

Knowledge-Oriented Leadership and Green Human Resource Management in Improving Green Work Innovative Behavior with the Mediation Model

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Abstract

The research explores the relationship between knowledge-oriented leadership, green human resource management practices, and the innovative behavior of green workers in the context of small enterprises in Central Kalimantan, Indonesia. The study aims to fill gaps in existing research by investigating how these leadership and HR practices affect employee involvement in environmentally friendly initiatives and innovative work behavior. By examining the role of mediators of environmentally sound human resource factors and environmentally friendly employee engagement, the study seeks to provide new insights into the mechanisms through which knowledge-oriented leadership and green HRM can drive sustainability and innovation in organizations. Data was collected from employees working in micro and small businesses in Central Kalimantan, Indonesia. A total of 114 online questionnaires were filled out by employees working at 32 SMEs. Using the size effect test method of mediation with upslon (ν) statistics provides an explanation of how strong the mediation influence in this study is. Research findings suggest that green work engagement mediates the relationship between green human resource management and green work innovative behavior.

Keywords: Knowledge-Oriented Leadership, Green Human Resource Management, Green Work Innovative Behavior, Green Work Engagement

1. Introduction

Leadership and human resource management play an important role in the development of the company's internal competence and capabilities, but from a different perspective ((Augi et al., 2020; Chen & Chang, 2013; Purnomo et al., 2022; Sambung, 2022). Knowledge-oriented leadership (KOL) has a positive impact on innovation performance in companies by promoting a culture that encourages employees to create, integrate, share, and apply new knowledge to generate and implement new ideas (Le & Do, 2024) (Shariq et al., 2019). COPD plays an important role in stimulating employees to engage in knowledge-sharing behaviour that contributes to innovation success. By creating an environment in which knowledge is valued and shared, KOL can inspire employees to innovate and contribute to the overall performance of the organization. Previous research has shown that knowledge-oriented leadership can encourage employees to, create new ideas, and implement innovation in organizations (Rehman & Iqbal, 2020; Shehzad, et al., 2022). However, there are still gaps in research related to a deeper understanding of how knowledge-oriented leadership specifically affects innovative work behaviour in an environmentally friendly context. Therefore, the study aims to fill those

gaps by exploring the relationship between knowledge-based leadership, innovative environmentally-friendly work behavior, as well as considering environmentally sound human resource factors and environmental employee employment involvement as mediation. In addition to the importance of the style of a leader in organizations especially small and medium-sized enterprises, the role of green human resource practice has become crucial in this era, where all business organizations strive to maintain environmental sustainability (Jnaneswar, 2024). Green HRM influences the environmental performance of an organization by introducing human resource management practices that focus on environmental sustainability and encourage environmentally friendly behaviour among employees. Green HRM ensures that activities such as green recruitment and selection, environmental training, green performance management, as well as green compensation and awards are implemented within the organization (Song et al., 2020). By involving employees in green initiatives, providing environmental education, and awarding environmentally friendly behaviour, green HRM assures that members of the organization are actively engaged in achieving green goals and preserving resources (Aboramadan, 2022; Song et al., 2020). The need for more in-depth research on the relationship between Green Human Resource Management (HRM) and environmental performance in Eastern countries, especially in developing countries (Song et al., 2020) is one such as Indonesia. Although the importance of Green HRM and environmental performance has been acknowledged, little empirical research has been done in Eastern countries (Jnaneswar, 2024; Song et al., 2020). Therefore, this study seeks to fill this knowledge gap by testing the impact of Green HRM on environmental performance in small enterprises in Indonesia. No research has yet tested the role of knowledge-oriented leadership (KOL) in promoting green, innovative employee behaviour in the small business sector in Indonesia. In the Shahbaz et al., 2024 study, there are several suggested ways to improve Green Innovative Work Behavior (GIWB) such as increasing environmental awareness by providing training and education to employees about the importance of environmentally friendly practices and their positive impact on the environment. Support and Resource Provision: Ensure that employees have access to the resources and support needed to implement innovative ideas that are environmentally friendly. Recognition and Awards: Give recognition and appreciation to employees who contribute to green innovation, thereby encouraging their motivation and engagement in environmentally friendly practices. Use of transformational leadership. The difference in current research is that the concept of leadership used to drive up the GIWB is knowledge-oriented leadership (KOL).

2. Literature Review

2.1 Knowledge-oriented leadership

According to the knowledge-based theory (Grant, 1996), companies can perform better than their competitors and thus gain a competitive advantage if they manage their knowledge capital, which is recognized as the company's most basic strategic resource. The theoretical concept of knowledge-oriented leadership (KOL) emphasizes the importance of leadership that promotes the creation, transfer, storage, and application of knowledge to drive innovation capabilities within organizations (Uhl-Bien et al., 2007; Zia ud din et al., 2024). KOL focuses on the

management of organizational knowledge and plays a key role in the acquisition, creation, sharing, transformation, and use of organizational knowledge. Knowledge-oriented leaders tend to appreciate learning and training to enhance employee knowledge, as well as providing incentives to build systems for sharing, storing, and applying organizational knowledge resources.

The theory of knowledge-oriented leadership also highlights that leadership plays an important role in managing knowledge resources and knowledge processes within an organization. Knowledge-oriented leaders encourage the creation, sharing, and application of new knowledge to support improved knowledge management and innovation performance (Donate & Sánchez de Pablo, 2015). Thus, the concept of KOL theory emphasizes the importance of leadership, which facilitates the knowledge process and acts as a catalyst for innovation and organizational success. Knowledge-oriented leadership (KOL) has a significant role to play in improving innovation performance in the company (Chughtai & Khan, 2024; Le & Do, 2024; Shamim et al., 2019).

It can be explained that there is a direct link between knowledge-oriented leadership (KOL) and improving employee performance and organizational success. In the context of this research, the researchers used the concept of green work engagement.

Hypothesis 1 : Knowledge-oriented leadership increase green work engagement.

2.2 Green Human Resource Management (GHRM)

Green HRM plays an important role in promoting environmental sustainability in organizations by integrating environmentally friendly practices into the SDM process, involving employees in environmental initiatives, attracting environmentally conscious talents, influencing employee behavior, and mediating the relationship between ethical leadership and environmentally-friendly behavior (Islam et al., 2020). Previous research has shown that GHRM, characterized by a pro-environmental attitude in the human resources department, significantly affects the adoption of attitudes and practices in the workplace that prioritize environmental sustainability (Dumont et al., 2017), thus facilitating the integration of a green culture within organizations. Referring to the creation of a green culture, (Margaretha and Saragih 2012) stated that it is important for companies to eliminate potential threats to the natural environment and ecosystems and strengthen their understanding of environmental issues. At the organizational level, a green culture can be promoted by supporting HRM activities. More Mishra, (2017) shows that GHRM significantly affects the adoption of environmentally-friendly attitudes and practices, fostering a working environment that encourages the integration of a green culture into the organization. Other studies found that organizational commitment and employee behaviour that is environmentally oriented is enhanced by G HRM (Zhao & Zhou, 2021).

It can be explained that there is a direct link between GHRM practices in enhancing Green Work Engagement (Aboramadan, 2022; Jnaneswar, 2024). So that the interim answers can be compiled in this study are:

Hypothesis 2: Green human resource management increases green work engagement

2.3 Green work engagement and green innovative work behavior

Full engagement is achieved only by those who consistently demonstrate physical, cognitive, and emotional presence during their job performance. According to Lai et al., (2020), the personnel exhibit higher levels of attentiveness, connectivity, and task performance focus. The antecedents of work engagement have been extensively examined in the literature, with leadership emerging as a significant factor in this regard. Despite the existence of several studies investigating the associations between various types of leadership and work engagement, such as transformational leadership (Bui et al., 2017) and empowering leadership (Cai et al., 2018), there has been a notable lack of scholarly focus on inclusive leadership. In addition, Green work engagement is a concept that refers to the level of employee involvement in activities related to environmental sustainability and environmentally friendly practices in the workplace. Employees who have green work engagement show full readiness and concentration in carrying out environmental and green tasks, as well as feel enthusiasm, pride, and inspiration for those tasks (Jnaneswar, 2024). They are involved in organizational environmental activities and contribute to environmental sustainability. Green work engagement covers a range of activities such as high engagement in environmental practices, thinking towards environmental improvement, and giving suggestions to make organizations more environmentally friendly (Aboramadan, 2022). Employee involvement in these green initiatives is considered important as it can affect the overall performance of the organization's environment (Karatepe et al., 2022).

Innovative Work Behavior (IWB) refers to the willingness and ability of an individual to engage in activities that lead to the generation, promotion, and implementation of new ideas, processes, products, or procedures within an organization. It involves behaviors such as creativity, proactivity, risk-taking, and problem-solving that contribute to innovation and organizational success. Employees who show high IWB levels are more likely to drive innovation, adapt to change, and contribute towards growth and overall organizational competitiveness (Shahbaz et al., 2024).

According to Aboramadan, (2022) is able to improve green innovative work behavior significantly. Therefore, this study indicates:

Hypothesis 3: Green work engagement enhances green innovative work behavior

2.4 Green work engagement as mediation

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It can be explained that green work engagement (Aboramadan, 2022; Jnaneswar, 2024) plays a role in mediating leadership relationships and employee performance and behavior. In this study, GWE mediated the relationship between KOL and GIWB; GHRM and IGWB. So the interim answer can be compiled in this study is: Hypothesis 4a: Green work engagement mediates the intersectional relationship between GHRM and GIWB. Hypthesis 4b: Green working engagement mediated that intersessional relationship between KOL and GIWB.

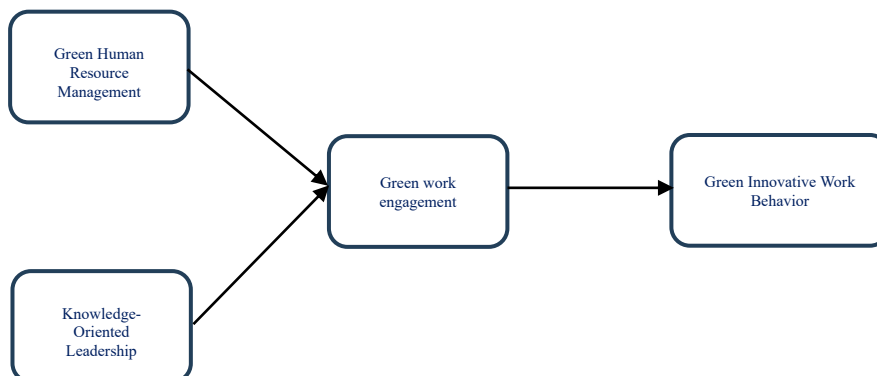


Figure 1. Research framework

3. Research Method

This study adopted a quantitative research design with the survey method, as it was more effective in investigating the relationship between variables and the generalization of findings (Mertler, 2022). Between December 2023 and March 2024, the survey was conducted to gather data from employees working in various manufacturing organizations. This research adopted quantitative research designs with the surveillance method, because it is more effective to investigate the relation between variable and generalized findings. Between February 2024 and April 2024, this survey was carried out to collect data from workers working in different organizations of small micro enterprises in the Middle Kalimantan of Indonesia. The research used purposive sampling methods to obtain samples of employees working in UMK's rubber and rotan crafts. This is in line with Cooper and Schindler (2003), who stated that if there were problems such as population unavailability or excessive costs, researchers could consider using non-probability sampling.

Participants and procedures. Data was collected from employees working in micro and small businesses in Central Kalimantan, Indonesia. A total of 114 online questionnaires filled out by employees working at 32 SMEs were used for statistical analysis using Smart PLS 4.0. Respondents consisted of 24 (21.4%) men and 88 (78.6%) women, with an educational level of 6 (5.4%) middle school, 78 (69.6%) high school, 22 (19.7%) under graduate, 6 (5.4%) postgraduate. The work experience of 77 (68.8%) was under 5 years, 25 (22.4%) 5.1 -15 years, 6 (5.4%) 16-20 years, and 4 (3.6%) over 21 years. Age of respondents: 77 (68.8%) under 20 years, 3 (2.7%) 21-25 years, 6 (5.4%) 26-30 years, 3 (2.7%), 6 (5.4%) 36-40 years, 6 (5.4%) 41-45 years, and 11 (9.8%) above 46 years. Based on training on environmentally friendly products, 80 (71.4%) had never participated and 34 (30.4%) had participated.

Statistical Strategy. The author uses PLS-SEM to evaluate the study hypothesis (Hair et al., 2017). PLS-SEM is commonly used in a wide range of scientific fields, including human resources management, marketing, strategic management, and hospitality (Hair et al., 2014; Ringle et al., 2018). SEM PLS is a multivariate statistical analysis to estimate the influence between variables performed simultaneously with reference to the study of exploration/prediction/ development of structural models. This is because the algorithm built in the SEM PLS is to maximize the value of the R square of endogenous variables. On the basis of such an algorithm then the SEM pls is called SEM with the flow of study of exploration/prediction/development of structural models or SEM based on variance.

4. Finding and Discussion

Model evaluation in PLS is carried out using a two step approach, namely two steps where evaluating the measurement model to obtain adequate requirements and continuing with structural model evaluation to evaluating model quality. Hasil pengujian outer model di tunjukkan **pada tabel 1**.

Table 1. Result of model constructs

Construct	Indicator	Item reliability	Convergent validity		
		Loadings	CR	Alpha	AVE
Knowledge-oriented leadership	KOL1	0,813	0,869	0,871	0,657
	KOL2	0,847			
	KOL4	0,784			
	KOL5	0,801			
	KOL6	0,805			
	HRM1	0,851			
Green Human Resource Management	HRM2	0,857	0,912	0,918	0,740
	HRM3	0,910			
	HRM4	0,853			
	HRM5	0,828			
Green Work Engagement	GWE1	0,833	0,923	0,925	0,764
	GWE2	0,881			

	GWE4	0,910			
	GWE5	0,859			
	GWE6	0,886			
	GIWB1	0,895			
	GIWB2	0,889			
Green Innovative Work Behavior	GIWB3	0,896	0,911	0,912	0,789
	GIWB4	0,873			

Note: CR = Composite Reliability; AVE = average variance extracted

Loading Factor (LF) or outer loading is the correlation between each measurement item and a variable. Rule of thumb, (Hair Jr et al., 2022), (Henseler et al., 2015) use $LF \geq 0,70$ as acceptable. The LF research results are all above 0,7. Internal consistency reliability shown by composite reliability (CR) is all with a value greater than 0,7. Apart from Composite Reliability, other measures that describe the level of reliability or internal consistency of reliability are Cronbach's Alpha and Rho A. The research results all have values above 0.7. Average variance extracted (AVE) is the average variation of each measurement item contained by the variable. How far as a whole the variables can explain variations in measurement items, research results show an AVE value $\geq 0,50$.

Tabel 2. Discriminant Validity of Constructs

Variables	GHRM	GIWB	GWE	KOL
Discriminant Validity: Fornell–Larcker Criterion				
GHRM	0,860			
GIWB	0,503	0,888		
GWE	0,719	0,630	0,874	
KOL	0,702	0,534	0,609	0,810
Heterotrait–Monotrait Criterion (HTMT)				
GHRM				
GIWB	0,551			
GWE	0,777	0,689		
KOL	0,787	0,596	0,678	

Note: GHRM= Green Human Resource Management, GIWB = Green Innovative Work Behavior, GWE = Green Work Engagement, KOL= Knowledge-Oriented Leadership.

We also report discriminative validity (DV) based on the Fornell-Larcker criterion and the Heterotrait-Monotrait criterion. The Fornell-Larcker criterion indicates that the square root of the AVE of each construct is higher than the highest correlation of the construct with other constructs in the model. The results show that the correlation between constructs has a greater value than other constructs. Compared with the Heterotrait-Monotrait (HTMT) correlation criterion ratio, it is better than the traditional approach on discriminative validity assessment

due to much lower values of both the Fornell-Larcker criterion and cross-loading using 0.85 as the appropriate threshold level (Hair et al., 2017).

Although this method is often used in applied research, it does not allow to reliably detect discriminative validity problems (Hair et al., 2017) that the HTMT measure is better used than the Fornell and lacker criterion methods in detecting discriminant validity. Therefore, Discriminant Validity (DV) is better assessed using HTMT (Henseler et al., 2015). DV is used to measure how other constructs differ using empirical standards (Hair et al., 2017). To achieve a satisfactory level of DV, the results show that all constructs have HTMT scores <0.90, and the 97.5% bootstrap confidence interval shows all values are in good agreement, thus indicating that all research constructs (EGRP, IGRP, GTL, GHR) are conceptually and empirically different from each other.

Table 3. Testing for Potential CMB Based on Full Collinearity

Construct	Inner VIF
GHRM -> GIWB	2,684
GHRM -> GWE	1,971
GWE -> GIWB	2,166
KOL -> GIWB	2,063

Note. VIF = variance inflation factor.

If inner VIF > 5 then there is suspicion of multicollinearity. However, in (Hair et al., 2017) a VIF value between 3-5 has the potential for multicollinearity to occur and the ideal is if VIF < 3. Multicollinearity examination in this study with a VIF value < 3 means there is no multicollinearity.

Assessment of Structural Modeling Path Coefficients

Table 4. Path Coefficients for Direct Effects.

Hypotheses	Original sample	T statistics	P values	Report
Green HRM → Green Work Engagement	0,574	5,247	0,000**	Supported
Knowledge-Oriented Leadership → Green Work Engagement	0,206	2,043	0,041*	Supported
Green Work Engagement → Green Innovative Work Behavior	0,500	4,296	0,000**	Supported

Note P values** < 0,01, * < 0,05

The results in the table above show that our path coefficient is significant. The results show that all paths are statistically significant. The structural paths of the remaining constructs were significant based on two-tailed tests at $p < 0,05$. In Hypothesis 1, we predicted that GHRM has a positive effect on GWE. As shown in the table above, this is statistically significant at ($t = 5,247$; $p < 0,000$). This shows that GHRM directly influences GWE and the hypothesis is

accepted. Hypothesis 2 also predicts that there is a positive and statistically significant relationship between KOL and GWE. This was also shown to be determined at ($t = 2,043$, $p < 0,041$) which supports the effect proposed in Hypothesis 2; therefore, KOL is able to increase the GWE of the accepted hypothesis. Hypothesis 3 also predicted that GWE statistically and significantly has a positive effect on GIWB. This was also shown to be determined at ($t = 4,296$, $p < 0,000$) which supports the effect proposed in Hypothesis 3; therefore, GWE is able to increase GIWB, the hypothesis is accepted.

Table 5. Path Coefficients for Indirect Effects.

Hypotheses	Original sample	T statistics	P values	Report
GHRM $\rightarrow$ GWE $\rightarrow$ GIWB	0,287	3,349	0,001	Supported
KOL $\rightarrow$ GWE $\rightarrow$ GIWB	0,327	1,777	0,076	No Supported

Note: P values $< 0,05$

Table 5 above shows that the t value and p value respectively ($t = 3,349$; $p < 0.001$); Therefore, the estimate that GWE mediate the relationship between GHRM and GIWB is proven to be positive and significant, this means that the hypothesis is accepted. These results indicate that in this study it is called complementary partial mediation. The next result is $t = 1,777$; $p < 0.076$, therefore GWE tidak mampu memediasi the relationship between KOL and GIWB proven to be positive but no significant.

To see whether the influence of exogenous latent variables on endogenous latent variables has a mediating effect, namely with the value recommended by Cohen in (Ogbeibu et al., 2021) namely values of 0.175 (high mediation), 0.075 (medium mediation), and 0.01 (low mediation).

Table 6. Statistik upsilon (v)

No	Mediation	upsilon (v)	mediation effect
1.	GHRM $\rightarrow$ GWE $\rightarrow$ GIWB	0,082	medium influence
2.	KOL $\rightarrow$ GWE $\rightarrow$ GIWB	0,011	low mediation influence

Based on the mediation value above GHRM $\rightarrow$ GWE $\rightarrow$ GIWB with a value of 0.082 (mediation influence leads to medium), and KOL $\rightarrow$ GWE $\rightarrow$ GIWB with a value of 0.011 (mediation influence leads to low), According Ogbeibu, et al, (2021) is 0.01 (low mediation influence), 0.075 (medium mediation influence) and 0.175 (high mediation influence).

Evaluation of model quality can be seen from several measures, namely: R square, according to Hair et al (2019), R square values of 0.75, 0.50 and 0.25 mean substantive (high), moderate and weak influence. Another opinion is according to Chin (1998) in (Henseler et al., 2016) where the R square value is 0.67 (high), 0.33 (moderate), 0.19 (weak); The research results show that R square for GIWB is 0.433 (43,3%) meaning that the influence of KOL and GWE

to GIWB is leads to moderate, the influence of KOL on GWE is 0,538 (53.8%) influence moderate. Q square is how much the model's predictive accuracy (PLS path model's predictive accuracy) is described in Q Square redundancy or Q square, which is a measure that describes how well the model has predictive relevance. If Q square is greater than 0, it shows that the exogenous variable has predictive relevance to the constructed endogenous variable. This value is obtained through a procedure called the blindfolding procedure. The results show that Q^2 for KOL is 0,00, GHRM is 0,000, GWE is 0,397 and GIWB is 0,328. This means that KOL and GHRM have a low values, and GWE and GIWB have moderate values. In Hair et al (2019), if Q square has a value of 0 (low), 0.25 (moderate), 0.50 (high) then the meaning of Q Square is predictive accuracy. F Square effect size measure, which describes how big the influence of the variables in the structural model is. The results showed that the influence of GHRM on GWE was 0.362 (large), KOL on GWE was 0.055 (low), and GWE on GIWB were 0,203 (leads to large). The interpretation of the F Square effect size value in (Hair Jr et al., 2022) and (Henseler et al., 2015) is 0.02 (low) 0.15 (medium) 0.35 (large). The effect size value of F Square only explains the magnitude of the direct effect.

Based on the Standardized Root Mean Square Residual (SRMR), which is a tool for measuring model fit, the average value of all standardized residuals is $0.065 < 0.008$, meaning it has a good model fit value. The condition used is that an SRMR value below 0.08 indicates a fit model, while an SRMR value between 0,08 to 0,10 is still acceptable (Yamin, 2021).

5. Conclusion

Knowledge-oriented leadership (KOL) plays a significant role in influencing green work engagement within a company. KOL emphasizes the importance of leadership that promotes the creation, transfer, storage, and application of knowledge to drive innovation within the organization. Knowledge-oriented leaders tend to value learning and training to enhance employee knowledge and provide incentives to build systems for sharing, storing, and applying organizational knowledge. By fostering a culture that encourages the generation, integration, sharing, and application of knowledge, KOL can create an environment where employees are more engaged in activities related to environmental sustainability and green practices. This engagement can manifest in various ways, such as high involvement in environmental practices, focused thinking on environmental improvements, and providing suggestions to make the organization more environmentally friendly. Overall, Knowledge-Oriented Leadership sets the tone for promoting a culture of continuous learning, knowledge sharing, and innovation, which can positively impact employees' engagement in green initiatives and practices within the company. Green Human Resource Management (GHRM) encompasses various practices and strategies aimed at promoting environmental sustainability within the workplace. Some key components of GHRM that contribute to sustainable practices in the workplace include: Recruitment and Selection: Implementing green practices in the recruitment and selection process by seeking candidates who align with the organization's environmental values and goals. This ensures that employees hired are environmentally conscious and committed to sustainability. Training and Development: Providing training programs focused on environmental awareness, sustainability practices, and green initiatives. This helps employees

understand the importance of environmental conservation and equips them with the knowledge and skills to contribute to sustainable practices within the organization. Performance Management: Incorporating green performance indicators and goals into the performance management system. By evaluating and rewarding employees based on their contributions to environmental sustainability, organizations can motivate staff to actively engage in green practices. Compensation and Rewards: Offering incentives and rewards for employees who demonstrate environmentally friendly behaviors and actively participate in green initiatives. Recognizing and appreciating green efforts can reinforce a culture of sustainability within the workplace. Employee Engagement: Engaging employees in environmental initiatives, encouraging their involvement in green projects, and fostering a sense of ownership towards sustainability goals. By involving employees in decision-making processes related to environmental practices, organizations can enhance their commitment to sustainability. By integrating these key components of Green Human Resource Management into organizational practices, companies can effectively promote and sustain environmentally friendly behaviors in the workplace, contributing to overall environmental sustainability and corporate social responsibility efforts.

To effectively implement the mediation model proposed in the research on Knowledge-Oriented Leadership and Green Human Resource Management to enhance green work initiatives, organizations can follow these steps. Begin by thoroughly understanding the conceptual framework of the mediation model, which involves the relationships between Knowledge-Oriented Leadership, Green Human Resource Management, Green Work Engagement, and Green Innovative Work Behavior. Assess Organizational Readiness: Evaluate the organization's current practices related to leadership, human resource management, and environmental sustainability. Identify areas where improvements can be made to align with the mediation model's principles. Develop a Strategic Plan: Create a strategic plan that outlines how Knowledge-Oriented Leadership and Green Human Resource Management practices will be integrated to enhance green work initiatives. Define specific goals, objectives, and action steps to implement the mediation model effectively. Implement Training Programs: Provide training programs for leaders and HR professionals on Knowledge-Oriented Leadership principles and Green Human Resource Management strategies. Ensure that employees understand the importance of environmental sustainability and their role in promoting green work initiatives. Integrate Green Practices: Incorporate green practices into recruitment, selection, training, performance management, and reward systems based on the key components of Green Human Resource Management. Align these practices with the organization's sustainability goals and objectives. Encourage Employee Engagement: Foster employee engagement in green initiatives by encouraging participation, soliciting feedback, and recognizing contributions to environmental sustainability. Create a supportive environment where employees feel empowered to contribute to green work initiatives. Monitor and Evaluate Progress: Continuously monitor and evaluate the implementation of the mediation model to assess its effectiveness in enhancing green work initiatives. Collect feedback from employees, track key performance indicators related to sustainability, and make adjustments as needed. By following these steps and actively implementing the mediation model proposed in the research,

organizations can effectively enhance their green work initiatives, promote environmental sustainability, and create a culture of eco-consciousness within the workplace.

In conclusion, the integration of Knowledge-Oriented Leadership and Green Human Resource Management practices can significantly impact green work engagement and innovative behavior within organizations. Knowledge-oriented leadership emphasizes the importance of creating, sharing, and applying knowledge to drive innovation and sustainability initiatives. Green Human Resource Management focuses on incorporating environmentally friendly practices into HR processes to promote sustainability and engage employees in green initiatives. By understanding the key components of Green Human Resource Management, organizations can effectively recruit, train, and reward employees who demonstrate environmentally conscious behaviors. Implementing the mediation model proposed in the research can help organizations enhance their green work initiatives by aligning leadership practices with sustainability goals, fostering employee engagement in environmental initiatives, and monitoring progress toward sustainability objectives. Overall, by embracing Knowledge-Oriented Leadership and Green Human Resource Management principles, organizations can create a culture of sustainability, drive innovation, and contribute to a greener and more environmentally conscious workplace. This holistic approach not only benefits the organization but also supports broader environmental conservation efforts and promotes corporate social responsibility.

Limitation and future Research. To conclude the discussion on the limitations of this research, it is important to know that any research has limitations that need to be considered in its interpretation and application. Although this research provides valuable insights into the relationship between Knowledge-Oriented Leadership, Environmentally Friendly Human Resource Management, and environmentally friendly work initiatives, there are some limitations to be known. With a clear understanding of the limitations of this research, then researchers and practitioners can take appropriate steps to enhance and expand existing knowledge. By doing so, further research can overcome these limitations and make a greater contribution to understanding how Knowledge-Oriented Leadership and Environmentally Friendly Human Resource Management can be applied effectively to boost innovation and sustainability performance in the workplace. By recognizing these constraints, future research is expected to overcome such constraint and provide a deeper insight into the application of the proposed model of mediation in different organizational contexts. Therefore, practical and strategic measures can be developed to encourage innovative and environmentally friendly work behaviour in various types of organizations. Through careful consideration of the limitations of this research, we can continue to refine and develop knowledge about the importance of Knowledge-Oriented Leadership and Environmentally Friendly Human Resource Management in creating a sustainable and innovative working environment.

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