

Building green HRM in catering: The role of innovation, culture, and management commitment



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ABSTRACT

Green Human Resource Management (Green HRM) plays an important role in service industries such as catering, as it improves efficiency, lowers environmental impact, and strengthens company reputation. This study examines how organizational culture, management commitment, and innovation affect the use of Green HRM practices in the catering sector. A quantitative method was applied using Partial Least Squares Structural Equation Modeling (PLS-SEM), with data collected from 150 catering business owners in East Java, Indonesia. The results show that innovation and management commitment have a strong positive effect on Green HRM practices, while organizational culture does not directly influence them. In addition, innovation mediates the relationship between management commitment and Green HRM, but it does not mediate the link between organizational culture and Green HRM. These findings highlight the key role of innovation in turning management commitment into sustainable HRM practices. On the other hand, the absence of formal HR-related innovation systems in small and medium enterprises (SMEs) reduces the impact of organizational culture on Green HRM. The study suggests formalizing HR innovation, embedding sustainability values in HRM systems, and increasing collaboration to make Green HRM more effective in catering businesses. It also recommends that future studies explore other service industries and use mixed methods or longitudinal designs for deeper insights.

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1. Introduction

In the era of globalization and rapid environmental change, Green Human Resource Management (Green HRM) has emerged as a strategic approach emphasizing environmental sustainability within human resource practices. This approach is increasingly relevant in the catering sector, which is characterized by high food waste generation, significant energy consumption, and complex supply chains that contribute substantially to carbon emissions (Renwick et al., 2013; Chaudhary, 2020; Shabeeb Ali et al., 2023). The implementation of Green HRM is essential not only to improve operational efficiency but also to meet consumer demands and comply with increasingly stringent environmental regulations.

Despite its importance, the implementation of Green HRM in the catering industry encounters multiple challenges, particularly concerning organizational culture and management commitment. Organizations lacking an internalized sustainability culture tend to face difficulties in adopting environmentally friendly practices (Arulrajah et al., 2015; Muchlis et al., 2024). Management commitment serves as a pivotal driver for sustainability initiatives, with proactive leadership providing clear guidance for effective Green HRM implementation (Jabbour and de Sousa Jabbour, 2016). Without robust cultural values and leadership endorsement, Green HRM practices risk becoming symbolic gestures that fail to influence operational performance meaningfully.

Innovation plays a critical mediating role between organizational culture, management commitment, and Green HRM implementation. Innovation facilitates the development of novel and adaptive solutions to environmental challenges, thereby enhancing the efficacy of sustainable HR strategies (Dangelico et al., 2017). The interplay among an innovation-supportive organizational culture, committed management, and innovative

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practices is fundamental for successful Green HRM adoption in the catering sector. This integrated approach not only promotes business sustainability but also bolsters competitiveness in a highly contested market.

The growing global emphasis on environmental sustainability has led various industries to incorporate Green HRM practices. However, the catering sector continues to confront significant obstacles, including excessive food waste (Wu et al., 2021), limited access to green technologies (Chaudhary and Sharma, 2023), insufficient environmental awareness among employees, and market pressures prioritizing cost efficiency and customer satisfaction over sustainability (Carballo-Penela et al., 2023). These challenges underscore the necessity for a strategic, context-specific approach to Green HRM implementation in this sector.

Innovation in human resource management emerges as a key enabler to overcome these barriers and enhance Green HRM effectiveness. Firms that develop and integrate innovative solutions such as environmentally focused employee training programs and waste reduction technologies demonstrate greater adaptability and success in executing sustainability initiatives (Dangelico et al., 2017). Although prior research highlights the significance of organizational culture and management commitment in fostering Green HRM (Arulrajah et al., 2015; Vadithe et al., 2025), the mediating function of innovation within this dynamic remains underexplored, particularly in small- and medium-sized enterprises (SMEs) within the catering industry.

Most existing studies concentrate on manufacturing and large enterprises (Hossain et al., 2022), leaving a research gap regarding catering SMEs, which exhibit distinct characteristics and resource limitations (Faeni et al., 2025). This study seeks to address this gap by investigating the mediating role of innovation in the relationship between organizational culture, management commitment, and Green HRM adoption in catering businesses. The findings are expected to contribute both theoretically and practically to the advancement of sustainability strategies in the catering sector and SMEs at large.

2. Literature review

2.1. Green human resource management (green HRM)

Green Human Resource Management (Green HRM) is a strategic approach to human capital management that integrates environmental sustainability principles into human resource policies and practices. These include green recruitment, eco-focused training, environmentally conscious performance evaluations, and active employee involvement in green initiatives (Renwick et al., 2013; Jabbour and de Sousa Jabbour, 2016). The adoption of Green HRM is associated with

multiple organizational benefits, such as cost efficiency, enhanced corporate image, increased employee engagement, and stronger workforce loyalty (Pham and Tran, 2020; Vadithe et al., 2025). However, the catering sector still faces substantial challenges in implementing Green HRM, including food waste, limited access to green technologies, and market pressures that prioritize cost-efficiency over sustainability (Wu et al., 2021; Faeni et al., 2025). Understanding the organizational factors that influence the successful implementation of Green HRM is therefore essential.

2.2. Organizational culture

Organizational culture refers to the shared values, norms, and beliefs that shape employee behaviors and guide decision-making within a company (Schein, 2010). A sustainability-oriented culture provides the foundation for pro-environmental behavior and fosters a supportive atmosphere for Green HRM implementation (Renwick et al., 2013; Liu and Lin, 2020). In the catering industry, such a culture can encourage food waste reduction, energy efficiency, and the adoption of environmentally friendly innovations (Wu et al., 2021; Abdou et al., 2023).

Organizations that cultivate eco-conscious values are more likely to promote employee involvement in green activities and establish long-term sustainability practices.

H1: Organizational culture has a positive influence on Green HRM practices in catering businesses.

H2: Organizational culture has a positive influence on innovation in catering businesses.

2.3. Management commitment

Management commitment reflects the degree of dedication and proactive involvement by organizational leaders in achieving sustainability goals, including the adoption of Green HRM (Jabbour and de Sousa Jabbour, 2016). Strong managerial commitment is crucial for setting strategic directions, allocating resources, and shaping an organizational environment conducive to environmental responsibility (Zaid et al., 2018). This commitment is often driven by factors such as environmental awareness, stakeholder expectations, regulatory pressures, and access to green technologies (Ren et al., 2021; Chatterjee et al., 2022).

In the catering sector, management committed to environmental values tends to pursue innovative solutions to minimize ecological impact (Carballo-Penela et al., 2023).

H3: Management commitment has a positive influence on Green HRM practices in catering businesses.

H4: Management commitment has a positive influence on innovation in catering businesses.

2.4. Innovation and its mediating role in green HRM

Innovation is defined as the introduction and application of new ideas, methods, or technologies that enhance organizational effectiveness and adaptability (Rogers, 2003). In the context of Green HRM, innovation facilitates the development of green technologies, digital HR systems, and sustainable operational practices (Purnomo, 2021). Organizations with cultures that promote creativity and continuous learning are more likely to foster green innovation (Martins and Terblanche, 2003; Zhang et al., 2023), while sustainability-oriented leadership provides a supportive climate for new ideas (Dangelico et al., 2017; Chaudhary and Sharma, 2023). As such, innovation is expected to serve as a mediating variable that links organizational culture and management commitment to the successful implementation of Green HRM.

H5: Innovation has a positive influence on Green HRM practices in catering businesses.

H6: Innovation mediates the relationship between organizational culture and Green HRM practices.

H7: Innovation mediates the relationship between management commitment and Green HRM practices.

3. Method

This study examines Green HRM practices from the perspective of organizational policy and strategy. Accordingly, the respondents consist of catering business owners. An exploratory approach is employed to identify and gain an in-depth understanding of the complex relationships between organizational culture, management commitment, innovation, and Green HRM practices within the catering industry. The presence of catering enterprises highlights the significant role of this sector in fulfilling consumption needs at both individual and institutional levels, including hotels, offices, and large-scale event services.

A total of 150 catering entrepreneurs from East Java Province, Indonesia, participated as respondents in this study. The sample was selected based on specific criteria aligned with the target population. The determination of sample size followed methodological considerations for Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis. According to Hair et al. (2014), PLS-SEM is robust with respect to sample size and can yield reliable parameter estimates even with moderate-sized samples, provided that the sample meets the minimum requirement of either ten times the largest number of indicators used to measure a construct or ten times the number of structural paths directed at a construct in the model. Based on the structure of this study's research model, a sample size of 150 respondents is deemed sufficient to support the application of PLS-SEM. This sample size also enhances the generalizability of the findings and reduces the likelihood of estimation bias.

4. Results and discussion

In this study, the respondent profile serves as an essential component that offers a detailed overview of the characteristics of the participants. Understanding the respondent profile is crucial for interpreting the research findings more accurately and contextually. The respondent profile is presented in Table 1.

Table 1: Respondent profile

Profile	Frequency	Percentage	
Gender	Men	48	32
	Women	102	68
Age	< 25 years	7	5
	25 - 35 years	27	18
	36 - 45 years	53	35
	> 45 years	63	42
	Senior high school	12	8
Education level	Diploma	21	14
	Bachelor	105	70
	Master	12	8

Based on the respondent profile presented in Table 1, most respondents are women (68%), while men account for 32%. In terms of age, the respondents are predominantly within the above-45 age group (42%) and the 36–45 age group (35%), indicating that most participants are mature and experienced. Regarding educational background, the majority hold a bachelor's degree (70%), followed by diploma holders (14%), and both high school and master's degree holders at 8% each. This composition suggests that entrepreneurs in the catering sector in East Java Province, Indonesia, are predominantly female, mature, and well-educated. Collectively, these characteristics represent significant potential for supporting the implementation of Green HRM practices through their maturity, knowledge, and readiness to embrace sustainability-driven innovation.

The research data were analyzed using the Partial Least Squares (PLS) method with SmartPLS 3.0. This section presents the evaluation of the outer model, which assesses the validity and reliability of the constructs, as well as the evaluation of the inner model, which examines the relationships between the hypothesized variables. Fig. 1 displays the path diagram illustrating the outer model evaluation in this study.

The reliability and validity of the constructions in this study are assessed based on three main indicators: Outer Loadings, Average Variance Extracted (AVE), and Composite Reliability. Table 2 presents the values of Outer Loadings, AVE, and Composite Reliability for each variable included in this study.

Based on Table 2, the results of the external model evaluation indicate that all constructions, Organizational Culture, Organizational Commitment, Innovation, and Green HRM Practices demonstrate satisfactory levels of validity and reliability. All item loadings exceed the recommended threshold of 0.70, confirming that each indicator adequately reflects its respective latent variable. Furthermore, the Average

Variance Extracted (AVE) values for all constructions are above the acceptable threshold of 0.50, with Organizational Culture at 0.708, Organizational Commitment at 0.693, Innovation at 0.554, and

Green HRM Practices also at 0.554. These findings confirm that each construct possesses good convergent validity.

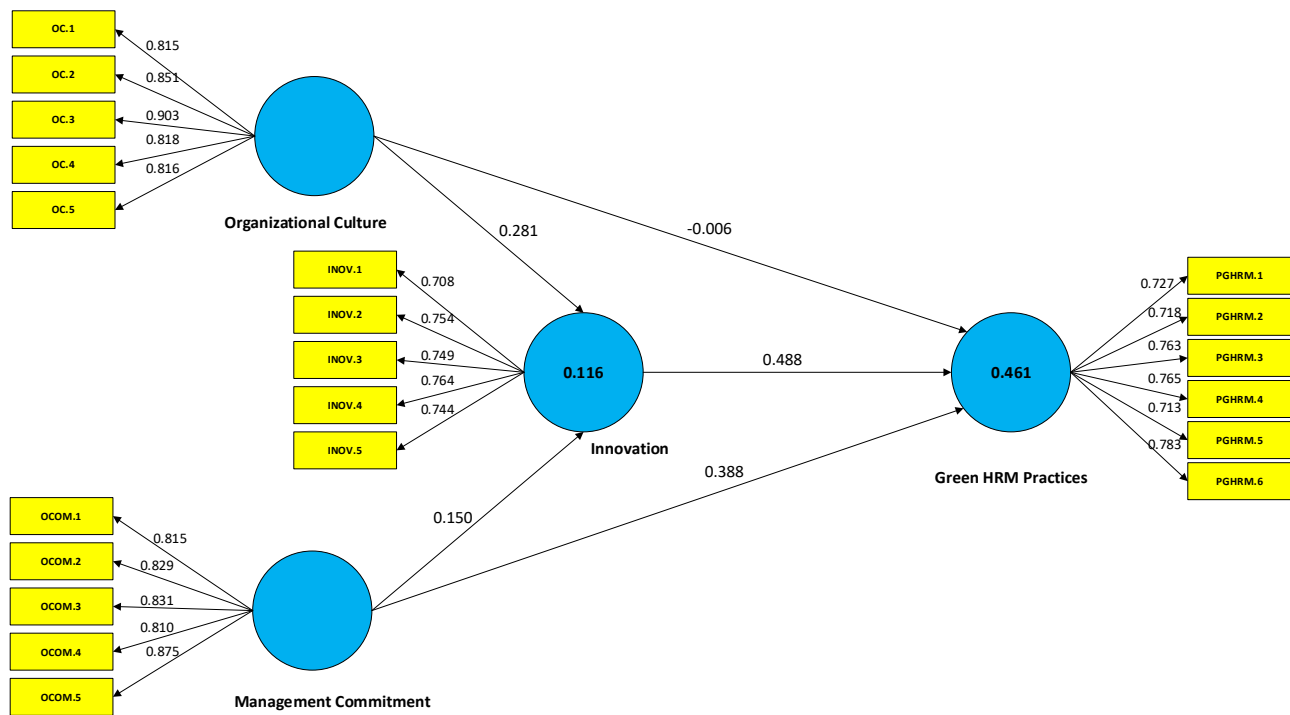


Fig. 1: Path diagram construction

Additionally, the Composite Reliability (CR) values for all constructions are strong, ranging from 0.861 to 0.924, which are well above the minimum threshold of 0.70. This indicates strong internal consistency. Collectively, these results suggest that the measurement model used in this study satisfies the criteria for both reliability and validity, supporting its appropriateness for further structural model analysis.

Table 2: Outer loading, AVE, and composite reliability test results

Variables	Indicator	Outer loading	AVE	CR
Organizational culture	OC.1	0.815	0.708	0.924
	OC.2	0.851		
	OC.3	0.903		
	OC.4	0.818		
	OC.5	0.816		
Organizational commitment	OCOM.1	0.815	0.693	0.918
	OCOM.2	0.829		
	OCOM.3	0.831		
	OCOM.4	0.810		
	OCOM.5	0.875		
Innovation	INOV.1	0.708	0.554	0.861
	INOV.2	0.754		
	INOV.3	0.749		
	INOV.4	0.764		
	INOV.5	0.744		
Green HRM practices	PGHRM.1	0.727	0.554	0.882
	PGHRM.2	0.718		
	PGHRM.3	0.763		
	PGHRM.4	0.765		
	PGHRM.5	0.713		
	PGHRM.6	0.783		

Evaluation of the inner model can be conducted by analyzing the R-squared (R²) values or the

coefficients of determination. The data analysis results using SmartPLS produced the following R-squared values (Table 3).

Table 3: R-squared test results

	R-squared
Green HRM practices	0.461
Innovation	0.116

As presented in Table 3, the R-squared (R²) value for the Green HRM Practices construct is 0.461, indicating that 46.1% of the variance in the implementation of Green HRM can be explained by organizational culture, managerial commitment, and innovation. This reflects a moderate level of explanatory power, consistent with the threshold proposed by Hair et al. (2014). These findings suggest that the three factors collectively play a significant role in supporting the adoption of sustainable HRM practices in the catering sector.

In contrast, the R² value for Innovation is only 0.116, indicating a low level of predictive capacity. This implies that additional factors such as leadership characteristics, organizational climate, or external market and regulatory pressures may substantially influence innovation beyond the scope of the current model.

As shown in Table 4, the results of the model fit evaluation indicate that the SRMR value of 0.122 exceeds the recommended threshold (< 0.08), suggesting a lack of fit between the empirical data and the overall theoretical model structure. This mismatch is further supported by the high Chi-Square value (1272.513) and the low NFI value

(0.513), both of which fall significantly below the minimum acceptable standard (0.90). Additionally, the d_{ULS} value (3.430) and the d_G value (2.255) also indicate a poor model fit. When considered alongside the R-squared results, Green HRM Practices at 0.461 (moderate) and Innovation at 0.116 (low) it can be concluded that while the model exhibits some predictive power, its overall fit is suboptimal. Therefore, model refinement or the inclusion of additional variables may be necessary to enhance the model's statistical accuracy and structural validity.

Table 4: Model fit

	Saturated model	Estimated model
SRMR	0.122	0.122
d_{ULS}	3.43	3.43
d_G	2.255	2.255
Chi-square	1272.513	1272.513
NFI	0.513	0.513

A hypothesis in this study is considered supported if the t-statistic value is greater than 1.96 and the p-value is less than 0.05. Fig. 2 presents the bootstrapping results and the t-statistic values for each hypothesized path in the model.

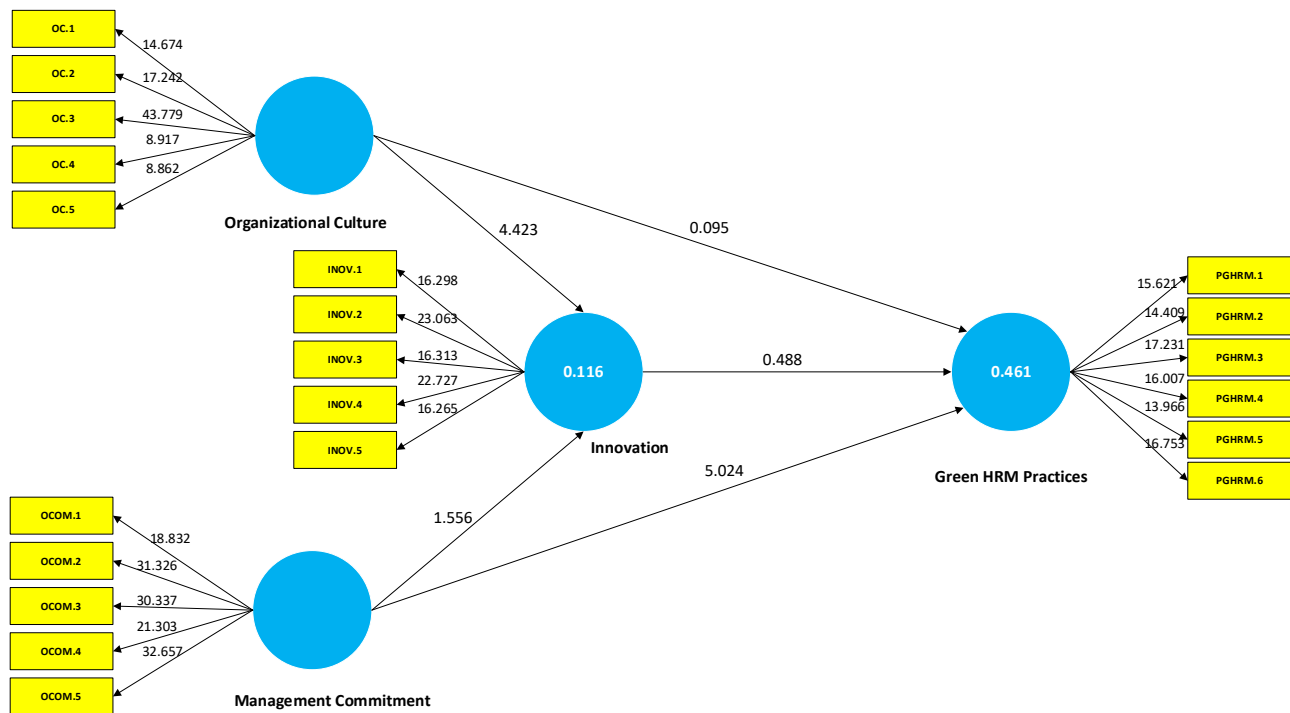


Fig. 2: PLS bootstrapping results

Table 5 presents the estimated coefficient values, t-statistics, and p-values, which serve as the basis for testing the research hypotheses. These values are

used to assess the significance of the influence of the independent variables on the dependent variables within the research model.

Table 5: Results of the T-statistic test and P-value of direct influence

	T-statistic	P-value
Organizational culture -> green HRM practices	0.094	0.925
Management commitment -> green HRM practices	4.617	0.000
Innovation -> green HRM practices	6.547	0.000
Organizational culture -> innovation	4.132	0.000
Management commitment -> innovation	1.498	0.135

Table 5 presents the results of the direct effect analysis, which indicate that organizational culture does not exert a statistically significant direct impact on Green Human Resource Management (Green HRM) practices (T-statistic = 0.094; P-value = 0.925). This finding implies that sustainability-oriented values embedded within organizational culture are insufficient in isolation to drive the adoption of Green HRM initiatives within the catering industry. Conversely, management commitment demonstrates a significant positive influence on Green HRM (T-statistic = 4.617; P-value = 0.000), underscoring the pivotal role of managerial support in promoting environmentally sustainable human resource practices. Furthermore, innovation exhibits a robust

positive effect on Green HRM (T-statistic = 6.547; P-value = 0.000), affirming its critical function in enhancing the effectiveness and sustainability of green HR strategies. While organizational culture significantly contributes to fostering innovation (T-statistic = 4.132; P-value = 0.000), management commitment does not show a statistically significant effect on innovation (T-statistic = 1.498; P-value = 0.135). This suggests that cultivating an organizational culture conducive to innovation is indispensable for advancing Green HRM. Collectively, these results highlight the necessity of both strong managerial commitment and the development of an innovation-oriented organizational culture to effectively implement

sustainable human resource management practices. The results of the indirect effect analysis, presented in [Table 6](#), indicate that organizational culture does not exert a significant indirect effect on Green Human Resource Management (Green HRM) practices through innovation (T-statistic = 1.403; P-value = 0.161). This suggests that innovation does not effectively mediate the relationship between organizational culture and the implementation of Green HRM in the catering industry. In contrast,

organizational commitment demonstrates a significant indirect effect on Green HRM practices via innovation (T-statistic = 3.391; P-value = 0.001), highlighting the critical mediating role of innovation in translating managerial commitment into sustainable HRM practices. These findings emphasize the importance of fostering innovation as a strategic mechanism to enhance the influence of managerial commitment on environmental sustainability in human resource management.

Table 6: The results of the T-statistic test and P-value of indirect influence

	T-statistic	P-value
Organizational culture -> innovation -> green HRM practices	1.403	0.161
Organizational commitment -> innovation -> green HRM practices	3.391	0.001

4.1. Discussion

This section discusses the research findings in relation to the proposed hypotheses and prior studies, with a focus on interpreting the statistical results, exploring theoretical implications, and providing contextual explanations specific to the catering business sector.

a. The influence of organizational culture on green HRM practices in the catering business: The findings of this study indicate that organizational culture does not have a statistically significant direct effect on Green Human Resource Management (Green HRM) practices in catering businesses. This result diverges from numerous previous studies which emphasize the critical role of organizational culture in fostering environmental initiatives through HRM, such as the work of [Renwick et al. \(2013\)](#), [Liu and Lin \(2020\)](#), and [Wu et al. \(2021\)](#), who argued that sustainability-oriented cultural values support the integration of green practices into HR functions such as environmental training, green performance evaluation, and employee participation in CSR activities.

However, our findings align with [Arulrajah et al. \(2015\)](#), who argued that organizational culture does not necessarily influence Green HRM directly, particularly when green values are not formally embedded in HR policies or organizational systems. In the context of small and medium-sized catering enterprises (SMEs), organizational culture often remains informal, undocumented, and individually driven, thus lacking the structural reinforcement needed to influence HRM practices systematically.

The results of interviews with catering business owners in Surabaya and Sidoarjo support this interpretation. Several respondents acknowledged the existence of personal environmental awareness but admitted that it was not institutionalized. One business owner stated, "We do care about the environment, but we don't have formal rules or structured programs about it. Everything still depends on individual intentions."

This points to a lack of formalization, where environmental values remain aspirational rather than operational. Additionally, most catering businesses are driven by short-term objectives such

as time efficiency, customer satisfaction, and cost control. In another interview, an operational manager remarked: "We're more focused on delivering food on time and making sure it tastes good. We don't really talk about recycling or waste reduction training."

Such statements suggest that sustainability is not yet embedded as a core element of daily organizational culture and instead is overshadowed by immediate service concerns.

Moreover, there may be a perception gap between owners and employees. While owners might believe that sustainability is part of the company's values, employees often do not perceive or experience these values in their daily tasks, especially in the absence of green training, communication strategies, or formal evaluation systems. This disconnect further diminishes the potential for culture to drive HRM practices aligned with sustainability goals.

On a deeper level, this non-significance may reflect the indirect nature of the relationship between organizational culture and Green HRM. As supported by our model, innovation or management commitment may act as mediating variables through which culture exerts its influence. Culture alone may not translate into policy or practice unless supported by strong leadership or systemic innovation. While our results confirm that culture significantly influences innovation, its direct effect on Green HRM remains statistically weak.

The findings of this study indicate that organizational culture, in the current condition of catering SMEs, has not been a capable driver of Green HRM practices, due to its informal nature, minimal institutionalization, and limited integration with HR systems. For culture to have a significant impact on Green HRM, catering businesses must develop formal termination policies, ongoing training programs, and leadership support that actively internalize green values and translate them into measurable HRM outcomes.

b. The influence of organizational culture on innovation in the catering business: The results of this study indicate that organizational culture has a positive and significant influence on innovation in the catering business. This finding is consistent with

previous studies that emphasize the critical role of an organizational culture that embraces learning, change, and creativity in fostering innovation (Martins and Terblanche, 2003; Zhang et al., 2023; Kanwal et al., 2024). In the context of the catering industry, innovation is essential for addressing dynamic challenges such as shifting consumer preferences, demands for operational efficiency, and increasing pressure for environmental sustainability.

Theoretically, organizational culture shapes the way members of an organization think and act in response to challenges and opportunities. A culture that supports creativity, collaboration, and controlled risk-taking fosters a psychological climate conducive to the emergence of new ideas, whether in the form of improved work processes, menu diversification, technology adoption, or environmentally friendly practices. Prior literature shows that organizations with an innovative culture tend to exhibit a high level of adaptability to market and environmental changes (Chatterjee et al., 2022; Cao et al., 2025), especially in service sectors like catering, which are labor-intensive and highly dependent on customer satisfaction.

Contextual factors within the catering business also reinforce this relationship. Catering is a highly competitive and rapidly evolving sector, where business owners are constantly required to innovate in products, services, and operational methods. Exploratory interviews with catering business owners in East Java Province revealed that innovations such as digital ordering systems, the use of locally sourced organic ingredients, and eco-friendly packaging have emerged due to internal habits of experimentation and openness to team input. One business owner remarked: "We often have open discussions with the team, so when there's a new idea like a healthy menu or a more efficient delivery system, we immediately test it. It's become a habit here."

This statement illustrates how a collaborative and adaptive organizational culture directly fosters innovation in daily practices.

Previous literature also highlights that organizational culture influences innovation not only structurally but also emotionally and socially. When organizational values encourage experimentation and do not penalize failure, individuals are more confident in proposing new ideas (Zhang et al., 2023; Kanwal et al., 2024). In the catering business, which involves frequent interpersonal interaction, a positive organizational culture enhances communication, strengthens initiative, and accelerates the innovation process.

These findings align with both empirical evidence and theoretical frameworks. Organizational culture in the catering sector has proven to be a vital element driving innovation across product development, process improvement, and strategic planning. Therefore, strengthening cultural values that support creativity, flexibility, and collaboration should be a strategic priority for the long-term development of catering businesses to remain

competitive and sustainable amidst rapid environmental changes.

c. The Influence of management commitment on green HRM practices in the catering business: The results of this study indicate that management commitment has a positive and significant influence on Green Human Resource Management (Green HRM) practice in the catering business. This finding reinforces the empirical evidence widely presented in previous literature, which highlights that managerial commitment is a key factor in driving the adoption of sustainability strategies at the organizational level (Jabbour and de Sousa Jabbour, 2016; Zaid et al., 2018; Pham and Tran, 2020). In the context of Green HRM, leadership that is committed to environmental values will actively design, implement, and evaluate environmentally friendly HR policies.

Theoretically, management commitment reflects the extent of leadership support and involvement in achieving strategic organizational goals, including sustainability. This commitment is manifested through the provision of resources, the formulation of policies, and the creation of an organizational climate conducive to sustainable HRM practices such as environmental training, green-based recruitment, and performance-based environmental incentive systems (Renwick et al., 2013; Chatterjee et al., 2022). In the catering industry, which faces significant challenges related to waste management, energy use, and supply chain sustainability, active management involvement is crucial for initiating systematic changes in HRM practices.

Previous literature consistently supports the significance of this relationship. Studies by Jabbour and de Sousa Jabbour (2016) and Dangelico et al. (2017) suggested that environmentally conscious leadership shapes work culture and operational processes that support sustainability. Even in both manufacturing and service sectors, managerial commitment has been shown to enhance compliance with environmental regulations and encourage innovation in HR management. Therefore, the findings of this study align with the mainstream literature and reinforce the position that, without top management support, Green HRM is unlikely to be effectively implemented.

However, this finding contrasts with the study by Arulrajah et al. (2015), which, in certain contexts, argued that management commitment does not always guarantee comprehensive Green HRM implementation. This discrepancy may be explained by differences in industry context and organizational scale. Arulrajah et al.'s (2015) study focused more on large, bureaucratic organizations where managerial commitment tends to be symbolic or not effectively translated into operational policies. In contrast, within the context of small and medium-sized catering businesses, management is often directly involved in day-to-day decision-making, allowing commitment to be more quickly and tangibly reflected in HRM practices. Furthermore, interviews with catering business owners revealed that leaders

who are aware of the importance of sustainability are more proactive in organizing energy-saving training, optimizing work schedules, and promoting policies that use local and eco-friendly materials. One business owner stated: "If I don't guide the team to save on materials and energy, we could suffer losses. So, we regularly hold briefings on environmentally friendly practices, even if informally."

This illustrates that in catering businesses, management commitment often serves as a direct driver of Green HRM due to the close relationship between leadership and operational execution.

The findings of this study indicate that management commitment in catering businesses plays an important and practical role in promoting Green HRM practices. This finding reaffirms that in organizations with simpler structures and more direct working relationships, management commitment can serve as a key determinant of the success of implementing sustainable HR policies.

d. The influence of management commitment on innovation in the catering business: The results of this study indicate that management commitment does not have a significant effect on innovation in the catering business (T-statistic = 1.498; P-value = 0.135). This finding suggests that within the context of the catering industry, managerial involvement and support for sustainability have not yet fully translated into the creation of relevant and measurable innovations in organizational practices. These results contrast with much of the previous literature, which consistently demonstrates a positive and significant relationship between management commitment and organizational innovation (Dangelico et al., 2017; Jabbour and de Sousa Jabbour, 2016; Chatterjee et al., 2022).

Prior studies have asserted that management with a strong commitment to sustainability tends to foster an environment that encourages creativity, experimentation, and the development of new ideas, including those related to green processes, products, and business strategies (Dangelico et al., 2017; Chaudhary and Sharma, 2023). This commitment is often reflected through the allocation of resources for research, training, and incentives for innovative employees. In the context of large-scale manufacturing industries, this relationship has been found to be significant due to the presence of formal structures and sufficient funding capacity to support innovation.

However, in the context of small and medium-sized catering businesses such as those examined in this study, the non-significant result may be explained by structural and resource limitations, which hinder management's ability to convert sustainability commitments into concrete innovative actions. Based on observations and exploratory interviews with catering business owners, several entrepreneurs expressed awareness of environmental issues and a willingness to change, but lacked the time, dedicated teams, or financial resources to implement systematic innovation. One

business owner stated, "I know being environmentally friendly is important, but developing innovations like digital systems or new packaging requires time and money. Right now, we're still focused on daily operations."

This finding diverges from the study by Jabbour and de Sousa Jabbour (2016), which identified management commitment as one of the key drivers of green innovation across various industrial sectors. This discrepancy may be due to differing organizational contexts. Jabbour and de Sousa Jabbour's (2016) research focused on large-scale manufacturing sectors with more complex managerial structures, where planning and execution are clearly separated. In contrast, catering businesses, especially SMEs, often have managers who are also directly involved in operational tasks, meaning their focus is more consumed by routine activities than innovation development.

The lack of a significant relationship between management commitment and innovation in catering businesses suggests that innovation may be more influenced by other factors, such as organizational culture, market pressures, or external drivers like environmental regulations and customer demands. In this study, organizational culture was found to have a significant effect on innovation, indicating that internal collective values may play a more decisive role in fostering innovation than top-down managerial commitment.

Based on the findings of this study, in the context of the catering business, management commitment to sustainability is not sufficient to directly drive innovation unless it is supported by a robust structure, adequate resources, and an organizational culture that is open to change. Therefore, it is important for catering business actors to not only demonstrate commitment through intentions but also to develop systems, policies, and work environments that sustainably support the innovation process.

e. The influence of innovation on green HRM practices in the catering business: The findings of this study indicate that innovation has a positive and significant influence on the implementation of Green Human Resource Management (Green HRM) practices in the catering business. This result reinforces the notion that innovation is a crucial factor in driving the successful adoption of Green HRM, particularly in the catering sector, which faces complex environmental challenges such as food waste management, energy efficiency, and the use of eco-friendly packaging. These findings are consistent with prior research that underscores the importance of innovation in advancing sustainable human resource practices (Ren et al., 2021).

Conceptually, innovation enables organizations to develop new methods of managing human resources grounded in environmental values, such as sustainability-oriented digital recruitment systems, green-based training programs, performance evaluations incorporating environmental indicators, and employee engagement in environmental CSR

initiatives. In the context of the catering business, innovation often manifests using digital technologies for energy-efficient work scheduling, organic waste processing, or the development of environmentally friendly standard operating procedures (SOPs) integrated into HR policies.

Previous literature consistently shows that innovative organizations tend to be more adaptive to sustainability challenges and more capable of effectively implementing Green HRM (Dangelico et al., 2017). Innovation not only enhances operational efficiency and performance but also strengthens employee awareness and participation in achieving long-term environmental goals. In interviews with catering business owners, several stated that changes in HRM practices, such as implementing training on organic material management and offering incentives to employees engaged in environmental initiatives, originated from the need to innovate to remain relevant amidst increasingly eco-conscious consumer demands.

However, these significant findings differ from some previous studies, which suggest that innovation does not necessarily drive Green HRM practices directly. For example, Arulrajah et al. (2015) found that, in some cases, innovation remains technical in nature and has not extended to managerial or HR aspects. This discrepancy can be explained by differences in innovation approaches. In Arulrajah et al.'s (2015) study, innovation is primarily viewed from the perspective of production technology rather than the integration of innovation into HR policies. Conversely, in small and medium-sized catering businesses, innovation is often directly adopted into managerial practices, including HR management, due to more flexible organizational structures and faster implementation of innovative decisions at the operational level.

The findings of this study show that in the service industry, such as catering, innovation does not only cover technological aspects but also business models, work patterns, and employee development systems that are directed at sustainability. This makes the relationship between innovation and Green HRM more direct and impactful compared to sectors with more bureaucratic processes. Therefore, innovation plays a major role in promoting Green HRM practices and improving operational competitiveness and the effectiveness of environmentally based HR strategies. Investing in innovation, either through technology, training, or the development of sustainable work systems, is a strategic step for catering business operators who want to build long-term Green HRM practices.

f. The mediating role of innovation in the relationship between organizational culture and green HRM practices: The findings of this study indicate that innovation does not significantly mediate the relationship between organizational culture and the implementation of Green Human Resource Management (Green HRM) practices. This suggests that although organizational culture has a direct influence on innovation, this innovation is not

sufficient to bridge the impact of culture on the implementation of Green HRM in the catering business context. These findings contradict several previous studies, which emphasized innovation as a key link in transforming organizational culture toward sustainable HRM practices (Meirun et al., 2020; Bataineh et al., 2024).

Conceptually, an organizational culture that promotes openness, creativity, and continuous learning is expected to foster an innovative climate that, in turn, influences environmentally friendly HRM processes and policies (Martins and Terblanche, 2003; Zhang et al., 2023). In various studies, innovation is viewed as a tangible manifestation of organizational cultural values translated into strategy and operational activities, including human resource management. Therefore, the mediating role of innovation in the pathway from organizational culture to Green HRM has been deemed logical and has been proven significant in the manufacturing sector and large corporations.

However, the insignificant results in this study can be attributed to several contextual factors specific to small and medium-sized catering businesses (SMEs). First, in catering businesses, organizational cultural values tend to be implicit and are not formally embedded in HRM policies or innovation systems. Many business owners possess collaborative work cultures or values emphasizing cleanliness and environmental responsibility, yet these values are often not formalized into structured, innovative processes. In an exploratory interview, one business owner stated: "We work here like a family, everyone helps each other, but we haven't thought about creating a formal system or program for training or waste management."

Second, although organizational culture may encourage innovation, the innovations that arise are often unrelated to HR practices and are instead focused on products and services, such as healthy menus, digital ordering systems, or eco-friendly packaging. This indicates that innovation in the catering sector has yet to explicitly target HRM policies, making it insufficient to mediate the relationship between organizational culture and Green HRM practices.

These findings are inconsistent with the studies of Meirun et al. (2020) and Bataineh et al. (2024), which showed that in organizations with innovative cultures, employees are more likely to engage in sustainability initiatives supported by HRM systems, such as green training and environmentally based performance recognition. The discrepancy may be due to the organizational characteristics under study. Meirun et al. (2020) and Bataineh et al. (2024) focused on more formal corporate sectors with well-established HRM and innovation systems.

Additionally, the lack of significance suggests that in catering businesses, organizational culture may contribute directly to Green HRM practices through non-innovative mechanisms, such as informal leadership, close interpersonal relationships among team members, or established traditional practices

that do not necessarily require new innovations. This reflects that innovation has not yet become a functionally integrated part of sustainable HRM in this sector.

The findings of this study indicate that innovation has not effectively mediated the relationship between organizational culture and Green HRM practices in the catering business, in contrast to findings in larger industrial sectors. To strengthen the role of innovation as a mediator, catering business actors need to formalize their organizational culture into HR-driven innovation strategies, including green training programs, environmentally focused reward systems, and the use of technology in work management that supports sustainability.

g. The role of innovation in mediating the relationship between management commitment and green HRM practices: The results of this study indicate that innovation does not significantly mediate the relationship between organizational culture and Green Human Resource Management (Green HRM) practices in the catering business. This finding suggests that although organizational culture has a positive influence on innovation, the innovation that emerges is not strong enough to statistically transmit the influence of culture to Green HRM practices. This outcome contrasts with previous studies asserting that innovation serves as a crucial intermediary in translating sustainability-oriented organizational culture into environmentally friendly HRM systems and policies (Bataneh et al., 2024; Meirun et al., 2020).

Theoretically, an organizational culture that fosters creativity, openness to change, and collective learning should create an innovative climate conducive to implementing environmentally based HRM policies. Prior studies emphasize that innovation functions as a bridge between cultural values and HRM practices aligned with sustainability goals, particularly in organizations with mature innovation systems and HRM frameworks (Martins and Terblanche, 2003; Zhang et al., 2023).

However, in the context of small to medium-sized catering businesses, this insignificant result can be explained by qualitative findings from in-depth exploratory interviews. Several catering business owners reported that, while they uphold cultural values supporting teamwork, cleanliness, and social responsibility, these values have not been formalized into structured systems or innovation strategies. One respondent noted: "We have a culture of helping each other and caring for the environment, but we haven't thought about creating specific training systems or HR rules to support that. Innovation here is more about new menus or faster food delivery methods."

This statement illustrates that innovation in the catering sector tends to be technical or operational in nature, such as packaging, food processing, and ordering systems, rather than focused on HR management. Therefore, although organizational culture promotes innovation, the types of innovation

observed are not directly related to Green HRM practices, leading to a statistically insignificant mediating effect.

Other interviews also revealed limitations in human resources and knowledge regarding how to develop innovation that supports environmentally oriented HRM policies. One business owner shared: "Our employees already understand the importance of saving water and electricity, but we've never had any formal training or programs. It's not that we don't want to, it's just that we don't know where to start."

This reflects that although pro-environmental values may have emerged informally, the absence of HR-based innovations such as green training modules, environmentally focused performance evaluations, or HRM technologies prevents those cultural values from being effectively implemented in Green HRM practices.

In many small catering enterprises, the flat organizational structure and close personal working relationships often result in spontaneous and undocumented innovation. Innovation tends to be individual rather than part of a structured organizational system integrated with HR policies. This contrasts with findings from Meirun et al., (2020) and Bataneh et al. (2024), which focused on large industrial sectors with formally interconnected innovation and HRM systems.

The findings of this study highlight that innovation in the catering business does not yet serve as an effective mediator between organizational culture and Green HRM practices due to limited resources, a lack of HR-based innovation, and weak integration between cultural values and innovation management systems. To optimize innovation's role as a connecting mechanism, there is a need to formalize organizational culture into innovation programs that are relevant to sustainable HRM policies and practices.

4.2. Policy recommendations for catering business owners

Based on the findings of this study, several policy recommendations can be proposed to help catering business owners implement Green Human Resource Management (Green HRM) more effectively and sustainably. First, it is important to formalize HR-based innovation by developing clear policies related to human resource development, such as organizing employee training on environmentally friendly practices, offering incentives for innovative ideas, and documenting process improvements that support sustainability. Second, organizational cultural values that promote sustainability should be integrated into HRM systems. This can be achieved through green-based recruitment, performance evaluations that incorporate environmental contributions, and the formation of dedicated teams responsible for managing environmental programs.

Third, business owners are encouraged to create an innovative work environment by fostering

collaboration and open communication among employees. This can facilitate the exchange of ideas and provide opportunities for experimentation or pilot testing of more efficient and eco-friendly work processes. Fourth, the utilization of environmentally friendly technology should be prioritized. This includes investing in energy-efficient technologies, digitizing HR administrative tasks, and using local or organic raw materials to support both sustainability goals and operational efficiency.

Fifth, strategic partnerships and collaboration with local communities, training institutions, or government bodies should be established to access Green HRM training, obtain environmental certifications, and secure incentives or financial support for innovation initiatives. Lastly, data-driven monitoring and evaluation must be conducted by setting measurable sustainability performance indicators and regularly assessing Green HRM policies and practices to ensure their effectiveness and to inform future decisions.

By adopting these policy recommendations, catering business owners can strengthen their competitive advantage while making a structured and sustainable contribution to environmental preservation.

5. Conclusion

This study concludes that management commitment and innovation have a positive influence on the implementation of Green Human Resource Management (Green HRM) practices in the catering business. Management commitment plays a crucial role in driving the implementation of sustainability strategies in human resource management, while innovation serves as a key element that bridges this commitment into tangible and sustainable HRM practices. On the other hand, organizational culture does not have a direct effect on Green HRM practices but plays an important role in fostering innovation within the work environment.

The study also finds that innovation effectively mediates the relationship between management commitment and Green HRM practices, but does not significantly mediate the relationship between organizational culture and Green HRM. These findings highlight that in the context of catering businesses, the successful implementation of Green HRM depends heavily on the organization's ability to innovate strategically and adaptively, enabling the management's sustainability vision to be realized through concrete HRM policies and actions.

Future research should broaden its scope to other service sectors such as hospitality, restaurants, and cleaning services to provide contextual comparisons of innovation and Green HRM practices. Employing mixed methods is recommended to explore causal relationships more deeply and capture business actors' contextual perspectives. Future studies may also examine additional influencing factors, such as technological support,

transformational leadership, government regulations, and market pressures. Longitudinal and comparative studies across urban and rural areas or different organizational cultures can further enrich insights into the strategic role of innovation in advancing sustainable HRM, especially within the MSME sector.

List of abbreviations

AVE	Average variance extracted
Chi-Square	Chi-square statistic
CR	Composite reliability
CSR	Corporate social responsibility
HR	Human resources
HRM	Human resource management
INOV	Innovation
MSMEs	Micro, small, and medium enterprises
NFI	Normed fit index
OC	Organizational culture
OCOM	Organizational commitment
P-value	Probability value
PGHRM	Green HRM practices
PLS	Partial least squares
PLS-SEM	Partial least squares structural equation modeling
SMEs	Small and medium enterprises
SRMR	Standardized root mean square residual

Compliance with ethical standards

Ethical considerations

This study followed standard ethical research principles. All respondents received clear written and verbal information about the study's purpose and procedures, and participation was entirely voluntary. Participants could withdraw at any time without consequences. Confidentiality was strictly protected. No identifying information appears in the findings, and all data were anonymized, used only for academic purposes, and securely stored. Results are reported in aggregate form to prevent identification of individuals or departments. The study posed no physical or psychological risks. Questionnaire items were designed to be neutral and non-intrusive, and respondents could skip any uncomfortable questions.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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