmental effects as well as financial gain. Within the framework of the Sustainable Development Goals (SDGs), companies that integrate sustainable strategies into their business models have proven to be more capable of building lasting competitive advantages (Xing, 2023). SBP can be measured through indicators such as energy efficiency, carbon emission reduction, social engagement, and inclusive economic growth.

The role of Corporate Social Responsibility (CSR) is very important in supporting SBP, as CSR functions as a strategic mechanism that aligns business practices with social and ethical values. Research shows that sustainability reporting and openness to stakeholders positively impact the company's reputation, customer loyalty, and long-term financial stability (Sideri, 2021). Furthermore, the Resource-Based View (RBV) emphasizes the importance of internal capabilities such as a green organizational culture, ethical leadership, and sustainable innovation as the main drivers of achieving SBP. Therefore, companies that consistently adopt sustainability principles not

only meet their social obligations but also generate sustainable business value and significantly influence global development.

The Influence of Leaders' Green Humility on Sustainability Business Performance

In the context of Micro, Small, and Medium Enterprises (MSMEs), Leader's Green Humility becomes an important dimension in driving the transformation towards sustainable business practices. Humble and pro-environmental leadership reflects the leader's capacity to acknowledge personal limitations, be open to input from the surrounding environment, and commit to sustainability. In the framework of the Resource-Based View (RBV), this attitude is classified as a leadership capability that is not easily imitable and has the potential to generate long-term competitive advantage (Badar & Siddiquei, 2024). In SMEs, where the owner or leader often centers strategic decisions, green humility significantly shapes the organization's orientation and culture towards sustainability.

Leaders who demonstrate green humility are likely to integrate environmental principles into operational processes and decision-making. This reinforces sustainability values, such as resource efficiency, social concern, and awareness of environmental impact in daily business activities. According to research (He et al., 2025) shows that a humble leadership style enhances employee creativity and collective awareness, which ultimately supports the achievement of sustainability goals in small to medium-sized organizations (He et al., 2025). Thus, it is assumed that the higher the level of green humility possessed by SME leaders, the greater their contribution to the improvement of sustainability business performance through the formation of a more inclusive, adaptive, and ecologically responsible culture.

H_1: Leader's Green Humility Positively Influences Sustainability Business Performance

The Influence of Leaders' Green Humility on Sustainability Business Performance Moderated by Green Innovation

In the framework of organizational sustainability, Leader's Green Humility has been identified as a form of ethical and humble leadership that has a significant influence on achieving Sustainability Business Performance. This leadership is characterized by the leader's openness to environmental input, recognition of personal limitations, and willingness to prioritize sustainability values in strategic decision-making (He et al., 2025). In the Resource-Based View (RBV) theory, this quality is seen as a unique and hard-to-copy asset that can give the organization a lasting edge over competitors.

However, the effectiveness of the leader's green humility influence on sustainability performance greatly depends on the extent to which the company adopts and implements green innovation. Green innovation includes the development of environmentally friendly processes, products, or technologies, as well as the enhancement of resource efficiency that supports long-term sustainability. Green innovation not only strengthens the effectiveness of green leadership but also acts as a catalyst that transforms the values and vision of leaders into tangible results in the form of higher sustainability performance (Wei, 2024). Therefore, it can be assumed that green innovation acts as a moderator that enhances the positive relationship between a leader's green humility and sustainable business performance. The higher the level of green innovation in the organization, the greater the contribution of humble leadership to achieving sustainability goals.

H_2: The role of green innovation in modulating a leader's green humility positively affects the sustainability of business performance

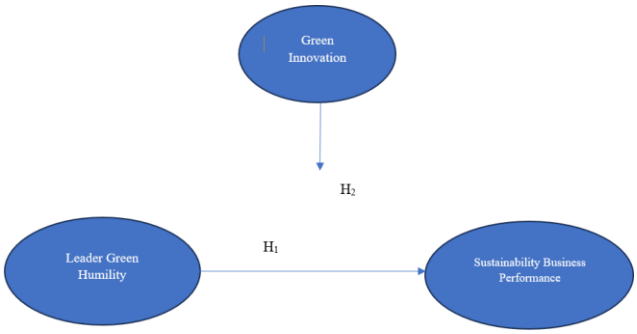

Figure 1. Conceptual Framework

RESEARCH METHOD

This study employs a quantitative approach to examine the impact of strategic agility on MSME innovation, mediated via digital entrepreneurial leadership. The research subject comprises batik SMEs in West Java, specifically Cirebon (Batik Megamendung), Garut (Batik Garutan), Tasikmalaya (Batik Tasik), Bogor (Batik Bogor), Indramayu (Batik Dermayon), Sumedang (Batik Sumedang), and Bandung (Batik Bandung). According to the Isaac and Michael table for a specified population, the sample size of respondents was established at 258 batik entrepreneurs. Purposive sampling ensured the participants' relevance to the research variables. The data collection utilized a standardized questionnaire to assess the characteristics of strategic agility, digital entrepreneurial leadership, and innovation. We analyzed the collected data using the Partial Least Squares (SmartPLS) approach, suitable for examining causal correlations among variables in the research model. SmartPLS was selected for its capacity to manage intricate models with tiny sample sizes and its effectiveness in assessing latent variables (Hair et al., 2014).

Table 1. Measure Variables

No	Variable	Measuring Indicators	Measuring Indicators
1	*Leader's Green Humility* (Shahid, 2024)	Environmental Self-Awareness	Limitations in Addressing Environmental Issues Continuity of learning in addressing problems Acknowledging mistakes in environmental decision-making
		Appreciation of Others' Green Contributions	Appreciating environmentally friendly ideas proposed by team members Giving praise for employees' environmentally supportive behavior. Encouraging the participation of all parties in green activities.
		Teachability/Openness to Green Feedback	Open to constructive criticism regarding environmental policies Accept suggestions on new ways to improve the organization's environmental impact. Changing my approach based on input from the team regarding environmentally friendly practices.
2	*Green Innovation (*Zhao & Huang, 2022)	Green Product Innovation	The use of environmentally friendly raw materials Product design that allows for recycling Reduction of hazardous materials in products Improvement in energy efficiency in the use of products by consumers
		Green Process Innovation	The use of energy and water-efficient production technology More effective and environmentally friendly production waste management
		Green Organizational Innovation	Integration of environmental policies into corporate strategy Employee training on environmentally friendly practices Formation of a special team for green initiatives
		Green Marketing Innovation	Product promotion by highlighting environmental benefits Labeling products with environmental certification Consumer education campaigns about sustainability
3	*Sustainability Business Performance (R. Liu et al., 2023)*	Economic Performance	Relative and absolute revenue growth Financial stability through measurable indicators Long-term profitability and operational efficiency
		Environmental Performance	Reduction of carbon emissions Use of renewable energy Efficiency in water use and waste management Implementation of clean production practices and green innovation
		Social Performance	Employee welfare and safety Community engagement and corporate social responsibility Compliance with ethical standards and human rights Transparency and accountability in social reporting

RESULT

Outer Model Evaluation Validity

Convergent Validity

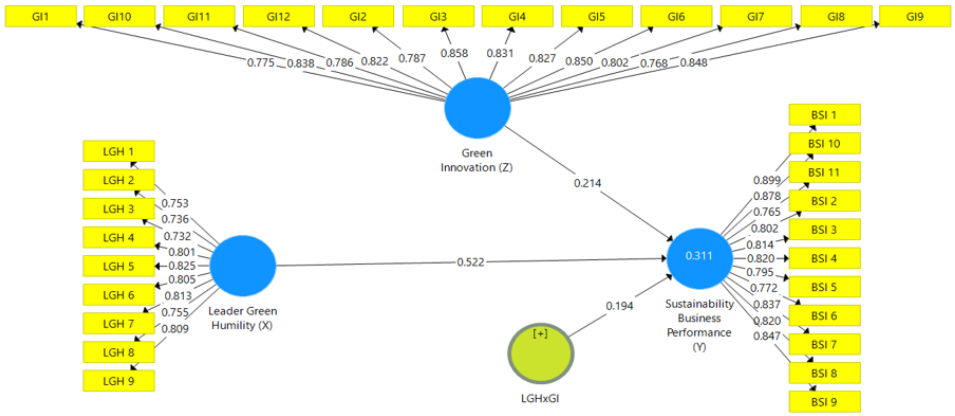

Figure 2. Convergent Validity

Table 2. Construct Reliability and Validity

	CA	rho_A	CR	AVE
Leader Green Humility (X)	0.922	0.933	0.934	0.611
Sustainability Business Performance (Y)	0.952	0.957	0.959	0.678
Moderating Effect 1	1	1	1	1
Green Innovation (M)	0.955	0.967	0.96	0.667

According to the findings from construct validity and reliability assessments utilizing the Partial Least Squares (PLS) method, all variables within the model exhibit excellent measurement quality. The variable Leader Green Humility (X) has a Cronbach's Alpha of 0.922 and a rho_A of 0.933, signifying a substantial degree of internal reliability. The composite reliability rating of 0.934 verifies that its indicators consistently measure the construct. The average variance extracted (AVE) score of 0.611 signifies that over 50% of the variation in the indicators is attributable to the construct, hence confirming the fulfillment of convergent validity.

The Sustainability Business Performance (Y) variable demonstrates exceptional dependability, evidenced by a Cronbach's Alpha of 0.952 and a rho_A of 0.957. Composite reliability is 0.959, signifying exceptional internal consistency, while the AVE score of 0.678 demonstrates sufficient convergent validity for this concept. Simultaneously, the values for Moderating Effect 1, all equal to 1.000, stem from the computation of interaction effects derived from other constructs; hence, they do not necessitate validity and reliability assessments as latent constructs often do.

The Green Innovation (M) variable has exceptional dependability, evidenced by a Cronbach's Alpha of 0.955 and rho_A of 0.967. A composite reliability of 0.960 signifies that the indicators employed exhibit excellent consistency in assessing the construct. An AVE score of 0.667 indicates that this concept possesses robust convergent validity. All constructs in the model have satisfied the reliability and validity criteria, therefore confirming that the instruments employed in this study are both valid and reliable for measuring the examined variables.

Table 3. Discriminant Validity

	Leader Green Humility	Sustainability Business Performance	Moderating Effect 1	Green Innovation
Leader Green Humility (X)	0.782		-0.271	0.182
Sustainability Business Performance (Y)	0.865	0.882		
Moderating Effect 1			1	-0.391
Green Innovation (Z)	0,488	0.824	0.046	0.203

According to the findings from construct validity and reliability assessments utilizing the Partial Least Squares (PLS) method, all variables within the model exhibit excellent measurement quality. The variable Leader Green Humility (X) has a Cronbach's Alpha of 0.922 and a rho_A of 0.933, signifying a substantial degree of internal reliability. The composite reliability rating of 0.934 verifies that its indicators consistently measure the construct. The average variance extracted (AVE) score of 0.611 signifies that over 50% of the variation in the indicators is attributable to the construct, hence confirming the fulfillment of convergent validity.

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Inner Model Evaluation

The coefficient of determination, goodness of fit, and hypothesis testing are various methods employed to assess the model's efficacy. Figure 3 illustrates the outcomes of the hypothesis testing conducted by PLS bootstrapping.

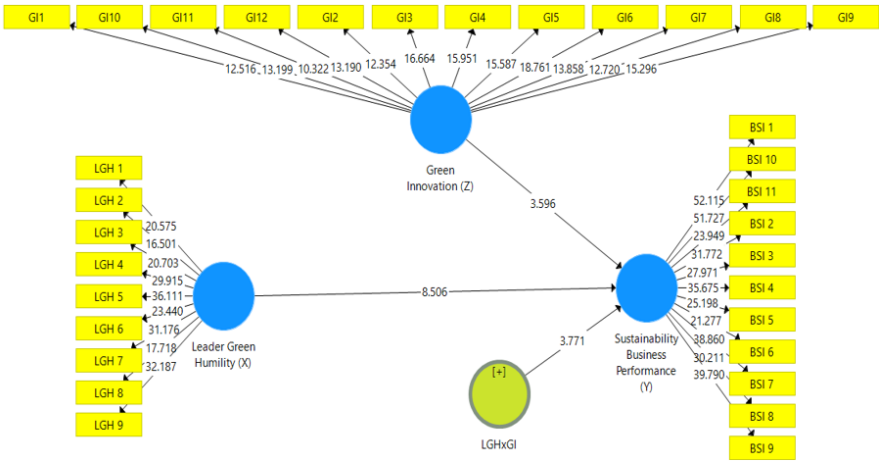

Figure 3. Inner Model Evaluation

Table 4. Output Bootstrapping

	Original Sample (O)	Sample Mean (M)	Standard Devise (STDEV)	T Statistic (|O/STDEV|)	P Values
Green Innovation → Sustainability Business Performance	0.214	0.222	0.059	3.596	0
Moderating Effect 1 → Sustainability Business Performance	0.194	0.189	0.051	3.771	0
Leader Green Humility → Sustainability Business Performance	0.522	0.523	0.061	8.506	0

The results from the tests for construct validity and reliability using the Partial Least Squares (PLS) method show that all the variables in the model have very good measurement quality. The variable Leader Green Humility (X) has a Cronbach's Alpha of 0.922 and a rho_A of 0.933, indicating it is very reliable. The composite reliability score of 0.934 confirms that its indicators reliably measure the concept. The variable Leader Green Humility (X) has a Cronbach's Alpha of 0.922 and a rho_A of 0.933, signifying a substantial degree of internal reliability. The composite reliability rating of 0.934 verifies that its indicators consistently measure the construct. The average variance extracted (AVE) score of 0.611 shows that more than half of the differences in the indicators come from the construct, confirming that convergent validity is met.

The Sustainability Business Performance (Y) variable demonstrates exceptional dependability, evidenced by a Cronbach's Alpha of 0.952 and a rho_A of 0.957. Composite reliability is 0.959, signifying exceptional internal consistency, while the AVE score of 0.678 demonstrates sufficient convergent validity for this concept. The values for Moderating Effect 1, all being 1.000, come from calculating interaction effects based on other factors, so they don't need the same validity and reliability checks that other hidden factors usually require.

The Green Innovation (M) variable has exceptional dependability, evidenced by a Cronbach's Alpha of 0.955 and rho_A of 0.967. A composite reliability of 0.960 signifies that the indicators employed exhibit excellent consistency in assessing the construct. An AVE score of 0.667 indicates that this concept possesses robust convergent validity. All constructs in the model have satisfied the reliability and validity criteria, therefore confirming that the instruments employed in this study are both valid and reliable for measuring the examined variables.

Hypothesis Testing

The measurement is considered significant if the T-statistical value exceeds 1.96 and the p-value is less than 0.05 at a critical value of 5%. The parameter coefficient, on the other hand, displays the propensity for influence, as evidenced by the actual specimen's positive or negative value. Table 4 summarizes the hypothesis testing outcomes.

Table 4. The Hypothesis Testing Outcomes

	Original Sample	T-statistic	P-value	Description
Leader Green Humility → Sustainability Business Performance	0.522	8.506	0	H1 is Supported
Ethical Leadership → Innovative Work Behavior Moderating Perceived Organizational Support	0.194	3.771	0	H2 is Supported

The table displays the results of the hypothesis testing, revealing two major findings. First, the leader's green humility has a positive and significant effect on sustainability business performance, with a coefficient value of 0.522, a t-statistic of 8.506, and a p-value of 0.000. This figure indicates that the first hypothesis (H1) is supported. This means that the higher the level of humility among leaders in managing sustainability aspects, the greater their contribution to improving business sustainability performance. Second, the testing of the moderation hypothesis shows that ethical leadership influences innovative work behavior, moderated by perceived organizational support, with a coefficient value of 0.194, a t-statistic of 3.771, and a p-value of 0.000. Therefore, we also support the second hypothesis (H2). These findings indicate that the influence of ethical leadership on innovative work behavior will be stronger when employees perceive high organizational support. These two results highlight the importance of ethical and humble leadership in creating a work environment that supports innovation and organizational sustainability.

DISCUSSION

Leader's Green Humility Positively Influences Sustainability Business Performance

Leader's Green Humility (LGH) is a form of leadership that emphasizes humility, openness to environmental learning, and a commitment to sustainability in strategic decision-making. In the

Resource-Based View (RBV) approach, LGH is seen as a rare and difficult-to-imitate intangible asset, making it a source of competitive advantage that can contribute to sustainable business performance (Sustainability Business Performance/SBP) (Badar & Siddiquei, 2024). This leadership style plays a crucial role, especially in the context of batik SMEs in West Java, where leadership directly influences the strategic direction of the business and the management of production resources, which are closely tied to cultural and environmental aspects.

Empirically, several studies show that batik SME leaders who implement green humility successfully create an organizational culture that supports green innovation and sustainability. For example, at Batik Ciwaringin MSME in Cirebon, a humble leadership style has encouraged the adoption of eco-printing techniques and the use of natural dyes, which not only reduce waste pollution but also enhance brand image and product value (He et al., 2025). Another study revealed that leaders' Green Humility encourages increased energy efficiency and waste management in batik SMEs in Dermayon (Indramayu) and Garutan (Garut), along with enhanced stakeholder trust and customer loyalty due to ethical production practices (Wei, 2024). On the other hand, natural batik associations in Bandung and Tasikmalaya report that leaders with LGH can inspire employee and community participation in sustainability efforts, as well as enhance the social value of batik products in domestic and international markets (Zargar, 2023).

So, both in theory and from real examples in places like Cirebon, Garut, Tasikmalaya, Bogor, Indramayu, Sumedang, and Bandung, there is a strong positive link between leaders' Green Humility and how well businesses perform in terms of sustainability. This leadership style not only strengthens the internalization of sustainability values within the organization but also encourages green innovation and adaptation to the principles of Sustainable Development Goals (SDGs), making batik SMEs more resilient and competitive in the long term.

The role of green innovation in modulating a leader's green humility positively affects the sustainability of business performance

This research builds a theoretical foundation by integrating two main approaches that have tended to be studied separately in the sustainability literature: the value-based approach through Leader's Green Humility (LGH) and the resource-based view (RBV) through Green Innovation. LGH refers to leadership characteristics that reflect humility in addressing environmental issues, a willingness to learn from others, and a commitment to ecological values in strategic decision-making (He et al., 2025). Meanwhile, green innovation encompasses an organization's ability to create and implement products, processes, or systems that significantly reduce environmental impact and support sustainable practices (Badar & Siddiquei, 2024). This research shows that combining leadership characteristics focused on humility with green innovation is necessary for achieving the best sustainability results, addressing a key gap in the green leadership studies that usually look at direct effects without considering how innovation plays a role.

In batik small and medium-sized enterprises (SMEs) in West Java, including places like Cirebon, Garut, Indramayu, Tasikmalaya, Bandung, and Sumedang, having a leader with Green Humility does not automatically lead to better Sustainability Business Performance unless it is paired with a strong level of green innovation. SMEs that use green innovation in their production, like natural dyes, recycling wastewater, or using energy-efficient batik stoves, see big improvements in three important areas: making money, having a positive social image, and reducing their environmental impact. Research on Batik Ciwaringin in Cirebon and eco-friendly batik from Tasikmalaya and Bandung, for instance, supports the idea that green innovation helps improve how effective green leadership values are in boosting sustainability performance (Wei, 2024). These findings also highlight the importance of being able to adapt creatively to changes by using innovations that fit within limited resources, which is a key feature of traditional batik SMEs.

Additionally, this research is important because it shows that green innovation plays a different role as a moderator, unlike earlier studies that treated it as a factor that influences or results from other variables. By positioning green innovation as a moderating variable, this research explains that the success of green leadership values will only be realized in the context of organizations that have a flexible structure, a collaborative ecosystem, and innovative maturity that allows for experimentation and continuous learning. In the context of the global green economy, the study reflects the urgent need for companies, especially SMEs, to not only have environmentally visionary

leaders but also internal innovation systems capable of translating that vision into tangible impacts on sustainability performance.

Thus, this research not only shows how important leaders' green humility is for achieving sustainable business performance but also explains how green innovation plays a key role in making this connection stronger, especially in resource-limited industries like batik SMEs in West Java. These results contribute to the formation of a comprehensive, strategic, and contextual green leadership model, reflecting the synergy between values and capacity as the core of successful sustainable transformation.

CONCLUSION

This research reveals that Leader's Green Humility (LGH) has a significant positive influence on Sustainability Business Performance (SBP) in batik SMEs in West Java. However, the strength of this influence does not stand alone but is significantly affected by the level of green innovation within the organization. Batik SMEs that implement environmentally friendly innovations such as the use of natural dyes, waste management systems, and energy efficiency show higher sustainability performance, particularly in terms of operational efficiency, market acceptance, and environmental reputation. These findings highlight that being humble about environmental efforts should be combined with innovation skills to get the best sustainability results, especially when resources are limited, like in small businesses. This indicates that structural flexibility and adaptive capacity are prerequisites for the successful implementation of green leadership values in the small business ecosystem.

Theoretically, this research provides a new contribution by synergizing two main approaches in the sustainability literature: the value-based approach through LGH and the resource-based approach through Green Innovation. Previous research usually sees green innovation as something that helps or controls other factors; this study clearly shows how green innovation can boost the impact of leadership on sustainable performance, addressing a gap in the green leadership literature that hasn't fully looked at how values and capabilities work together. Additionally, studying batik SMEs, which are local cultural businesses influenced by global changes, adds to the discussion by highlighting how important it is to adapt creatively and be flexible to improve the effectiveness of green leadership values.

From a managerial perspective, these findings encourage MSME actors and policymakers to not only focus training on the internalization of green values in leadership but also to strengthen the innovation ecosystem within organizations. UMKM leaders must be facilitated to create an environment that supports ecological creativity, cross-sector collaboration, as well as access to green technology and innovative financing sources. To generate a significant sustainability impact, real innovation capacity must complement humble and environmentally oriented leadership. In the context of the transition toward a global green economy, this research emphasizes that the success of green leadership not only depends on the leader's vision but also on the organizational readiness to innovate sustainably.

Suggestion

The results of this study provide significant contributions both theoretically and practically and open up vast opportunities for further research. Theoretically, this research suggests that the green leadership model should be further developed through the integration of a value-based approach represented by Leader's Green Humility (LGH) and a resource-based approach through Green Innovation. Future conceptual models should treat innovation not only as an outcome or intermediary but as a moderating element that enhances the effectiveness of leadership values on sustainability performance. This approach provides a new way to understand how a company's skills and ethical values work together for sustainability, especially for small and medium-sized enterprises (SMEs) that have limited resources but are dealing with the global shift towards a green economy. Managerially, these findings imply the importance of leadership training that not only instills environmental awareness but also encourages the development of green innovation capacity within the organization. Batik SME leaders must be facilitated to create a work environment that supports cross-sector collaboration, the use of green technology, and the exploration of innovative financing sources. Comprehensive policy interventions are needed to create an innovative

ecosystem aligned with sustainability values and to support structural adaptation in the cultural-based creative industry sector, such as batik.

For future research, it is recommended that the relationship between LGH, green innovation, and sustainability business performance be further examined by involving contextual variables such as organizational culture, MSME ownership structure, or the level of business digitalization. Longitudinal research is also needed to observe the long-term dynamics of LGH's influence on sustainability transformation in local economic sectors. Additionally, the development of LGH measurement instruments that are more specific to the context of the creative industry and cultural heritage will enrich the validity and generalization of the green leadership model in cross-sectoral and cross-national studies. By expanding the scope and depth of analysis, future studies have the potential to form a stronger conceptual foundation for green leadership practices and policies during the transition to a sustainable global economy.

Limitation

The main drawback of this study is that it looks at the relationships between variables only at one moment in time, so it doesn't show how leaders' green humility, green innovation, and sustainability business performance change over time. Additionally, the focus of the research on batik SMEs in West Java limits the generalization of the findings to other sectors or regions with different organizational characteristics, cultures, or innovation capacities. The measurement instruments used also rely on the subjective perceptions of respondents, which may introduce perceptual bias. So, future research should use long-term studies and a mix of methods (both interviews and surveys) and look at different industries and locations to improve the reliability of the results and better understand how green leadership works in sustainability.

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