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RESEARCH ARTICLE

Green Human Resource Management Practices and Organizational Sustainable Development: A Moderated Mediation Model of Circular Economy and Green Organizational Culture

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Received: 6 January 2025 | **Revised:** 17 May 2025 | **Accepted:** 22 May 2025

Funding: The authors received no specific funding for this work.

Keywords: circular economy | green human resource management practice | green organizational culture and resource-based view | organizational sustainable development

ABSTRACT

This study examines the effect of green human resource management practices on organizational sustainable development, while analyzing the mediating role of the circular economy and the moderating effect of green organizational culture within this mediated relationship based on resource-based view. Data were gathered from a sample of 326 banking sector employees using convenience sampling, and the presented hypotheses were evaluated using partial least squares structural equation modeling (PLS-SEM). The findings indicate that green human resource management methods have a considerable and positive impact on both organizational sustainable development and the circular economy. Moreover, the circular economy was identified as a mediator in the interaction between green human resource management practices and organizational sustainable development, underscoring its essential function as a facilitator of sustainable transformation. This mediated association was further reinforced by green organizational culture, underscoring the significance of environmentally conscious attitudes in augmenting the efficacy of green human resource management practices. This study provides a novel viewpoint on the interplay between intangible organizational resources and cultural dynamics in promoting sustainability by incorporating the circular economy and green organizational culture, thereby enhancing the resource-based view framework. The findings enhance the theoretical framework of resource-based view literature and provide practical guidance for managers seeking to integrate sustainability into human resource practices.

1 | Introduction

The Industrial revolution altered how civilizations interacted with the planet, but only recently has the effect of exponential growth on the environment been evaluated (Arutyunov 2021). Historically, sustainability was not a significant aspect of corporate strategy; but, as consumer and public demands for economic, environmental, and social accountability increased, firms began to prioritize sustainability (De Oliveira et al. 2024). The United Nations established the sustainable development goals to safeguard and enhance the environment and society (Saxena et al. 2021). As a result, firms began to recognize the

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need for an eco-friendly environment, prompting them to focus on enhancing their operations and management systems (Abbas and Khan 2023). Dynamic firms regard quality, experience, and sustainable practices as crucial strategies for gaining a competitive advantage in the contemporary economic landscape (Hussein et al. 2024).

Sustainable organizational development involves incorporating environmentally friendly practices into a company's fundamental operations and plans to satisfy present requirements without jeopardizing future generations' capacity to meet their own needs (Alimohammadlou and Khoshsepehr 2022). By implementing sustainability into their business objectives, companies can achieve both reduced environmental impact and long-term advantages for their stakeholders, including employees, clients, investors, and the larger community (Fan et al. 2023). To include sustainable practices into company strategy and for managers to adopt measures that promote business sustainability, a cultural revolution is required, beginning with changes in behaviors, cultures, and interests (Rajabi et al. 2022). Firms that prioritize sustainability are more likely to attract and retain top talent, as employees increasingly choose to work for companies with a strong social conscience (Mukhuty et al. 2022). Incorporating sustainability into business models enhances stakeholder connections and elevates a company's reputation, hence yielding a competitive advantage (Salam & Jahed in 2023). An enhanced reputation can result in heightened consumer loyalty, elevated employee morale, and augmented investor confidence, all of which contribute to sustained financial performance (Yusuf and Putra 2024). Implementing sustainable development drives organizations to embrace creative strategies through the adoption of green technologies and environmentally friendly business models (Shahzad et al. 2022). Accomplishing this can provide organizations with a competitive advantage in industries where sustainability is progressively required by regulations or propelled by market demand (Gomez-Trujillo et al. 2024).

The existing literature on organizational sustainable development has predominantly focused on broader environmental, social, and economic impacts, often examining sustainability through the lens of corporate social responsibility, environmental management systems, and business ethics (Alexiadou 2023; Nicolaides 2021; Vann Yaroson et al. 2024). Despite the fact that recent studies have shed light on the ways in which businesses can incorporate sustainability into their operations, there is still a knowledge gap in the literature regarding the connection between green human resource management practices (GHRMP) and the implementation of sustainable organizational practices (Alimohammadlou and Khoshsepehr 2022; Lozano and Barreiro-Gen 2023). Therefore, highlighting the necessity for more investigation into how GHRMP might facilitate an organization's overarching sustainability goals (Chams and García-Blandón 2019; Khan and Muktar 2024; Sahan et al. 2025). Understanding the relationship between GHRMP and organizational sustainable development may provide significant insights into how firms might leverage human resources to improve the efficacy of their sustainability activities. The resource-based view (RBV) theory, articulated by Barney (1991), underpins our research positing that the integration of sustainable practices into human resource management enhances an organization's human capital and operational competencies (Emeagwal and Ogbonmwan 2018).

There is a limited understanding of the underlying and intervening mechanisms that connect GHRMP and its outcomes (He et al. 2024; Sharma et al. 2024). The RBV asserts that organizations can secure a competitive advantage by capitalizing on their distinctive resources and competencies (Barney 1991). By adopting circular economy principles, organizations can optimize resource use, minimize waste, and enhance operational sustainability, thereby developing valuable organizational capabilities (Chowdhury et al. 2022). This shift not only supports sustainable development goals but also necessitates the implementation of GHRMP that cultivate an environmentally conscious workforce (Liu et al. 2022). Literature underscores circular economy as a crucial mediator (Tetteh et al. 2024) linking GHRMP with organizational sustainable development. A circular economy, characterized by its focus on reducing waste and promoting the continual use of resources, is increasingly recognized as a critical framework for enhancing sustainability in organizational practices (Geissdoerfer et al. 2020). Organizations should focus on training employees in sustainable practices, fostering green behaviors, and embedding sustainability into performance metrics (Sult et al. 2024). By doing so, they enhance their human capital, an essential resource identified by the RBV, as employees become more skilled and committed to sustainability initiatives (Delery and Roumpi 2017).

Recent studies highlight the crucial influence of organizational culture in fostering eco-friendliness within corporations, serving as a catalyst for the implementation of environmentally sustainable practices (Assoratgoon and Kantabutra 2023; Fok et al. 2023). A robust sustainability-oriented culture motivates employees to embrace environmentally responsible behaviors, aligns organizational values with sustainability objectives, and increases overall engagement in sustainability initiatives (Van Lieshout et al. 2021). Research indicates that organizations prioritizing sustainability in their culture are more effective in implementing corporate social responsibility strategies, resulting in enhanced brand reputation and customer loyalty (Le 2023). Additionally, a supportive organizational culture fosters open communication and collaboration among employees, which are vital for innovation and the successful integration of sustainable practices (Ali et al. 2023). This research introduces green organizational culture as a moderator (Al-Mesaiadeen et al. 2023; Khan and Terason 2022; Wang et al. 2022) in a mediated relationship between GHRMP and organizational sustainable development through circular economy. Strengthening the relationship between circular economy initiatives and organizational sustainable development can amplify the benefits of sustainability initiatives, resulting in better organizational performance and a stronger commitment to environmental protection (Ahmed et al. 2021). Therefore, understanding the moderating role is crucial for organizations aiming to successfully integrate circular economy principles into their human resource management practices.

This research enhances the current body of knowledge on sustainable human resource management in two significant aspects. Theoretically, it enhances the RBV by illustrating

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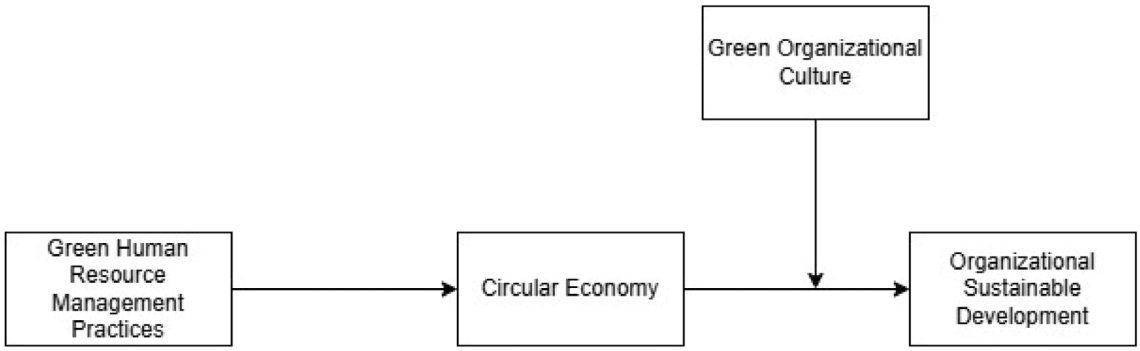


FIGURE 1 | Conceptual model. *Source:* Authors own.

that GHRMPs serve as unique, value-generating strategies that propel sustainable organizational development (Zaidi et al. 2025). This research positions the circular economy as a mediating mechanism, demonstrating how environmentally focused HR initiatives result in tangible sustainability benefits, thus enhancing our knowledge of how intangible human capital expenditures produce long-term competitive advantages (Cuevas-Pichardo et al. 2025). Moreover, recognizing green organizational culture as a boundary condition underscores the essential function of collective environmental values and norms, thereby amplifying the effect of GHRMPs (Velenturf and Purnell 2021). The model provides managers with a definitive framework for integrating sustainability into HR systems, indicating that organizations must implement green recruitment, training, and performance appraisal processes while fostering a culture that embraces circular economy principles to optimize ecological performance, employee eco-innovation, and resilience.

2 | Theoretical Background

2.1 | Resource-Based View

According to Barney (1991), the RBV is a strategic management theory that suggests a company's distinct resources and skills are key factors in its competitive edge and overall success. In the context of sustainability, RBV emphasizes the strategic importance of unique, valuable, rare, and inimitable resources, including human capital, to drive organizational outcomes (Ployhart 2021). GHRMP, aligned with environmental goals, are increasingly recognized as critical internal capabilities that foster organizational sustainable development (Zaidi et al. 2025). GHRMP equips organizations with the human capital needed to innovate, implement eco-friendly processes, and comply with environmental standards, thereby contributing directly to sustainability goals (Mahdy et al. 2023; Rana and Arya 2024). Furthermore, the adoption of the circular economy as a mediating mechanism reflects how GHRMP can translate into sustainable development through processes that emphasize resource efficiency, waste reduction, and product life cycle extension (Cuevas-Pichardo et al. 2025). The circular economy not only operationalizes sustainability goals but also enhances the strategic value of GHRMP by embedding sustainability into the core operational model (Obeidat et al. 2023). Importantly, the effectiveness of this transformation is reliant upon the presence of a green organizational culture, which acts as a moderating force. A green culture nurtures values, beliefs, and behaviors that support environmental stewardship, facilitating the successful integration of GHRMP and circular economy principles (Khaddage-Soboh et al. 2024; Velenturf and Purnell 2021). Thus, in alignment with RBV, GHRMP serve as strategic assets that, when embedded in a culture that values sustainability and mediated through circular economy practices, can significantly enhance organizational sustainable development (Ly and Ly 2024). This integrated framework as shown in Figure 1 below not only contributes to the RBV discourse by highlighting the dynamic interaction among resources, practices, and cultural context but also provides a pathway for organizations to achieve enduring environmental and competitive performance (Helfat et al. 2023).

3 | Literature Review and Hypothesis Development

3.1 | Green Human Resource Management Practices and Organizational Sustainable Development

Organizations are motivated by sustainable development initiatives to harmonize their human resource strategies with more extensive environmental objectives (Tahir et al. 2024), leading to the implementation of GHRM that concentrate on environmentally friendly recruitment procedures, employee training, and staff involvement (Gupta and Kaur 2024; Viterouli et al. 2023). Organizations committed to sustainability often implement training programs that promote environmental awareness and encourage employees to adopt green behaviors, which can lead to increased organizational citizenship behaviors related to sustainability (Cop et al. 2020; He et al. 2024). The integration of sustainable development into HR practices fosters a culture of accountability and innovation, where employees are motivated to contribute to the organization's sustainability objectives, thereby enhancing job satisfaction and performance (Bilderback 2024). As a result, GHRM practices become a critical tool for translating sustainable development goals into actionable practices, enabling organizations to leverage their human capital effectively to achieve long-term sustainability outcomes and competitive advantage (Gupta and Arora 2024). In this way, the effect of

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GHRMP on organizational sustainable development not only backs the organization's environmental goals but also fosters a workforce that is engaged, motivated, and in line with sustainability projects (Freihat et al. 2024). According to RBV, GHRMP function as important, unique, and inimitable organizational resources that augment a firm's internal capabilities (Barrutia and Echebarria 2015; Kaur & Arora, 2025). By integrating environmental values into recruitment, training, performance management, and employee engagement, GHRMP cultivates a workforce that is ecologically aware and aligned with sustainability objectives (Shaikh et al. 2024). This environmentally focused human capital transforms into a strategic advantage, allowing firms to execute sustainable policies more efficiently and distinguish themselves in the marketplace (Arda et al. 2023; Khaddage-Soboh et al. 2024). In accordance with the discussed points, we suggest the following proposition.

H1. *GHRMP is positively related to organizational sustainable development.*

3.2 | Green Human Resource Management Practices and Circular Economy

The association between GHRMP and the circular economy has gathered considerable academic attention; as firms are increasingly striving to integrate sustainability into their fundamental strategy via the cultivation of green human capital (Al Doghan et al. 2025; Ly and Ly 2024). GHRMP encompasses various environmentally focused HR strategies, including green recruitment, training, performance management, and reward systems, which collectively encourage proenvironmental behaviors and cultivate a culture of ecological responsibility within organizations (Renwick et al. 2013). These practices are crucial for facilitating the implementation of a circular economy by promoting employee participation in sustainability-oriented behaviors, including waste reduction, recycling, eco-innovation, and resource efficiency (Martínez-Falcó et al. 2024). Literature emphasizes that the systematic integration of environmental issues into HR procedures can boost employees' green capabilities, essential for transitioning to closed-loop systems and designing sustainable product lifecycles (Camilleri 2019). GHRMP enhances ecological consciousness and motivation among employees, promoting their participation in circular strategies such as reuse design, reverse logistics, and sustainable resource management (Marrucci et al. 2021). According to RBV, an organization's green human capital can function as a distinctive resource that fosters sustainable competitive advantage through innovation and operations centered on circularity (Farrukh et al. 2023). When GHRMP integrates circular economy methods, this resource can be strategically utilized to establish a sustainable competitive advantage through innovation and operations focused on circularity (De et al. 2024). Consequently, the circular economy functions not only as a result of GHRMP but also as a crucial mechanism by which green skills are converted into improved organizational sustainability (Subramanian and Suresh 2022). Therefore, based on the above discussion, we propose the following hypothesis:

H2. *GHRMP impacts circular economy positively.*

3.3 | Circular Economy as a Mediator

The circular economy is widely acknowledged as a transformative and strategic paradigm for promoting long-term sustainable development inside organizations (Velenturf and Purnell 2021). The circular economy model, grounded in resource efficiency, waste reduction, and regenerative design, diverges from the conventional linear "take-make-dispose" approach by advocating for closed-loop systems that facilitate the continuous cycling of materials through reuse, remanufacturing, and recycling (Geissdoerfer et al. 2017). Circular economy practices provide a comprehensive alternative to linear models, which depend significantly on finite resources and contribute to environmental deterioration, thereby supporting the economic, environmental, and social facets of sustainability (Ghisellini et al. 2016). Researchers have emphasized that the adoption of circular economy strategies, including eco-design, circular supply chains, and product life extension, not only reduces environmental impact but also promotes innovation, operational efficiency, and collaborative value creation among stakeholders (Burke et al. 2023; Ul-Durar et al. 2023). Organizations that use circular economy principles attain cost savings, resistance to resource scarcity, and less vulnerability to environmental laws by minimizing material inputs and optimizing value retention (Kandpal et al. 2024; Rashid and Shahzad 2021). Moreover, the implementation of circular strategies bolsters business reputation, fosters customer trust, and aligns with global sustainability initiatives, like the United Nations Sustainable Development Goals (Vann Yaroson et al. 2024). Organizations that integrate circular economy principles into their operational and strategic frameworks are more likely to attain sustained competitive advantage and long-term viability in dynamic market conditions (Rodríguez-Espíndola et al. 2022). Based on the above discussion, we propose the following hypothesis:

H3. *Circular economy is positively related to organizational sustainable development.*

GHRMP cultivates environmental awareness by integrating sustainability into HR practices, thus promoting employee behaviors that support ecological innovation and resource conservation (Kaur et al. 2025; Renwick et al. 2013). The environmentally conscious competencies of employees establish the basis for circular economy practices, including recycling, reusing, and redesigning processes and products, which are crucial for minimizing environmental impact and enhancing resource efficiency (Chowdhury et al. 2022). GHRMP fosters green creativity and operational adaptability, serving as a catalyst for the implementation of circular economy strategies that advance organizational sustainable development goals, including environmental resilience, economic viability, and social responsibility (Zaidi et al. 2025). RBV suggests that businesses achieve a competitive advantage via the effective utilization of their unique resources and capabilities (Barney 1991; Hinterhuber 2013; Vann Yaroson et al. 2024). Organizations can optimize resource utilization, reduce waste, and improve operational sustainability by adopting circular economy methods, hence aligning with their sustainable development goals (Nayal et al. 2022). Organizations that embrace circular economy principles cultivate distinctive competencies that foster a workforce dedicated to sustainability, hence

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improving the overall efficacy of GHRM processes (Bertassini et al. 2021). Incorporating circular economy principles into their HRM strategies allows firms to promote creativity and adaptation, hence enabling proactive responses to environmental concerns and improving their sustainability initiatives (Marrucci et al. 2021). Thus circular economy acts as a crucial link, connecting GHRMP with organizational sustainable development, and strengthening the importance of distinctive resources in attaining lasting sustainability and a competitive edge (Elshaer et al. 2024). Therefore, based on the above discussion, we suggest the following hypothesis:

H4. *Circular economy mediates the relationship between GHRMP and organization sustainable development.*

3.4 | Green Organizational Culture as a Moderator

A workplace culture that emphasizes shared values and standards promoting environmental sustainability leads to increased employee commitment and participation in sustainability initiatives (Khaddage-Soboh et al. 2024). Organizations that cultivate a culture conducive to circular economy projects tend to have employees who are more likely to engage with and participate in GHRM practices focused on environmental goals (Shahzad et al. 2023; Renwick et al. 2013). This cultural alignment with sustainability objectives enables the incorporation of circular economy principles into human resource management practices, ultimately resulting in enhanced outcomes regarding resource efficiency and waste minimization (Sharma et al. 2021). Establishing an environmentally friendly workplace culture can foster a spirit of open communication and teamwork among staff members, which are crucial components for driving innovation and the effective implementation of GHRM strategies (Wu et al. 2016).

The RBV suggests that businesses can gain a lasting competitive edge by successfully utilizing their special resources and abilities, such as their corporate culture (Barney 1991). A robust green organizational culture creates an environment in which sustainability is not only highly valued but also fully embedded into daily practices and decision-making processes (Afsar et al. 2020). Implementing circular economy principles is facilitated by this alignment, which focuses on maximizing resource efficiency, minimizing waste, and promoting sustainable practices (Geissdoerfer et al. 2020). Organizations that promote a green culture tend to have employees who are more receptive to and involved in GHRMP, including environmentally friendly recruitment and training programs, which in turn boost the success of these initiatives (Usman et al. 2023). Drawing on the preceding discussion, we propose the following hypothesis:

H5. *Green organizational culture moderates the relationship between circular economy and organization sustainable development, such that effect is stronger with a higher level of green organizational culture as compared to low.*

H6. *Green organizational culture moderates the strength of mediated relationship between GHRMP and organization sustainable development through circular such that the relationship is stronger with high- as opposed to low levels of green organizational culture.*

4 | Methodology

4.1 | Sample and Procedure

Data were gathered from banks in Jammu and Kashmir, India. The banking sector in Jammu and Kashmir, India, plays a crucial role in this research. The banking sector of Jammu and Kashmir provides a highly relevant context for the current study. Banks play a pivotal role in driving regional economic growth, and their operations significantly influence environmental and social sustainability outcomes. In a region like Jammu and Kashmir, which is ecologically sensitive and undergoing socioeconomic transformation, embedding green practices within banking institutions becomes vital. Employees in this sector are central to implementing GHRMP initiatives. Studying banking employees in this unique sociogeographic context offers valuable implications for theory and practice, helping to tailor sustainability strategies that align with both environmental imperatives and organizational goals (Aukhoon et al. 2024).

Data for this study were gathered using a nonprobability sampling technique, specifically convenience sampling from August 2024 to December 2024. This method was chosen due to the demanding and structured work schedules of bank employees, which made it challenging to access a randomly selected sample. Convenience sampling allowed the researcher to approach participants who were readily available and willing to respond, ensuring efficient data collection without disrupting the employees' workflow. This approach was practical and suitable for capturing insights from a time-constrained professional population like banking employees.

A total of 377 managers and HR professionals initially consented to participate in the study by completing the provided questionnaire. A total of 343 responses were obtained, reflecting a high participation rate of 91%. A thorough review led to the exclusion of incompletely or inaccurately filled out questionnaires, ultimately yielding 326 fully completed surveys, which comprised 86% of the original study pool. This extensive dataset guarantees the accuracy and dependability of the analysis, giving a robust foundation for the study's findings. Of the 326 individuals taking part, 71% were men, with a mean age of 39 years. The majority of participants, at 81%, held postgraduate degrees, and their average work history spanned 11.5 years, indicating a highly educated and experienced group.

Because data collection relied on a cross-sectional approach, a potential issue with common method bias (CMB) arose. Harman's single-factor test was applied (Iqbal et al. 2024; Podsakoff et al. 2003), showing that 33.29% of the variance was accounted for by a single factor, which fell within the acceptable range of 50%. A collinearity test (Kock 2015) was conducted to assess the average variance inflation factor (AVIF). The results showed that all AVIF values, ranging from 1.666 to 3.12, were below the acceptable threshold of 3.3. The findings of this study indicate that CMB does not pose a significant concern.

4.2 | Measures

The study relied on well-established scales from existing literature, where participants evaluated their answers using a 5-point

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TABLE 1 | Reliability results.

Constructs	VIF	FL-Range	CA	CR	AVE
Organizational sustainable development		0.789–0.827	0.952	0.957	0.600
Green human resource management practices		0.771–0.870	0.879	0.912	0.674
Circular economy		0.703–0.794	0.905	0.922	0.569
Green organizational culture		0.789–0.880	0.853	0.901	0.695

Source: Authors own.

Likert scale with scores ranging from 1 (strongly disagree) to 5 (strongly agree). A pilot study was carried out prior to conducting comprehensive data collection in order to verify the internal consistency of the scales. All the scales showed Cronbach's alpha values above the recommended minimum of 0.70, thereby validating consistency (Hair et al. 2019).

4.2.1 | Organizational Sustainable development

Organizational sustainable development was measured with a 15-item scale developed by Chow and Chen (2012) which showed a high level of internal consistency with a Cronbach's alpha value of 0.952.

4.2.2 | GHRMP

The GHRMP was assessed using a 5-item scale that was created by Dumont et al. (2017) with a Cronbach's alpha coefficient of 0.879.

4.2.3 | Circular Economy

A nine-item scale developed by Fonseca et al. (2018) assessed the circular economy, yielding a Cronbach's alpha value of 0.905.

4.2.4 | Green Organizational Culture

Organizational culture with a green focus was assessed via a 4-item scale designed by Norton et al. (2015) which yielded a Cronbach's alpha coefficient of 0.853.

5 | Data Analysis and Results

5.1 | Model Assessment

The hypotheses were examined using SmartPLS-SEM (Ringle et al. 2015). PLS-SEM was chosen over CB-SEM because it is commonly employed in current studies, with a majority of research published in recent years favoring it for data analysis (Hair Jr. et al. 2017). The use of PLS-SEM in this study is supported by several key factors. This method enables the evaluation of correlations between observed variables and their underlying factors, along with the interplay among these factors. PLS-SEM is particularly effective for evaluating complex models, especially those involving mediation and moderation effects (Hair Jr. et al. 2017). PLS-SEM is more effective at estimating parameters when data do not conform to a normal distribution, unlike CB-SEM (Hair et al. 2019). Furthermore, SmartPLS's variance-based approach features an intuitive graphical interface, making it more user-friendly than applications such as LISREL or AMOS. PLS-SEM has been effectively applied in recent studies (e.g., Abid et al. 2023; Abualigah et al. 2023).

5.2 | Assessment of Measurement Model

We evaluated the item loadings of the questionnaire following the guidelines recommended by Hair et al. (2019) as shown in Table 1. In accordance with their suggested criteria, items with loadings above 0.70 were selected for retention, with loading values ranging from 0.703 to 0.880. We evaluated the reliability by employing Cronbach's alpha and composite reliability (CR) and found that both metrics surpassed the 0.70 benchmark, signifying robust reliability (Hair et al. 2019). The convergent validity was assessed via average variance extracted (AVE), yielding values spanning from 0.569 to 0.695 in accordance with the standards established by Fornell and Larcker (1981). The discriminant validity was evaluated by using the Heterotrait–Monotrait (HTMT) ratio, and the resulting HTMT values were found to all be below 0.90, as specified by Henseler et al. (2015). Our findings support the notion that the model fulfills all relevant measurement standards shown in Tables 2 and 3.

5.3 | Assessment of Structural Model

The structural model, as presented in Table 4, was evaluated in accordance with the PLS-SEM guidelines proposed by Hair et al. (2019). The inner model assessment involved examining key metrics including collinearity, coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), path coefficients (β), and their statistical significance.

Collinearity was assessed using the variance inflation factor (VIF), with values ranging from 1.629 to 3.03 (Table 1). These results fall below the recommended threshold of 3.3, indicating no multicollinearity issues. To assess the model's explanatory power, the R^2 value was calculated and found to be 0.661, suggesting that GHRMP explain 66.1% of the variance in organizational sustainable development. Effect sizes (f^2) were also

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TABLE 2 | Descriptive and inter correlation.

Constructs	1	2	3	4	Mean	SD
Organizational sustainable development	**0.77**				4.213	0.813
Green human resource management practices	0.646**	**0.82**			4.014	0.784
Circular economy	0.657**	0.514**	**0.75**		4.192	0.656
Green organizational culture	0.662**	0.571**	0.412**	**0.83**	4.365	0.837

Note: $n = 326$; * = $p < 0.05$; ** = $p < 0.0$. Square root of AVE is bold color. *Source:* Authors own.

TABLE 3 | Results of validity.

Fornell–Larcker				
Constructs	**1**	**2**	**3**	**4**
Circular economy	0.754			
Green human resource management practices	0.514	0.821		
Green organizational culture	0.412	0.571	0.833	
Organizational sustainable development	0.657	0.646	0.662	0.774
Heterotrait–monotrait (HTMT)				
Circular economy				
Green human resource management practices	0.571			
Green organizational culture	0.468	0.659		
Organizational sustainable development	0.706	0.701	0.732	

Source: Authors own.

TABLE 4 | Results of R^2, F^2, and Q^2.

Constructs	R^2	Q^2
Organizational sustainable development	0.661	0.386
Circular economy	0.264	0.142
F Square		
Constructs	Organizational sustainable development	Circular economy
Green organizational culture	0.295	
Circular economy	0.325	
Green human resource management practices	0.109	0.360

Source: Authors own.

evaluated to understand the impact of individual predictors on R^2. Based on Cohen's (2013) guidelines, where f^2 values above 0.02, 0.15, and 0.35 indicate small, medium, and large effects, respectively, our model showed a range of effects from low to high. Predictive relevance was assessed using Q^2 values, all of which exceeded zero, thereby confirming the model's predictive capability (Hair et al. 2019).

Lastly, the significance of the path relationships was confirmed through the analysis of path coefficients (β) and corresponding t-values, offering additional support for the model's robustness and validity.

5.4 | Hypothesis Result

5.4.1 | Direct and Indirect Effect

The findings as shown in Table 5, that GHRPM has a positive and substantial effect on both the organizational sustainable development ($\beta = 0.456$; $t = < 8.022$) and the circular economy ($\beta = 0.514$; $t = 11.303$), thereby confirming hypotheses H1 and H2. The study's results show that the circular economy has a positive effect on organizational sustainable development ($\beta = 0.394$; $t = 5.676$). Furthermore, the circular economy acts as a mediator in the relationship between GHRMP and organizational sustainable development ($\beta = 0.203$; $t = 4.504$) thereby supporting hypotheses H3 and H4.

5.4.2 | Moderating Effect

The findings reveal that green organizational culture significantly moderates the relationship between circular economy and organizational sustainable development ($\beta = 0.111$; $t = 2.518$) provides support to H5. Furthermore, the results indicate that green organizational culture also moderates the indirect effect of GHRMP on sustainable development through circular economy practices, with the strength of the mediated relationship varying from SD −0.146 at low levels of green culture to SD +0.246 at high levels. Therefore, it provides support to H6, as shown in Figure 2 and Table 5.

6 | Discussion

This study is based on the RBV and examines the effects of GHRMP on organizational sustainable development, also investigates the role of the circular economy as a mediator and the

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TABLE 5 | Results of hypothesis.

Hypothesis	Paths	*β*	SE	*t*-value	*p*
H1	GHRMP →OSD	0.456	0.057	8.022	0.000
H2	GHRMP→ CE	0.514	0.045	11.303	0.000
H3	CE → OSD	0.394	0.069	5.676	0.000
H4	GHRMP→ CE → OSD	0.203	0.045	4.504	0.000
H5	GOC*CE → OSD	0.111	0.044	2.518	0.012
Results of moderated mediation circular economy (mediator)					
Values of moderator (green organizational culture)		**Conditional indirect effect**	**SE**	**LLCI**	**ULCI**
−SD		0.146	0.045	0.064	0.242
Mean		0.203	0.044	0.121	0.293
+SD		0.246	0.051	0.147	0.348

Source: Authors' own.

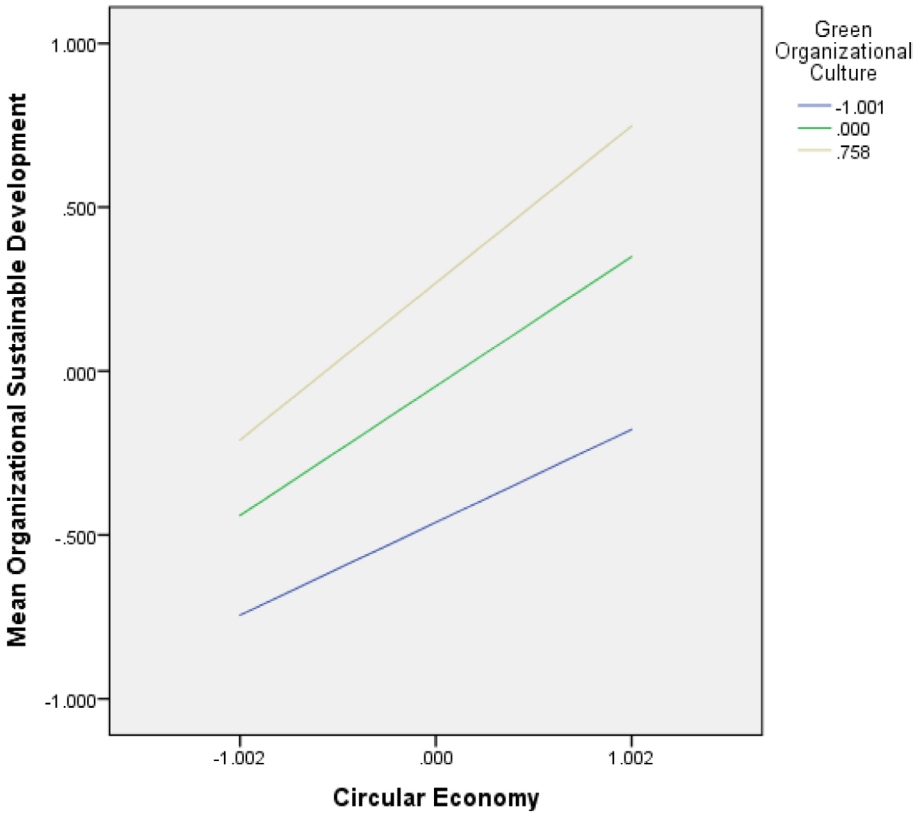


FIGURE 2 | Moderated-mediation. *Source:* Authors' own.

moderating impact of green organizational culture in a mediated relationship.

Our results confirm that incorporating eco-friendly methods into human resource management can improve an organization's human assets and efficiency in operations. These findings are consistent with previous studies highlighting the importance of sustainability in enhancing organizational performance and the ability to withstand challenges. The findings are in line with research that emphasizes the significance of integrating environmental and sustainable practices into HRM frameworks to boost employee engagement, stimulate innovation, and ultimately enhance overall organizational performance (Afzal et al. 2023; He et al. 2024; Shaikh et al. 2024). The significance of sustainable HRM practices is highlighted in their ability to promote both environmental and economic advantages within businesses.

Our findings confirm the mediation hypothesis that companies can gain a competitive edge by utilizing their distinct assets and competencies. Results indicate that the circular economy plays a pivotal role in linking GHRMP to

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organizational sustainable development, with a special emphasis on promoting resource efficiency and creativity (Ayaz and Tatoglu 2024; Chowdhury et al. 2022). Previous studies have highlighted the incorporation of circular economy principles as a key approach to boosting both environmental sustainability and organizational efficiency (Gallardo-Vázquez et al. 2024). Embedding circular economy practices enables organizations to turn sustainable development initiatives into concrete plans that bolster green human resources management practices and boost long-term competitiveness (De et al. 2024). The latest findings reinforce the significance of using a systems-based approach to sustainability, where the interaction between different variables leads to substantial improvements in company performance and employee participation levels (Al Doghan et al. 2025; Abid et al. 2023).

The results of the current study strongly back up the moderated-mediation hypothesis, showing that a green organizational culture has a substantial impact on the relationship between GHRMP and organizational sustainable development through circular economy. This discovery underscores the multiplying impact of a green organizational culture in augmenting the advantages of circular economy projects on environmentally conscious HRM practices. Companies with a strong environmental ethos are more likely to successfully incorporate sustainable business practices into their daily operations and personnel management systems, resulting in enhanced environmental stewardship and reduced resource waste (Obeidat et al. 2023; Subramanian and Suresh 2022). Previous research corroborates the significance of organizational culture in fostering sustainable practices and promoting innovation (Aukhoon et al. 2024). In particular, a green organizational culture provides an encouraging environment for circular economy initiatives to flourish, thereby enhancing the efficacy of GHRMP and contributing to a competitive edge through sustainable strategy (Dyck et al. 2019).

7 | Theoretical Contribution

This study significantly enhances the RBV by expanding its relevance within the field of sustainable human resource management. First, it provides a sophisticated understanding of how GHRMP operate as strategic, intangible assets that provide a lasting competitive edge. In accordance with the RBV's focus on precious, scarce, inimitable, and nonsubstitutable resources (Barney 1991), GHRMP are demonstrated to improve organizational sustainability outcomes by aligning ecological values with human capital strategies internally. This study expands the RBV framework by picturing sustainable efforts as intangible strategic assets that contribute to environmental and social value creation in addition to economic success (Sewchurran et al. 2019). Second, the incorporation of the circular economy as a mediating mechanism enhances the RBV literature by illustrating how environmentally sustainable resource arrangements can yield concrete operational results. The circular economy functions not only as a sustainability model but also as a dynamic capability that enables the ongoing regeneration of people and material capital within HRM systems (Riggs et al. 2024). This mediating role highlights the transformation of sustainability-focused inputs into organizational capabilities, thus providing a tangible route for converting strategic intent into performance; a feature frequently overlooked in conventional RBV discussions (Ayaz and Tatoglu 2024). Third, the recognition of green organizational culture as a moderating variable enhances the RBV by highlighting the significance of cultural alignment in the utilization of strategic resources. A robust green culture serves as a facilitating environment that either enhances or limits the effectiveness of GHRMP and circular economy activities. This insight enhances the RBV by integrating the sociocultural foundation of organizations as a factor influencing resource efficacy, confirming that the integration of environmental values into organizational culture can profoundly impact the returns on strategic sustainability investments (Zafar et al. 2023).

8 | Practical Implications

The findings of this research have substantial real-world implications for businesses striving to improve their environmental stewardship initiatives through the implementation of sustainable business practices. Integrating sustainability into GHRM strategies is said to have a positive effect on organizational sustainable practices, indicating that it can result in enhanced employee engagement, retention, and performance by aligning human capital with long-term organizational objectives (Malik et al. 2020). Organizations can establish a work environment that prioritizes ethical practices, environmental stewardship, and social responsibility by highlighting the significance of sustainable development, thereby improving their overall HR practices. The study underscores the circular economy's role as a mediator, indicating that businesses can apply circular economy principles to maximize resource efficiency, minimize waste, and support long-term sustainable business practices (De Oliveira et al. 2024). Embedding circular economy practices within HRM frameworks allows organizations to reduce their environmental footprint while also cultivating a culture of ongoing innovation and improvement, resulting in enhanced human resource outcomes including creativity, efficiency, and job satisfaction (Marrucci et al. 2021). Furthermore, the influence of green organizational culture highlights the significance of fostering an environment that promotes and drives sustainability initiatives. Companies with a robust environmental ethos are more likely to reap the full advantages of circular economy strategies within their human resources management systems, making sustainability a core aspect of their organizational identity (Roscoe et al. 2019). The research stresses the importance of leadership in fostering a green organizational culture by ensuring that sustainability principles are embedded at every level of the organization (Assoratgoon and Kantabutra 2023). Ultimately, these practical insights can inform organizations on how to strategically incorporate sustainable practices into their HRM systems, thereby improving their competitive position through a more engaged, sustainable, and innovative workforce.

9 | Limitations, Future Research Agenda, and Conclusion

This study has several constraints that provide openings for further investigation. The concentration on the banking sector in Jammu and Kashmir hampers the applicability of the results to other sectors and regions, implying that future research should

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investigate a more diverse range of industries and geographic locations. The cross-sectional design of the study limits the researchers' ability to track temporal changes or determine whether there is a causal link between GHRMP, sustainable organizational development, a circular economy, and a green organizational culture. Longitudinal studies are needed to explore how these dynamics evolve. Last, the study also primarily takes an organizational perspective, with limited attention to employee-level insights; incorporating data on employees' experiences and behaviors could provide a more holistic understanding of the impact of sustainability initiatives.

In conclusion, this research enhances our understanding of the intersection between sustainable development, GHRMP, circular economy, and green organizational culture, offering both theoretical and practical insights. Future research should build on these findings to explore the broader applicability and long-term impacts of sustainability initiatives on organizational performance and employee engagement.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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