



Green Innovation as a Mediator between Green Human Resource Management and Environmental Performance: Evidence from the Indian Textile Industry

Bharat Kumar Lakra

Assistant Professor (Stage-III)

Department of Industrial Relations & Personnel Management

Berhampur University Bhanja Bihar

Berhampur-760007

Odisha, India

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ABSTRACT

This study emphasizes organizations' need to integrate Green Human Resource Management (GHRM) with environmental performance (ENP) to enhance sustainable ecological outcomes. It examines the mediating role of green innovation (GRIV) in the relationship between GHRM and ENP within India's textile industry. A cross-sectional survey was conducted to assess employees' perceptions of the relationship between GHRM, GRIV, and ENP. Using simple random sampling, 250 questionnaires were distributed, with 211 valid responses analysed via Smart PLS. The study reveals that GHRM positively influences both ENP ($\beta = 0.201$, $p < 0.002$) and GRIV ($\beta = 0.166$, $p < 0.021$). In turn, GRIV positively impacts ENP ($\beta = 0.587$, $p < 0.000$) and mediates the relationship between GHRM and ENP ($\beta = 0.097$, $p < 0.027$). This suggests that integrating GHRM with GRIV fosters employee engagement in environmental management and promoting sustainability. The study is limited to the Alok textile industry in Western India, restricting its generalizability. Its cross-sectional design prevents causal conclusions, and focusing on one country and industry may limit broader applicability. However, it provides insights for top management to invest in green training, performance appraisals, and incentives for improving sustainability for the organisation and environmental management. This study provides valuable insights into the role of GHRM in enhancing ENP and confirms GRIV as a key mediator. The findings offer significant implications for textiles and other industries that provide a roadmap for adopting sustainable business practices.

KEYWORDS: Green human resource management, Environmental performance, Green innovation, Sustainability, Indian textile industry

I. INTRODUCTION

Environmental sustainability and green innovation are essential for society and organizations. The alarming effect of the textile industry has the fourth-highest impact on the environment (European Commission, 2021). The textile sector is believed to be among the world's most polluting industries because of dangerous chemicals and excessive energy and water consumption (Roy Choudhury, 2014). Hence, the environment is severely disrupted by intense changes in the global environment (Busch, 2011). These climate change and environmental deteriorations resulting in Global warming have raised stakeholders' concerns about rising environmental problems. In the context of alarming environmental issues and the United Nations 2020 sustainable development goals (Arora and Mishra, 2019), the Indian textile industry faces numerous challenges in achieving and maintaining sustainable environmental practices.

In light of the pressing environmental sustainability challenges and responding to different stakeholder pressures requires the organization to adopt green human resource management (GHRM) as a strategy to enhance the innovation and creativity capabilities of the available resources to address these environmental challenges (Song and Yu, 2018; Sroufe and Joseph, 2017). Environmental performance is essential for preserving organizational performance while protecting the environment from harmful impacts, including waste, pollution, and atmospheric emissions. Thus, GHRM practices are becoming pivotal to enhancing environmental performance and gaining a competitive advantage over its competitors (Guerci *et al.*, 2016).

GHRM is an essential mechanism for adapting green strategies that alleviate ecological uncertainty and its underlying causes of



environmental degradation (Tashman and Rivera, 2016). GHRM focuses on recruiting, developing, and managing employees in a way that encourages environmentally sustainable behaviours and practices. It consists of a collection of HRM techniques intended to improve environmental performance, including as green hiring, green performance, and remuneration, and green training and involvement (Renwick *et al.*, 2016). According to Longoni *et al.* (2018), these environmentally friendly HR procedures can encourage employee competency and motivation while allowing them to engage in eco-friendly activities. These procedures show a company's attitude towards environmental preservation and take the form of several environmentally friendly human resources procedures (Ren *et al.*, 2018).

Considering the significance of GHRM in assessing a company's sustainability, a great deal of research has been done on the subject's causes, effects, and expansion (Shaaban, 2024). The relationship between GHRM and employee behaviours and organizational outcomes has been covered in the literature on GHRM (Tang *et al.*, 2018; Saeed *et al.*, 2019). For instance, Dumont *et al.* (2017) created a GHRM measurement and examined its impact on environmentally friendly employee actions. According to Dumont *et al.* (2017), they discovered that GHRM has a beneficial impact on employees' in-role green behaviour and indirectly influences their extra-role green behaviour through a psychological green climate. According to Saeed *et al.* (2019), pro-environmental psychological capital is positively impacted by GHRM, and this, in turn, influences pro-environmental behaviour on the part of employees.

However, without clear mechanisms to translate GHRM efforts into measurable environmental outcomes, the full potential of these activities might not be realized. Exploring how green innovation serves as a mediating factor offers valuable insights into how HR policies can directly influence environmental performance by fostering a culture of innovation and continuous improvement. Previous research suggests that organizations incorporating sustainability through innovation not only achieve better environmental results but also experience financial benefits such as cost reductions, enhanced brand reputation, and a competitive advantage in green markets (Tang *et al.*, 2018). Understanding the role of green innovation as a bridge between GHRM and environmental outcomes can emphasize the importance of integrating an innovative culture into sustainability strategies, illustrating why this approach is essential

for businesses striving for leadership in their industries (Zihan and Makhbul, 2024). As a proactive strategy organizations can use to enhance their ENP, GHRM has gained significant traction in the past ten years (Wilson and Bryant, 2021). Researchers still need to look at how and when GHRM influences organizational GRIV, even if they have established the impact of GHRM on employee and organizational outcomes (Singh *et al.*, 2019a). To bridge these gaps, the researcher addresses the following three research questions (RQ):

RQ1. What is the direct effect of GHRM practices on ENP in the Indian textile sector?

RQ2. How does GRIV mediate the relationship between GHRM and ENP?

RQ3. What is the critical insights of combined impact of GHRM and GRIV on improving ENP in the Indian textile industry?

This study was carried out in the Alok textile industry, a major player in India's textile sector. Alok Industries Limited stands as one of the country's largest vertically integrated textile enterprises, providing end-to-end solutions across key segments such as Home Textiles, Cotton Yarn, Apparel Fabric, Garments, and Polyester Yarn. With nearly forty years of industry leadership, Alok has established itself as a frontrunner, consistently delivering high-quality textile products, adhering to strict delivery timelines, and maintaining internationally competitive standards.

In today's competitive business environment, where organizations are increasingly held accountable for their environmental impact, the role of GRIV in helping to bridge the gap between ENP and GHRM is most important (Aftab *et al.*, 2023a). Therefore, this study aims to understand how GHRM and GRIV help abate organizational environmental impacts and improve environmental performance (ENP). However, the interconnection of GRIV and GHRM has yet to receive much experimental attention. This empirical study fills these gaps in the literature by using GRIV as a mediator to investigate its impact on the connection between GHRM and ENP. Regarding the effect of GRIV on GHRM and ENP, the prior evidence is not conclusive (Pham *et al.*, 2020). Hence, this study provides conclusive results in this regard.

To continue this paper is organized as follows: The theoretical underpinnings, a review of the literature on GHRM, environmental performance, GRIV, and the hypothesis-development process are presented in Section 2. Section 3 presents the methodology, and Section 4 presents the findings of the results. The discussion,



theoretical and practical implications, constraints, and directions for further research are the main topics of Section 5. The paper's conclusion is provided in Section 6.

II. LITERATURE REVIEW AND THEORETICAL BACKGROUND

2.1. Theoretical background

This paper segment examines and reviews hypotheses supporting the GHRM-related concepts. The review procedure selected pertinent and useful organizational theories that influence GHRM, such as resource-based view (RBV) and ability-motivation-opportunity (AMO) theory from the perspective of GHRM.

2.1.1. Resource-based view (RBV) Theory: According to this notion, unique and specialist resources provide a competitive advantage over competitors. Thus, organizational competencies and the firm's capacity to sustain and apply them effectively over time are critical factors in business and environmental strategies (Vihervaara and Kamppinen, 2009). Attaining a superior level of internal environmental capability is a precondition for achieving an organization's essential eco-friendly competencies, such as pollution avoidance (Collins, 2021). This theory highlights the creating competitive advantage by highlighting the outcome of GHRM at the organizational level (green recruitment, green training, and development, green performance appraisal, and green compensation) as well as at the individual level (green behaviour, green competencies, and green behaviour) to improve the organization's overall performance in terms of its environmental impact. Thus, the RBV theory and the green workforce outcomes are crucial from an internal perspective.

2.1.2. Ability, motivation, and opportunity (AMO) Theory: According to this notion, GHRM depends on an employee's capacity, drive, and opportunity at all levels. The performance of the organization's environment may be assessed at the individual, team, department, or organizational levels. However, to operate environmentally friendly, employees must possess green abilities. When it comes to motivation, it is an individual's mental state that indicates that they are enthusiastic about their work because they find it enjoyable or extremely important (Iddagoda *et al.*, 2016). Therefore, it is imperative that the organization's top managers, who have the requisite authority, create initiatives that encourage their staff to carry out eco-friendly tasks to meet environmental goals. Therefore, the GHRM

performance could come under the purview of AMO theory.

Combining these distinct theories makes it easier to comprehend how human resource-focused awareness campaigns, incentives, and motivational elements may give businesses using GHRM practices a sustainable competitive advantage for sustainable ENP for the organization.

2.2.: GHRM: The link between human resource management and environmental management

The term "green human resource management" (GHRM) is used in this study. GHRM is focused on human resource management, which deals with environmental management (Renwick *et al.*, 2008; Saeed *et al.*, 2019). Previous studies on GHRM have specialized protocols to put GHRM into practice. For instance, four phases were suggested for an environmental HRM model by Tang *et al.* (2018): An environmental vision needs to function as a roadmap. Employees ought to receive communication training on their environmental goals and objectives. Performance reviews for employees are necessary. Lastly, incentive schemes should be employed to acknowledge staff members' environmental contributions. According to the proposed model, senior executive help, training, empowerment, and rewards are the four main elements of environmental HR. Employees are informed by upper management about the company's environmental standards, strategy, and other pertinent details. Additionally, rewards and incentives encourage workers to practice ecological obligation. Moreover, Sharma (2016) classified components of environmental management from the HR perspective. Initially, GHRM focuses on teaching green skills for selecting, training, and developing green performance targets (Ahakwa *et al.*, 2021). Second, GHRM assesses and rewards employees for their environmentally conscious work (Irani and Kilic, 2022). This helps to motivate green personnel. Third, GRIV behaviour and the GHRM promote employee environmental management involvement (Noor *et al.*, 2023).

2.3. Hypothesis development

2.3.1. Green human resource management and environmental performance

GHRM practices improve environmental performance through green hiring practices which boost long-term performance evaluations and inform staff about green business initiatives like reducing waste and environmental harm. This, in turn, contributes to enhanced environmental performance (Rani and Mishra, 2014). GHRM practices must include green recruitment and selection. Training



employees is essential to equip them with new knowledge, skills, and abilities to make wise decisions about GHRM practices (Ali *et al.*, 2022). Additionally, using measurement matrices for the entire organization is necessary for long-term environmental performance to track waste and resource usage. An essential part of GHRM is using green performance and appraisal techniques. Thus, the study proposes the following hypothesis:

H1. GHRM has a positive impact on environmental performance.

2.3.2. Green human resource management and green innovation

GHRM is becoming more widely acknowledged as a vital strategy for putting green practices into action that improve environmental performance and lead to sustainable development (Aftab *et al.*, 2023b). Consequently, a great deal of research has looked into how and when GHRM impacts environmental performance, which can give a company a competitive edge (Guerci *et al.*, 2016). Green innovation refers to developing eco-friendly products and processes through the adoption of organizational practices such as reduced use of water, power, and other resources; use of fewer resources when designing goods with an eye on lowering emissions; and sustainability in raw material procurement (Ali *et al.*, 2022).

GHRM has a favourable impact on green innovation. First, employing people who are more sensitive to environmental values will lead to them participating in more environmentally friendly activities, which makes the company more appealing when it comes to environmental management (Baumgartner, 2014). High environmental ability and sensitivity workers can provide more creative and practical solutions for environmental management, which will boost the company's green innovation. Second, organizational involvement and training programs can give staff members the chance to acquire the knowledge and abilities needed to improve their creativity for innovation (Shipton *et al.*, 2006). In particular, a company that prioritizes green engagement and training can encourage the development of fresh concepts for environmentally friendly production or process innovation (Ogiemwonyi *et al.*, 2023) by assisting its staff in gaining environmental knowledge and skills (Stefanelli *et al.*, 2020). Third, according to Guerci and Carollo (2016), green performance management and pay techniques can assist in coordinating employee behaviour with the company's environmental objectives. Green performance management is a useful tool for enhancing employee environmental commitment

and, consequently, their readiness to participate in eco-friendly innovation, even if green innovation is the area of environmental management that directly addresses environmental performance (Renwick *et al.*, 2013).

Therefore, it is considered that these three dimensions of GHRM practices as a whole, contribute to green innovation. By the logic outlined above, GHRM practices can promote employees' ability, motivation, and opportunities, thereby enhancing their unique knowledge of green product or process innovation. Accordingly, it suggests the proposition:

H2. GHRM has a positive impact on green innovation.

2.3.3. Green innovation and environmental performance

Previous research studies indicate that environmental performance is positively affected by the efficiency of sustainable, environmentally friendly management goods, quality improvement, and integration of environmental and economic green practices into overall business proficiency and effectiveness (Aftab *et al.*, 2023). Another significant piece of the prior study found that GRIV improves environmental performance and is linked to corporate methodologies (Adekoya *et al.*, 2023). Furthermore, by decreasing material waste, green production improvement improves a company's economic and individual performance while reducing its adverse effects on the environment (Awan *et al.*, 2021). The business will use these organizational assets to advance its ecological performance through resource-based views and competitive advantage; according to the evaluation, innovative green product innovations and practices are crucial organizational advantages (Ahmed *et al.*, 2020). The breakthroughs mentioned above in green products are linked to emerging GRIV in the organizational context. They are anticipated to impact the firm's environmental performance directly. Thus, the hypothesis is proposed as below:

H3. Green innovation has a positive impact on environmental performance.

2.3.4. Mediating role of green innovation

Business organizations have always been compelled by environmental harm to lessen the environmental impact of their production and operation processes. Consequently, firms are compelled to deal with adverse environmental impacts. So, to address these issues GHRM acts as a powerful catalyst for fostering GRIV within firms. By embedding sustainability into HR practices—such as recruitment, training, and performance

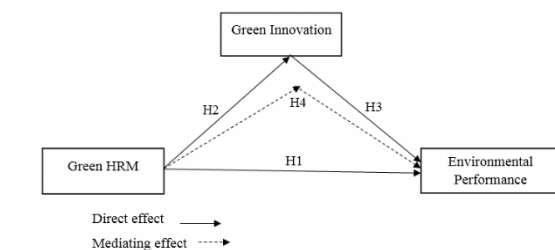


appraisals—GHRM cultivates a culture that encourages employees to pursue eco-friendly solutions and green creativity (Chen *et al.*, 2006; Guo *et al.*, 2021). This green-focused culture becomes a key driver for GRIV, helping organizations adopt cutting-edge, environmentally sustainable practices (Song and Yu, 2018). GHRM lays the groundwork by promoting green behaviours and values, and GRIV translates these efforts into tangible environmental outcomes. This includes the development of new products, processes, or technologies that reduce waste, improve energy efficiency, and minimize a firm's environmental footprint (Chen *et al.*, 2006). Without GRIV, the positive impact of GHRM on environmental performance may remain limited or indirect. By leveraging GRIV, firms can not only meet sustainability objectives but also enhance their competitiveness in increasingly eco-conscious businesses (Diana, 2024).

In earlier research, GRIV, talent management, and advantage in business analytics were used to mediate between financial resources and financial performance (Tran *et al.*, 2020). Leading the way to further empirically study this mediated connection between HRM practices and environmental performance, theoretical proposals based on RBV theory and AMO theory have been made. Therefore, the worker's ability, drive, and opportunity are anticipated to predict the relationship between HRM, innovation, and performance. Hence, GHRM practices in organizations seek to recruit, motivate, reward, and sustain employee job behaviours toward environmental management through the development of green processes and products for superior green firm performance (Renwick *et al.*, 2008). As a result, the below-given assertion is made:

H4. Green innovation mediates the connection between GHRM and environmental performance.

Figure I: Conceptual model of the study



Source: Author owns work

3.1. Participants and procedures

This study applied a cross-sectional survey method to evaluate the employees' perception of GHRM practices in the Alok textile industry, in India. Simple random selection was utilized to figure out each respondent from the industry. The data collection was done by adopting closed-ended questionnaires through online mail and WhatsApp of the different departments of the selected pool of employees of the Alok textile industry. A total of 250 questionnaires were distributed by utilizing e-mail and WhatsApp to the employees, and responses received 211 questionnaires were valid (84.4 percent responses). The respondents were asked to complete a survey to assess the GRIV, ENP, and GHRM practices in the Alok textile industry. The data collection was done from the month of 10th April 2023 to 25th June 2023.

Using G-Power version 3.1, the sample size was computed. Testing the model with three constructs requires 106 samples based on a power of 0.95 and an effect size of 0.10. In addition, Sarstedt *et al.* (2021) suggested that using partial least squares (PLS-SEM) requires a minimum threshold of 100 samples. To mitigate the potential drawbacks of a limited sample size, 211 employees of the Alok textile industry provided data for this study.

3.2. Measurements

This study model comprises three constructs. All these three constructs were measured by a five-point Likert scale. The scale varies from 1 strongly disagree to 5 strongly agree to reply in the questionnaire's appropriate boxes. The measurement scales were drawn from the previously tested and validated published literature to suit the context of the present study. A pilot study was done with 35 respondents, three from academics and five from professional experts' suggestions. The study was conducted through telephone discussion to examine the validity and reliability of the research instrument. The researcher got satisfactory results from the pilot study and conducted a final survey. A 13-item survey was designed to examine how GHRM procedures affected GRIV and ENP. GHRM: A 6-item scale by Dumont *et al.* (2017) was used to identify the GHRM activities. ENP: A 4-item scale created by Li, R., and Ramanathan (2018) was used to assess the environmental performance. GRIV: A 3-item scale was used, which was introduced by Chen *et al.* (2006) for drawing the GRIV ideas and practices of the industry.

3.3. Common method bias

III. METHODOLOGY



The data were collected and utilized a cross-sectional design, encompassing both endogenous and exogenous constructs. Consequently, common method bias (CMB) could affect the results. To address this issue, a complete collinearity test was conducted to identify common method bias (CMB) in the self-reported data set. This is due to the possibility that CMB would cause problems for the study if more than one construct were measured using the same procedure (Podsakoff *et al.*, 2003). To overcome CMB, this study used Smart PLS software to find variance inflation factors (VIFs) for each latent variable in the research model. The result shows that VIF values are smaller than 3.3, indicating no collinearity between the constructs (Kock, 2015). Hence, this study suggests no issues in CMB.

3.4. Statistical tools

Smart PLS 4 and SPSS 25 were used to analyse the research model. Using this most recent program, unobserved constructs' graphical path modeling can be done simultaneously. This study includes reflective constructs, to which the researcher applied the PLS algorithm analysis using Smart PLS-4 (Ringle *et al.*, 2020).

IV. FINDINGS

4.1. Demographic profile of the respondents

Table I. Demographic profile of the respondents

Variable	Population	Percentage
<i>Age Group</i>		
21 to 30 yrs	97	46
31 to 40 yrs	46	21.8
41 to 50 yrs	35	16.6
51 to 60 yrs	27	12.8
More than 60 yrs	6	2.8
<i>Category of Employees</i>		
Managerial	55	26.1
Non- Managerial	156	73.9
<i>Educational Qualification</i>		
Graduate/B.Tech	61	28.9
Intermediate/ ITI/Diploma	133	63
Post Graduate/M.Tech	17	8.1

Job Experience



Less than 5 yrs	72	34.1
5 to 10 yrs	76	36
11 to 15 yrs	44	20.9
More than 15 years	19	9

Source: Author own's work

4.2. Statistical analysis

Table II. Summary of the descriptive statistics of the constructs.

Variables (n =211)	Mean	SD	α	Skewness	Kurtosis	(1)	(2)	(3)
(1) GHRM	4.23	0.82	0.92	-1.48	0.62	1		
(2) GRIV	4.34	0.73	0.86	-1.46	1.55	.28**	1	
(3) ENP	4.23	0.79	0.85	-1.70	1.67	.26**	.29**	1

SD = Standard deviation; α = Cronbach alpha. **p< 0.01.

Source: Author own's work

4.2.1. Assessment of measurement model

To verify the measurement model, this section first describes the convergent validity criteria and then the discriminant validity requirements. To evaluate the measurement model, Hair *et al.* (2019) state that necessary to look at the validity and reliability of the connection between the latent constructs and the corresponding observed variables. Henseler and Chin (2010) state that the three primary requirements for this analysis of convergent validity are factor loading, average variance extracted (AVE), and composite reliability (CR).

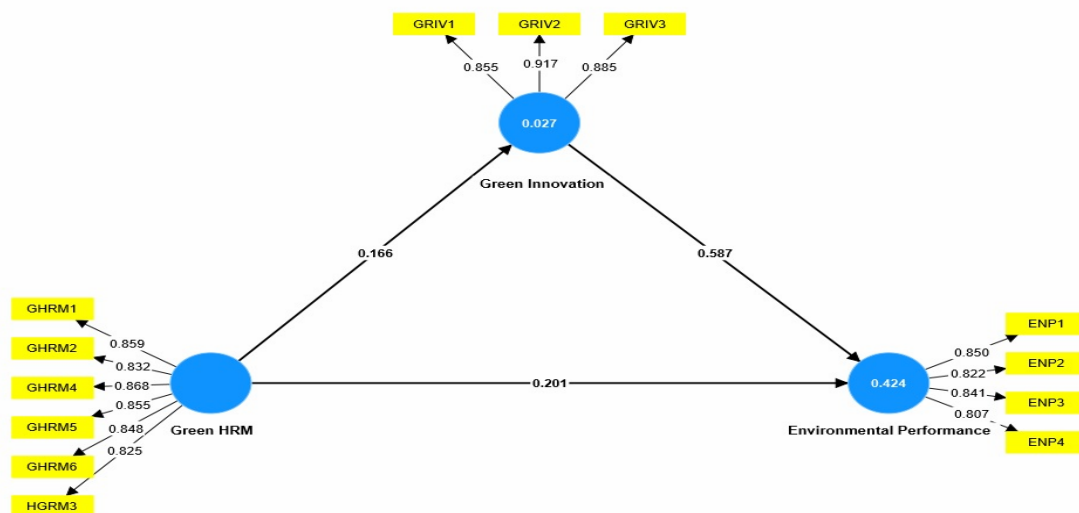


Figure II: Measurement model



Source: Author own work

This study measurement model consists of three constructs, namely GHRM, GRIV, and ENP. The PLS algorithm approach was used to confirm the accuracy of the measurement model displayed in Figure II. As per the guidelines, the loadings of the linked items for each construct should be examined and should be greater than 0.7 to evaluate the indicator's reliability (Hair, Risher *et al.*, 2019). If CR and AVE are above the threshold, loadings in the range of 0.4 to 0.7 are deemed acceptable (Afthanorhan *et al.*, 2020).

Table III indicates that every latent variable in the measurement model has values greater than 0.8 for both Cronbach's alpha and CR. Additionally, every factor loading was more than 0.7, and every construct had an AVE > 0.5, ranging from 0.540 to 0.648. As a result, the findings show that the latent variables' convergent validity is acceptable (Kamis *et al.*, 2020).

The discriminant validity test comes next. The degree to which each construct in the model is unique from the other constructs and the number of indicators that indicate a single construct is known as discriminant validity (Hair Jr *et al.*, 2020). The discriminant validity of the model's constructs is evaluated using several criteria. The Fornell-Larcker criterion and the heterotrait-monotrait (HTMT) ratio are the two most conservative approaches. According to J. Hair *et al.* (2023), each construct's square root of the AVE must be larger than the correlation between it and the other constructs in the model to assess discriminant validity using the Fornell-Larcker criterion. The correlations between the constructs on the diagonal and the square root of the AVE for each construct are displayed in Table IV.

Additionally, Table IV shows that the model exhibits a respectable level of discriminant validity. Furthermore, according to (Henseler *et al.*, 2015), a more cautious cut-off value for determining discriminant validity is the HTMT criterion, which should be less than 0.9 or 0.85. In Table V, the HTMT is displayed. Every construct has a value of less than 0.85. Therefore, the HTMT 0.85 and the Fornell-Larcker criterion demonstrate that the measurement model's discriminant validity is satisfactory.

Table III. Validity and reliability of the constructs

Constructs	Items	Loadings	α	CR(rho_a)	CR (rho_c)	AVE
	ENP1		0.850	0.852		0.689



ENP		0.850			0.899	
	ENP2	0.822				
	ENP3	0.841				
	ENP4	0.807				
GHRM	GHRM1	0.859	0.922	0.934	0.939	0.719
	GHRM2	0.832				
	GHRM3	0.825				
	GHRM4	0.868				
	GHRM5	0.855				
	GHRM6	0.848				
GRIV	GRIV1	0.855	0.863	0.867	0.917	0.786
	GRIV2	0.917				
	GRIV3	0.885				

Source: Author own's work

Table IV. Discriminant validity using the Fornell-Larcker criterion

Constructs	ENP	GHRM	GRIV
ENP	0.83		
GHRM	0.298	0.848	
GRIV	0.620	0.166	0.886

Note: The diagonal in bold indicates the square roots of the average variance extracted (AVE).

Source: Author own's work

Table V. Discriminant validity using HTMT 0.8 criterion

Constructs	ENP	GHRM	GRIV
ENP			
GHRM	0.331		
GRIV	0.72	0.181	

Source: Author own's work

4.2. 2. Assessment of the structural model

Analysis of the structural model can be done when the measurement model has been satisfactorily validated. Hair *et al.* (2017) state that evaluating the coefficient of determination (R^2) for every endogenous latent variable is the first step in evaluating the PLS structural equation model. According to Chin *et al.* (2020), R^2 is utilized to clarify the amount of variance in predicted outcomes in the model. For the model to have a minimal degree of explanatory power, these numbers ought to be high enough. Chin (2010) says that the R^2 values of 0.67, 0.33, and 0.19 are significant, moderate, and weak, respectively.

Table VI presents the evaluation of the coefficient of determination (R^2), the predictive relevance (Q^2), and the effect size (f^2) of independent variables on endogenous variables of ENP and

GRIV in the model. The table showed that GHRM and GRIV accounted for 42.4% of the total variance of ENP, with an R^2 of 0.424. On the other hand, the R^2 of 0.027 indicated that GHRM explained 2.7% of the variance in GRIV.

The assessment of the model's predictive power also requires consideration of Stone-Geisser's Q^2 , as noted by W. Chin *et al.* (2020). The model's prediction ability was evaluated using a blindfolding technique. According to J. Hair *et al.* (2017), if the Q^2 assessment score exceeds 0, it indicates predictive importance for defining criterion variables. The SmartPLS4 cross-validated redundancy results show that Q^2 values for each endogenous construct are more than zero. The Q^2 values of the GRIV and ENP were 0.011 and 0.069, respectively. Therefore, the predictive



importance is indicated by the endogenous variable values in the model.

Additionally, the effect size (f^2) was calculated to show whether the predictor variable significantly influences the criterion variable in the model. According to Tomczak and Tomczak (2014) guidelines, f^2 values greater than 0.02, 0.15, and 0.35, respectively, denote weak, medium, and strong impact sizes. The study found that GHRM has a weak impact on GRIV (0.028) and environmental performance (0.068). Similarly, environmental performance is significantly impacted by GRIV (0.581).

The standard root mean square residual (SRMR) was used to determine the model fit. According to Sivo *et al.*(2006), an appropriate model fit is indicated if the SRMR value is less than 0.08. SRMR is the root mean square disagreement between the observed and model-implied correlations. With an SRMR value of 0.05 and an NFI of 0.91, the research model satisfies the requirements for a satisfactory fit.

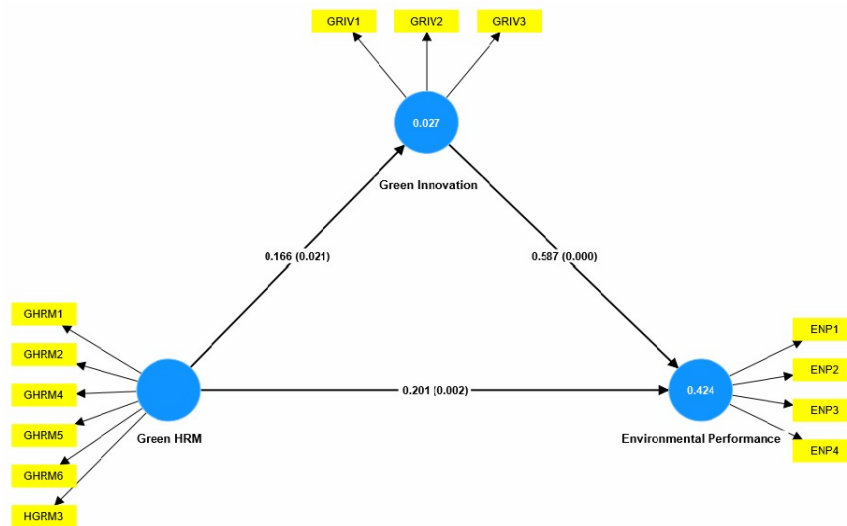


Figure III: PLS algorithm results for the assessment of the structural model
 Source: Author own's work

Table VI. Coefficient of determination (R^2), predictive relevance (Q^2) and effect size (f^2)

Constructs	R^2	Q^2	f^2	Decision
ENP	0.424	0.069	0.581 ^a	Strong
GRIV	0.270	0.011	0.068 ^a ; 0.028 ^b	Weak; Weak
GHRM				

Note: ^aENP; ^bGRIV

Source: Author own's work

Table VII. Direct effect of hypothesis testing: structural model/hypothesis testing

Hypothesis	Relationship	β	t-stat.	p-values	CI	Decision
H1	GHRM-> ENP	0.201	3.128	0.002	[0.077 0.331]	Supported



H2	GHRM -> GRIV	0.166	2.308	0.021	[0.029 0.310]	Supported
H3	GRIV-> ENP	0.587	9.187	0.000	[0.455 0.704]	Supported

Note: GHRM: GHRM, ENP: Environmental Performance, GRIV: Green Innovation, CI: Confidence Interval (Bias Corrected)

Source: Author own's work

Table VIII. Testing of the mediation hypothesis

Hypothesis	Relationship	β	t-stat.	p-values	CI	Decision
H4	GHRM-> GRIV->ENP	0.097	2.208	0.027	[0.067 0.349]	Supported

Note: GHRM: GHRM, ENP: Environmental Performance, GRIV: Green Innovation, CI: Confidence Interval (Bias Corrected)

Source: Author own's work

In the current study, the bootstrapping method was used with 5000 re-samples for the hypothesis testing, as suggested by Hair *et al.*(2017).The statistical measurements of t-value, p-value, and confidence interval bias adjusted were utilized to determine whether a hypothesis was accepted. This study developed four hypotheses, and all were supported. In Table VII, the findings of the results established that GHRM had a direct and positive effect on both ENP ($\beta = 0.201$, t-value = 3.128, $p < 0.002$) and GRIV ($\beta = 0.166$, t-value = 2.308, $P < 0.021$).Furthermore, the results showed that GRIV has a positive impact on EVP ($\beta = 0.587$ and $t = 9.187$, $p < 0.000$). The findings support the three direct hypotheses (H1, H2, and H3), as indicated by the high path coefficient, t-value > 1.96 and p-value < 0.05, and the bootstrapping of the 95% confidence interval excluding the value 0. As a result, this study has a substantial impact on all direct effects. In Table VIII, the result shows the indirect effects hypotheses refer to the mediator. In evaluating the result of one mediating hypothesis, the result revealed that GRIV mediates between GHRM and ENP ($\beta = 0.097$, t-value = 2.208, $p < 0.027$). Hence, the mediating hypothesis (H4) was supported (Figure 3). It was found that GRIV increased EVP, but GHRM directly improved ENP and GRIV. It was also revealed that GRIV acted as a mediator between GHRM and ENP, confirming its role in the model.

V. DISCUSSION

The importance of HRM in enhancing environmental management has recently garnered significant attention from academics (Ren *et al.*, 2023). To gain a better understanding, this study investigated the critical variables that underpin ENP and GHRM, as well as the mediating function of GRIV in this relationship.

This study finding confirmed the hypothesis (H₁) that GHRM improves ENP. The GHRM is an essential intervention for accomplishing organizational objectives and increasing an organization's ENP through employee involvement in green initiatives (Aggarwal and Agarwala, 2023). The importance of proactive environmental management, or GHRM, in enhancing an organization's ENP was validated by Lopez-Gamero *et al.*(2011). Other research(Ahakwa *et al.*, 2021; Aftab *et al.*, 2023) supports these findings. Additionally, this is in line with the resource-based perspective theory, which applies to both developed and developing nations(Salsabila *et al.*, 2022).So, it is vital for HRM practice to integrate sustainability goals into performance evaluations, recognizing and rewarding employees for their contributions to environmental sustainability(Ahakwa *et al.*, 2021). Therefore, the study's findings confirm that GHRM policies that encourage environmentally friendly behaviour, such as motivating and rewarding employees, can improve an organization's ENP.

Next, the finding of hypothesis (H₂) of the study also established a positive relationship between GHRM and the promotion of GRIV within organizations. This finding indicates that organizations that implement GHRM practices are more likely to foster a culture of innovation focused on ENP(El-Kassar and Singh, 2019).This is consistent with earlier studies(Muisyo *et al.*, 2022;Shahzad *et al.*, 2023)that have emphasized the function of GHRM in assisting GRIV methods. The synergy between GHRM and GRIV is crucial for organizations seeking long-term success in today's competitive business environment. By using GHRM techniques to promote an environmentally conscious culture, organizations can effectively stimulate green creativity, ultimately leading to GRIV, which propels them ahead in the market (Adekoya *et al.*,



2023). Through the use of GHRM practices, organizations create a supportive and conducive environment for employees to generate and implement innovative ideas related to sustainable ENP.

Furthermore, the results investigated the hypothesis (H3) that GRIV and ENP had a positive association between them. The study by Malik *et al.* (2023) presents convincing evidence that environmental disclosure directly benefits a company's financial success through GRIV in Chinese businesses. In addition, the research by Kraus *et al.* (2020) further emphasizes the multifaceted benefits of GRIV, particularly in the realm of organizational performance. The study suggests that through waste and cost reduction initiatives facilitated by GRIV, organizations can achieve resource savings, cost-effectiveness, and operational efficiency. Building upon this, Borsatto & Amui's (2019) findings indicated that the factors that preceded GRIV, the industrial businesses' size, and the strictness of national environmental legislation had a statistically significant beneficial influence. Hence, organizations must prioritize GRIV and integrate it into their core business strategies to build a more sustainable future for generations to come. These results are consistent with other research that has highlighted the role that GRIV plays in tackling environmental issues and advancing sustainability by integrating environmental planning into overall business strategy with innovative technology (Liu *et al.*, 2020).

The present study provides additional evidence in support of hypothesis (H4) that GRIV functions as a mediator in the link between GHRM and ENP. To clarify, organizations that integrate GRIV into their product development and processes do so with a deliberate emphasis on minimizing adverse environmental consequences. This strategic integration with environmentally conscious innovation ultimately leads to a noticeable increase in ENP. Hence, GRIV catalyzes ENP by enabling organizations to develop and implement new processes, technologies, and products that contribute to environmentally sustainable practices. This aligns seamlessly with the insights from Kraus *et al.* (2020) research, which emphasized the moderating role of GRIV in the association between ENP and corporate social responsibility. Further, The mediation results emphasized the need for environmental strategy, GRIV, and pro-environmental behaviour to achieve superior ENP (Aftab *et al.*, 2023a). The evidence suggests that organizations leveraging GRIV practices are

better positioned to navigate and positively influence their ENP and GHRM, which shows consistent results with the previous studies (Malik *et al.*, 2023). Hence, this demonstrates that, within the framework of this study, the incorporation of GRIV as a mediator is consistent with the ambidextrous perspective, enabling organizations to make use of GHRM practices while concurrently investigating novel paths toward sustainable ENP (Tran *et al.*, 2020).

5.1. Theoretical contributions

The results of this investigation provide scholars and researchers with critical theoretical insights. First, this study offers empirical evidence on the mediating role of GRIV between GHRM and ENP within the Indian textile industry. Hence, the study adds to the body of existing literature, which is most notably interconnection between the RBV theory, and AMO theory.

Secondly, it goes beyond RBV theory to include the idea that a firm's ability to utilize particular organizational competencies effectively in aligning environmental strategy into the organization's HRM functions to enhance the organization's ENP.

Third, it incorporates the AMO theory into the new field of GHRM research, using the psychological framework of employee innovation and support for environmental efforts to explain the relationship between GHRM practices and environmental behaviours on the part of employees.

Fourth, by examining the mediating role of GRIV on GHRM practices and ENP in the textile industry, this study's findings pave the way for comparative study across industries to investigate sector-specific differences in green practices and their outcomes.

5.2. Practical implications

This study's findings have several implications for sustainable practices for the textile industry. First, this study provides HR managers with a focus on Strategic HR Policies, as the study provides concrete evidence of integrating GHRM practices to enhance green innovation in the organization.

Second, the results of the current study demonstrate that GRIV is the critical component that this study used to expound on the idea of ENP with GHRM practices. It offers significant insights to senior management in investing in training programs, green performance appraisal, and link incentive and rewards systems to drive eco-friendly behaviours among the employees. Practical steps could include fostering an organizational culture that encourages creativity, collaboration, and green technological development.



Third, to enhance the textile industry performance, leveraging green innovation through effective Green Human Resource Management (GHRM) can boost environmental outcomes and environmentally sustainable performance.

5.3. Societal Implications

First, the textile industry's enhanced environmental performance benefits both the local community and the environment at large by lowering ecological consequences including pollution and resource depletion. Second, sustainable business practices raise awareness among consumers and stakeholders about the role of green innovation in addressing environmental challenges. Third, legislators and policymakers might be persuaded to enact laws and incentives that encourage green innovation and GHRM, which would raise environmental standards and practices.

5.4. Limitation and future research direction

The results should be evaluated in the context of the study's inherent limitations, even if this investigation moves the HRM literature forward by exploring a novel research avenue about how GRIV mediates the connotations between GHRM and ENP. First of all, the cross-sectional nature of this study makes it difficult to draw firm conclusions about the causal sequence of the examined relationships. Consequently, carrying out longitudinal studies that validate the causality of the relationships in the current study is a crucial area of research. Second, just one nation—India—and one industry—textiles—were the subjects of the current investigation. Thus, organizational, legal, and cultural variations may either facilitate or impede the development of GHRM and environmental policies, as well as the accomplishment of sustainability-related objectives. Furthermore, just one mediator was used in the model in this study; other variables and industry characteristics should be used to determine the relationship between the independent and dependent variable(s). Finally, other variables might build up in a parallel/serial mediation within the same model when GRIV is present as a mediator.

VI. CONCLUSION

This study has examined the critical role of GHRM and GRIV in driving sustainable ENP in the Indian textile industry. The findings of the study showed that GHRM directly and favourably affects GRIV and ENP. Additionally, the outcome showed that GRIV positively affects EVP. Therefore, the impact of this study is significant for all direct

relationships. Further, the result of one mediating relationship revealed that GRIV mediates the GHRM and ENP, which supports a mediating relationship. Hence, this study shows that organizations should prioritize GHRM practices and integrate innovative approaches to foster a culture of environmental sustainability. By doing so, organizations can not only enhance their ENP but also contribute to the industry's overall sustainability.

All organizations, especially those in the textile sector, must embrace green initiatives. As the sector develops, the industry must continue to use GHRM and GRIV to promote environmentally friendly, sustainable ENP practices. GHRM is essential to prioritizing this, especially in emerging countries like India. Hence, these initiatives improve the industry's competitiveness and public image on the global stage. The research on GHRM in an individual context is still in its early stages, particularly in India. Therefore, through promoting environmentally friendly work practices, this study aims to educate different industry sectors about the critical role that GHRM and GRIV play as well as the potential advantages that they might have for organizations in sustainable ENP.

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