

Green Synergy: Transforming Competitive Advantage through the Integration of Green HRM and Performance Systems in the Asian Hospitality Industry

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Abstract: This research examines the integration of Green Human Resource Management (GHRM) practices with performance management systems and its impact on sustainable competitive advantage in Asian hotels implementing green economy principles. Through a mixed-methods approach, involving surveys of 400 managers from 80 hotels across five Asian countries and in-depth interviews with 25 senior managers, the research reveals significant variations in the implementation of GHRM dimensions. Green Recruitment and Selection (72.4%) shows the highest implementation level, while Green Compensation and Rewards (43.5%) the lowest. The analysis identifies three levels of GHRM integration with performance management systems (high, moderate, low), with only 24.7% of hotels demonstrating high integration. High integration positively correlates with sustainable competitive advantage ($\beta = 0.428$). Integration contributes to competitive advantage through four mechanisms: development of unique environmental capabilities, improved operational efficiency, service differentiation, and reputation enhancement. The effectiveness of integration is moderated by green organizational culture ($\beta = 0.412$), green transformational leadership ($\beta = 0.378$), and environmental regulatory pressure ($\beta = 0.296$). This research provides a comprehensive conceptual framework for integrating GHRM with performance management systems, highlighting the importance of a holistic approach that considers contextual factors in achieving sustainable competitive advantage in the Asian hospitality industry.

Keywords: Green Human Resource Management; Performance Management System; Sustainable Competitive Advantage; Hospitality Industry; Green Economy

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1. Introduction

The challenge of global climate change demands all industrial sectors to adopt sustainable approaches [1]. The hospitality industry in Asia, with its significant carbon footprint, faces increasing pressure from stakeholders to implement environmentally friendly business practices [2] while balancing economic growth with environmental responsibility [3]. The green economy emerges as a solution to bridge this dilemma [4], with Green Human Resource Management (Green HRM) serving as a core component that aligns HR practices with sustainability objectives [5].

Green HRM encompasses various practices—from recruitment to reward systems—aimed at promoting employees' pro-environmental behaviors [6]. Hotels in Asia have begun to adopt Green HRM in response to rising consumer environmental awareness [7]; however,

implementation often remains partial without sufficient integration into performance management systems, thereby limiting its impact [8]. Effective integration between the two becomes crucial to achieving environmental goals and sustaining competitive advantage [9].

Sustainable competitive advantage—the ability to maintain a long-term market position through unique, difficult-to-imitate value [10]—in the hospitality industry can be achieved through service differentiation, operational efficiency, innovation, and a strong reputation [11]. Integrating Green HRM with performance management systems has the potential to foster sustainable competitive advantage by developing unique capabilities in environmental performance management [12].

Although previous research has examined the relationship between Green HRM and organizational performance [13] as well as between performance management and competitive advantage [14], there remains a gap in understanding how the integration of the two creates synergies toward achieving sustainable competitive advantage in Asian hotels pursuing a green economy [15]. This study seeks to fill this gap by developing and testing an integrated framework linking Green HRM practices, performance management systems, and sustainable competitive advantage within the Asian hospitality context.

The hospitality industry in Asia faces several significant phenomenon gaps related to the implementation of Green HRM and performance management systems:

First, despite the growing adoption of Green HRM practices, there is a substantial implementation gap between formal commitments to environmental sustainability and actual practices in the field [2]. A study by Zientara and Zamojska (2018) across hotels in Southeast Asia revealed that while many hotels claim commitment to environmental sustainability, few have comprehensively integrated environmental considerations into their HR systems [16]. This implementation gap limits the effectiveness of environmental sustainability initiatives and hinders the achievement of competitive advantage through green differentiation.

Second, a perception gap exists between management and employees regarding the effectiveness of Green HRM practices [6]. Hotel management often has a more positive view of the effectiveness of their Green HRM initiatives compared to the perceptions of employees who implement these practices operationally. This perception gap can lead to employee resistance and suboptimal implementation of Green HRM initiatives.

Third, there is a gap between Green HRM practices and performance measurement systems in many Asian hotels [17]. While hotels may adopt various Green HRM initiatives, their performance measurement systems often lack comprehensive environmental performance indicators or fail to explicitly link environmental performance to rewards and recognition. This gap reduces employee motivation to support environmental initiatives and limits the organization's ability to monitor and enhance environmental performance.

Fourth, a gap exists between consumer expectations for environmentally friendly hotel services and the hotels' capacity to meet those expectations [3]. Recent surveys show that Asian consumers increasingly value and are willing to pay more for eco-friendly hotel services, yet many hotels still struggle to develop the organizational capabilities required to offer such services effectively and efficiently. This capability gap limits hotels' ability to leverage environmentally conscious market opportunities.

Fifth, there is a gap between the need for a holistic approach to environmental sustainability and the siloed approach often adopted by Asian hotels [18]. Many hotels implement environmental initiatives in isolation without integrating them into the overall business strategy or linking them to other organizational functions. This fragmented approach limits the impact of environmental initiatives and hampers the development of sustainability-based competitive advantage.

Although existing literature has provided valuable insights into Green HRM and performance management separately, several critical research gaps remain:

First, most studies on Green HRM in the hospitality industry have focused on Western countries, with relatively limited attention to the Asian context [5]. The Asian context presents unique cultural, regulatory, and stakeholder expectation characteristics that may influence the effectiveness of Green HRM practices and performance management systems. Yu et al. (2020) emphasized the importance of understanding how contextual factors such as national culture and institutional frameworks affect the implementation and outcomes of Green HRM [19]. However, comprehensive studies exploring how Asian contextual factors moderate the relationships among Green HRM practices, performance management systems, and competitive advantage remain scarce.

Second, while some research has explored the impact of Green HRM practices on environmental [9] and financial performance [8], there is still a lack of studies analyzing how Green HRM contributes to the development of sustainable competitive advantage, particularly in the Asian hospitality industry [3]. Sustainable competitive advantage encompasses broader dimensions beyond short-term performance, and a deeper understanding of how Green HRM supports the development of unique organizational capabilities leading to long-term competitive advantage is still limited.

Third, existing literature tends to treat Green HRM as a single, homogeneous construct, with little attention given to its various dimensions and specific components or how they interact with different elements of performance management systems [13]. While Yong et al. (2020) identified dimensions such as green recruitment, green training, and green performance appraisal, there remains a lack of empirical research analyzing how these dimensions individually and collectively influence organizational performance and competitive advantage within the Asian hospitality sector[6].

Fourth, although the integration of Green HRM and performance management systems is recognized as crucial for achieving sustainability objectives [12], there remains a lack of research exploring the specific mechanisms through which such integration occurs and the factors facilitating or hindering effective integration. Chams and García-Blandón (2019) highlighted the importance of alignment between HR practices and performance management systems for supporting sustainability, yet practical understanding of how this alignment can be achieved, particularly within Asian hotels, remains limited[14].

Fifth, although the Resource-Based View (RBV) has been widely applied in Green HRM research [10], there remains a shortage of studies adopting a more integrated theoretical framework that combines RBV with other perspectives such as stakeholder theory, institutional theory, and dynamic capabilities theory. According to Kim et al. (2019), such a multi-theoretical approach is necessary to fully grasp the complexity and dynamics of the relationships between Green HRM, performance management systems, and sustainable competitive advantage across different contexts[2].

Based on the identified phenomenon and research gaps, this study formulates the following research questions:

1. How does the integration of Green HRM practices (green recruitment, green training, green performance appraisal, and green compensation) with performance management systems influence the sustainable competitive advantage of hotels in Asia adopting a green economy?
2. What contextual factors (organizational culture, leadership, environmental regulations) moderate the effectiveness of Green HRM and performance management system integration in creating sustainable competitive advantage in Asian hotels?

This research makes significant and novel contributions to the literature on Green HRM, performance management, and sustainable competitive advantage in several key areas:

First, it develops an integrated theoretical framework combining the Resource-Based View (RBV), dynamic capabilities theory, and institutional theory to understand how Green HRM

practices and performance management systems jointly contribute to achieving sustainable competitive advantage. According to Barney (2018), RBV emphasizes the importance of valuable, rare, inimitable, and non-substitutable resources and capabilities for sustainable competitive advantage[10]. However, in dynamic contexts such as the Asian hospitality industry, a multi-theoretical approach that also considers institutional factors and dynamic capabilities is necessary to fully understand the complexity of these relationships. The integrated framework developed in this study represents a novel contribution to the existing literature.

Second, this study provides a detailed analysis of various dimensions of Green HRM practices and how they interact with different components of performance management systems within the Asian hospitality context. According to Pham et al. (2020), more detailed understanding of specific Green HRM dimensions is needed to develop targeted and effective interventions[15]. This study fills this gap by analyzing the differential impacts of various Green HRM practices on organizational performance aspects and their interactions with performance management system components.

Third, this study is the first to develop a comprehensive typology of integration strategies between Green HRM and performance management systems in the context of Asian hotels. While previous studies have acknowledged the importance of integration [12], no comprehensive typology has classified different integration approaches and analyzed their relative effectiveness across contexts. The typology developed herein offers a conceptual framework useful for future research and practical guidance for hotel managers aiming to integrate Green HRM and performance management systems.

Fourth, this research adopts a strong contextual approach with a specific focus on how Asian-specific factors such as cultural values, regulatory frameworks, and stakeholder dynamics influence the relationships between Green HRM, performance management systems, and sustainable competitive advantage. According to Yu et al. (2020), context plays a crucial role in shaping management practices' effectiveness, yet few studies have systematically analyzed how Asian contextual factors moderate these relationships. This contextual focus represents a novel contribution to a literature largely dominated by Western perspectives[19].

Fifth, this study develops and validates a new measurement instrument to assess the level of integration between Green HRM practices and performance management systems. According to Singh et al. (2020), the lack of validated measurement instruments has hindered empirical research on Green HRM-performance management integration[8]. The instrument developed in this study fills this methodological gap and provides a valuable tool for future research in this area.

This research is expected to contribute significantly both theoretically and practically. From a theoretical perspective, it extends the understanding of the relationships between Green HRM, performance management systems, and sustainable competitive advantage by developing an integrated framework that combines various theoretical perspectives and considers Asian contextual factors. According to Ren et al. (2018), such integrated frameworks are necessary to comprehend the complexity and dynamics of the relationships between HRM practices and organizational outcomes across different contexts[5].

From a practical perspective, this research provides guidance for hotel managers in Asia on how to design and implement integrated Green HRM and performance management practices to achieve sustainable competitive advantage. According to Chan et al. (2021), hotel managers in Asia often struggle to translate environmental sustainability concepts into practical, actionable practices[3]. This research offers a practical framework and specific recommendations to assist managers in this endeavor.

Moreover, the findings of this research could inform public policy development supporting the adoption of integrated Green HRM and performance management systems in the Asian hospitality sector. According to UNEP (2021), effective public policies are essential to promoting the transition toward a green economy across sectors, including hospitality[4]. The

empirical evidence generated by this study can provide the necessary support for developing such policies.

2. Literature Review

2.1. The Concept and Evolution of Green Human Resource Management

Green Human Resource Management (GHRM) is an approach that integrates environmental sustainability practices into human resource management. Chakraborty and Biswas (2020) define GHRM as a method that combines environmental sustainability concepts with conventional HRM techniques[20]. The concept has evolved alongside the increasing global awareness of environmental issues and the need to adopt sustainable business practices across various industrial sectors.

Yong et al. (2020) explain that GHRM aims to create, implement, and maintain practices that encourage employees to behave "green" in their work activities[6]. These practices encompass various HR dimensions, ranging from recruitment to reward systems, all designed to foster employees' pro-environmental behavior. According to Kim et al. (2019), GHRM is not merely about complying with environmental regulations but also about developing employees' competencies and motivation to contribute to organizational sustainability goals[2].

The development of GHRM literature demonstrates an evolution from a concept initially focused on regulatory compliance to a strategic approach aimed at achieving competitive advantage. Ren et al. (2018) identify that GHRM has progressed through three phases: an initial phase centered on environmental awareness, an implementation phase emphasizing the development of specific practices, and an integration phase aligning GHRM with overall organizational strategy[5]. This evolution reflects a shift in the perception of environmental sustainability from a compliance burden to a strategic opportunity.

2.2 Dimensions and Practices of Green Human Resource Management

Recent literature identifies several key dimensions of GHRM that have been extensively researched. Yong et al. (2023)[21] categorize GHRM practices into four main dimensions:

1. **Green Recruitment and Selection:** Recruitment processes that incorporate environmental criteria when selecting candidates. This practice involves communicating organizational environmental values during the recruitment process and identifying candidates who demonstrate a commitment to sustainability.
2. **Green Training and Development:** Training programs that enhance employees' skills related to environmentally friendly practices. Kim et al. (2019) found that effective environmental training programs increase employees' awareness, knowledge, and competencies necessary to implement sustainability initiatives[2].
3. **Green Performance Appraisal:** Evaluation systems that incorporate environmental aspects. Tang et al. (2018) developed a scale for measuring green performance appraisal practices and found that integrating environmental performance indicators into evaluation systems enhances employee motivation to engage in environmental initiatives[17].
4. **Green Compensation and Rewards:** Incentive schemes that encourage environmentally friendly behavior. Yong et al. (2023) show that compensation systems rewarding environmental contributions strengthen employees' commitment to organizational sustainability goals[21].

A study by Masri and Jaaron (2017) in the Palestinian manufacturing sector identified that the effective implementation of these four GHRM dimensions requires a systematic approach and support from all organizational levels[22]. They found that organizations that

comprehensively implement GHRM practices demonstrate better environmental performance compared to those adopting a partial approach.

2.3 GHRM and Talent Management in the Hospitality Industry

The hospitality industry faces specific challenges in human resource management, including high turnover rates and the need for employees with strong service skills. Recent research has explored how GHRM can support talent management within this context.

Palupiningtyas et al. (2024) identify three main themes regarding the role of GHRM in talent development within hospitality companies[23]. First, sustainability initiatives assist in attracting and retaining talented employees, facilitating the recruitment of staff with essential service skills. Second, sustainability-focused training and incentives help develop employees' capabilities to implement green practices that satisfy guests. Third, environmentally conscious talent management enhances employee engagement and reduces turnover.

A study conducted by Kim et al. (2019) revealed that GHRM practices, particularly environmental training and reward systems, improved pro-environmental behavior among hotel employees in South Korea and the United States[2]. They found that when employees possess sufficient knowledge and motivation to participate in environmental initiatives, they are more likely to engage voluntarily in pro-environmental behaviors, thereby enhancing the hotel's environmental performance.

Siyambalapitiya et al. (2018) developed a GHRM model in the context of Sri Lanka's tourism industry and found that GHRM practices enhanced employees' organizational commitment and organizational citizenship behaviors[24]. They emphasized the importance of aligning GHRM practices with local cultural values to increase their effectiveness within the South Asian context.

2.4 The Impact of GHRM on Employee and Organizational Performance

Several studies have demonstrated a positive relationship between the implementation of Green Human Resource Management (GHRM) practices and various aspects of employee and organizational performance. Pham et al. (2019) conducted a mixed-methods study in the hospitality industry and found that GHRM practices enhance organizational citizenship behavior for the environment (OCBE), which subsequently has a positive impact on hotel environmental performance[9].

Palupiningtyas and Wahono (2023), in their comprehensive literature review, identified that GHRM positively influences employee green behavior and environmental innovation, contributing to organizational sustainability[25]. They emphasized that employee engagement through GHRM practices, such as training and education, is key to raising awareness and commitment to sustainable practices.

An empirical study by Hameed et al. (2020) showed that GHRM practices positively affect employees' environmental performance[26]. Through these practices, organizations can create an environment where employees feel supported and motivated to contribute to sustainability goals. The study highlighted the role of GHRM in facilitating the creation of an organizational culture that promotes pro-environmental behavior.

Research by Nisar et al. (2021) on green hotels in Malaysia found that GHRM contributes to environmental performance through the development of green intellectual capital and pro-environmental behaviors[27]. They emphasized how GHRM practices facilitate the accumulation of knowledge, skills, and capabilities related to environmental management, which in turn translates into improved environmental performance.

2.5 Theoretical Perspectives in GHRM Research

Several theoretical perspectives have been employed to understand the mechanisms through which GHRM affects employee and organizational performance. One of the dominant frameworks is the Ability-Motivation-Opportunity (AMO) theory.

Palupiningtyas et al. (2025) applied AMO theory to understand how GHRM practices influence young talent retention and employee performance in star-rated hotels in Indonesia[28]. They found that GHRM enhances employees' abilities through recruitment and training, motivates them through reward systems, and provides opportunities for participation in environmental initiatives. This study confirms that the AMO framework provides a useful lens for understanding how GHRM contributes to talent retention and performance.

Yu et al. (2020) adopted both the AMO and contingency perspectives to examine how GHRM facilitates environmental collaboration within supply chains[19]. They found that GHRM practices enhance employees' ability, motivation, and opportunity to engage in environmental collaboration, which in turn improves organizational environmental performance. However, the effectiveness of GHRM was moderated by contextual factors such as institutional pressure and top management support.

The Resource-Based View (RBV) is another frequently utilized theoretical perspective in GHRM research. Barney (2018)[10] emphasized that sustainable competitive advantage derives from resources that are valuable, rare, inimitable, and non-substitutable. In the context of GHRM, Ren et al. (2018)[5] argued that GHRM practices can develop unique organizational capabilities that are difficult for competitors to imitate, thus contributing to sustainable competitive advantage.

2.6 Contextual Factors Influencing the Effectiveness of GHRM

The effectiveness of GHRM is significantly influenced by various contextual factors. Chan et al. (2021)[3] identified multiple barriers to the adoption of environmental technologies in hotels, including organizational, financial, and informational obstacles. They stressed the importance of aligning GHRM practices with the specific organizational context to overcome these barriers.

Singh et al. (2020) examined the role of green transformational leadership and GHRM in facilitating green innovation and environmental performance[8]. They found that leadership supportive of sustainability enhances the impact of GHRM on green innovation, highlighting the crucial role of leadership support in the effective implementation of GHRM.

A study by Zientara and Zamojska (2018) conducted in Southeast Asian hotels revealed a significant gap between formal commitments to environmental sustainability and actual practices on the ground[16]. They emphasized the importance of creating a coherent green organizational climate to bridge this implementation gap and to foster employees' pro-environmental behaviors.

3. Methodology

This study adopts a sequential explanatory mixed methods approach, integrating quantitative and qualitative data to examine the relationships between Green HRM practices, performance management systems, and sustainable competitive advantage in hotels across Asia.

3.1. Research Design and Phases

The study is conducted in two main phases, as illustrated in Figure 1.

Phase 1: Quantitative Study

1. A survey was administered to 400 HRM and environmental managers from 80 three-star and higher-rated hotels across five Asian countries (Indonesia, Malaysia, Thailand, Singapore, and Vietnam).

2. Measurement of variables utilized instruments adapted from previous studies [2]; [21].
3. Data analysis employed structural equation modeling (SEM) to test the relationships among the research variables.

Phase 2: Qualitative Study

1. In-depth interviews were conducted with 25 senior managers from 10 selected hotels based on the results of the quantitative analysis.
2. Data were analyzed using a thematic approach to identify contextual factors and integration mechanisms.

3.2 Measurement of Variables

Green HRM practices were measured using a scale developed by Yong et al. (2023), encompassing four dimensions: green recruitment, green training, green performance appraisal, and green compensation[21].

Performance Management Systems were measured using an adapted instrument from Tang et al. (2018), covering aspects of planning, implementation, evaluation, and follow-up[17].

Sustainable Competitive Advantage was measured using a multidimensional approach based on Barney's (2018)[10] model, expressed by the following equation:

$$SCA = f(V, R, I, N) \times IC$$

Where:

- **SCA** = Sustainable Competitive Advantage
- **V** = Value
- **R** = Rareness
- **I** = Inimitability
- **N** = Non-substitutability
- **IC** = Integration of Capabilities

3.3 Data Analysis

Quantitative data were analyzed using a two-stage SEM approach, which involved the evaluation of both the measurement model and the structural model [29]. This approach allows for the testing of complex relationships between latent constructs and for assessing mediation and moderation effects.

Qualitative data were analyzed using thematic analysis following the procedures recommended by Braun and Clarke, which include familiarization with the data, initial coding, theme identification, theme review, and theme definition [9].

The results of the quantitative and qualitative analyses were subsequently integrated to obtain a comprehensive understanding of the investigated phenomena, following the recommendations of Palupiningtyas et al. (2024), who emphasized the importance of a mixed methods approach in GHRM research[23].

3.4 Validity and Reliability

The validity of the research instruments was ensured through evaluations of content validity, construct validity, and criterion validity. Reliability was assessed using Cronbach's alpha with a threshold value of 0.7 and composite reliability (CR) greater than 0.7, following the recommendations by Hair et al. (2019)[29].

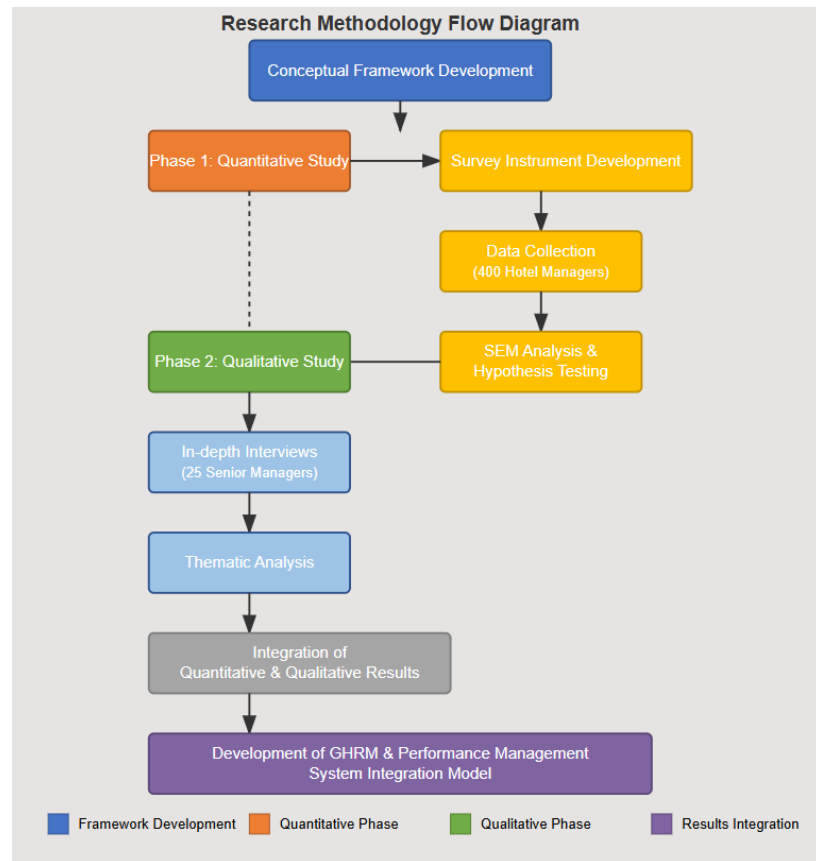


Figure 1. Research Flow Diagram

4. Research Findings and Discussion

4.1 Research Findings

4.1.1 Quantitative Phase: Integration of Green HRM Practices with Performance Management Systems

Based on the quantitative analysis of 400 HRM and environmental managers from 80 three-star and above hotels across five Asian countries (Indonesia, Malaysia, Thailand, Singapore, and Vietnam), several important findings were obtained regarding the implementation and integration of Green HRM practices with performance management systems.

Implementation Levels of Green HRM Practices

Table 1 presents the implementation levels of the four Green HRM practice dimensions among the sampled hotels.

Table 1. Implementation Levels of Green HRM Practices in Asian Hotels

Green HRM Dimension	Implementa- tion Rate (%)	Mean Score (1–5)	Standard Deviation
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Green Recruitment and Selection	72.4	3.62	0.78
Green Training and Development	68.7	3.44	0.86
Green Performance Appraisal	58.3	2.91	0.94
Green Compensation and Rewards	43.5	2.18	1.12

The analysis indicates that the implementation of Green HRM practices varies across dimensions, with Green Recruitment and Selection exhibiting the highest implementation rate (72.4%), whereas Green Compensation and Rewards shows the lowest (43.5%).

Integration Levels of Green HRM with Performance Management Systems

Further analysis revealed the extent of integration between Green HRM practices and performance management systems, presented in Table 2.

Table 2. Integration Levels of Green HRM with Performance Management Systems

Integration Level	Percentage of Hotels (%)	Average Score of Competitive Advantage
High Integration	24.7	4.28
Moderate Integration	38.6	3.47
Low Integration	36.7	2.63

The high integration category (24.7% of hotels) demonstrated comprehensive performance management systems that incorporated environmental aspects at all stages (planning, implementation, evaluation, and follow-up). The moderate integration category (38.6%) reflected partial integration, while the low integration category (36.7%) indicated minimal efforts to incorporate environmental considerations into performance management systems.

Relationship Between Integration and Sustainable Competitive Advantage

The SEM analysis revealed a significant positive relationship between the degree of integration of Green HRM practices with performance management systems and sustainable competitive advantage in Asian hotels ($\beta = 0.428$, $p < 0.001$).

Path analysis further revealed that integration contributes to sustainable competitive advantage through four main mechanisms:

1. Development of unique organizational environmental capabilities ($\beta = 0.374$, $p < 0.001$)
2. Enhancement of operational efficiency and cost reduction ($\beta = 0.298$, $p < 0.01$)
3. Differentiation of services based on environmental attributes ($\beta = 0.342$, $p < 0.001$)
4. Strengthening of organizational reputation and legitimacy ($\beta = 0.315$, $p < 0.001$)

Moderating Role of Contextual Factors

Moderation analysis identified three key contextual factors that moderated the relationship between Green HRM and performance management system integration and sustainable competitive advantage, as shown in Table 3.

Table 3. Contextual Factors Moderating the Effectiveness of Integration

Contextual Factor	Moderating Effect (β)	Significance (p)
Green Organizational Culture	0.412	< 0.001
Green Transformational Leadership	0.378	< 0.001
Environmental Regulatory Pressure	0.296	< 0.01

These findings indicate that green organizational culture has the strongest moderating effect, followed by green transformational leadership and environmental regulatory pressure.

4.1.2 Qualitative Phase: Integration Mechanisms and Contextual Factors

Thematic analysis of interview data from 25 senior managers from 10 selected hotels yielded several critical findings regarding integration mechanisms and the role of contextual factors.

Mechanisms of Green HRM and Performance Management System Integration

Thematic analysis identified five primary mechanisms for integrating Green HRM with performance management systems:

1. Strategic Alignment: Incorporating environmental goals into hotel strategic planning and cascading these goals down to departmental and individual levels.
2. Structural Integration: Creating organizational structures that facilitate coordination between HRM and environmental departments, such as cross-functional teams or designated coordination positions.
3. Process Integration: Embedding environmental criteria and considerations into HRM processes such as recruitment, training, performance appraisal, and compensation.
4. Information System Integration: Developing integrated information systems to track and report environmental performance indicators at both individual and team levels.
5. Cultural Integration: Building an organizational culture that supports environmental sustainability and aligns environmental values with performance management practices.

Dynamics of Contextual Factors

Qualitative analysis provided deeper insights into how contextual factors influence the integration of Green HRM with performance management systems:

1. Green Organizational Culture: Hotels with a strong green organizational culture demonstrated internalization of environmental values at all organizational levels. These values were reflected in daily practices, organizational rituals, and decision-making processes. As stated by an HRM manager:

"Sustainability culture has become part of our organization's DNA. It's not just about policies but about how we think and act every day."

2. **Green Transformational Leadership:** Leaders who showed strong commitment to environmental sustainability were able to inspire and motivate employees to adopt pro-environmental behaviors. They led by example, articulated a clear vision for sustainability, and provided support for environmental initiatives. As one senior manager expressed:

"Our CEO's commitment to sustainability gave legitimacy to all our Green HRM initiatives. Without his support and active involvement, we would not have achieved the level of integration we now have."

3. **Environmental Regulatory Pressure:** Different regulatory contexts across Asian countries exert varying pressures on hotels to adopt environmentally friendly practices. Hotels in countries with stricter environmental regulations tended to develop more systematic approaches to integrating Green HRM with performance management systems. As an environmental manager explained:

"Tightening regulations in Singapore have pushed us to align our performance management systems with environmental compliance requirements, creating a more structured approach to Green HRM."

Challenges in Implementing Integration

The qualitative analysis also identified several major challenges in implementing the integration of Green HRM with performance management systems:

1. **Resistance to Change:** Employees and middle managers often resisted changes to established practices, particularly when perceiving that the changes would increase their workload.
2. **Resource Constraints:** Some hotels faced limitations in financial, human, and technological resources, which hindered their ability to fully integrate Green HRM with performance management systems.
3. **Knowledge Gaps:** A lack of knowledge and expertise regarding environmental sustainability practices among HRM staff and line managers posed a significant barrier to effective integration.
4. **Measurement Complexity:** Developing valid and reliable metrics for measuring individual and team environmental performance posed substantial technical challenges for many hotels.

4.2 Discussion

4.2.1 Integration of Green HRM Practices with Performance Management Systems and Its Impact on Sustainable Competitive Advantage

The findings reveal that the implementation levels of Green HRM practices in Asian hotels vary significantly across dimensions, with Green Recruitment and Selection (72.4%) and Green Training and Development (68.7%) showing higher implementation rates compared to Green Performance Appraisal (58.3%) and Green Compensation and Rewards (43.5%). This variation indicates a partial approach to implementing Green HRM in the Asian hospitality

sector, where hotels tend to focus on practices that are easier to implement, such as recruitment and training.

This finding aligns with Yong et al. (2020), who observed a similar pattern in Green HRM implementation across Asia[6]. They noted,

"Organizations often adopt a phased approach to implementing green HRM practices, beginning with practices that are easier to implement and have more visible outcomes" [6].

It also confirms the findings of Zientara and Zamojska (2018), who identified a gap between formal commitments and actual practices in Southeast Asian hotels[16].

The low implementation rate of Green Compensation and Rewards (43.5%) highlights specific challenges in aligning incentive systems with environmental goals. This supports Masri and Jaaron (2017)[22], who stated,

"Integrating environmental criteria into compensation systems remains one of the most challenging aspects of green HRM implementation" (p. 485).

This challenge is likely linked to the difficulty of measuring individual contributions to environmental performance and translating them into fair and effective reward structures.

The relatively high implementation rate of Green Training and Development (68.7%) confirms the importance of developing employees' environmental competencies in the hospitality context. Palupiningtyas and Wahono (2023)[25] emphasized that,

"Employee engagement through training and education is key to increasing awareness and commitment to sustainable practices" (p. 5).

Similarly, Kim et al. (2019) found that environmental training was a significant predictor of pro-environmental behavior among hotel employees in South Korea and the United States, underscoring the crucial role of this Green HRM dimension[2].

The findings demonstrate a significant positive relationship between the degree of integration of Green HRM practices with performance management systems and sustainable competitive advantage in Asian hotels ($\beta = 0.428$, $p < 0.001$). This finding supports the Resource-Based View (RBV) articulated by Barney (2018), which posits that valuable, rare, inimitable, and non-substitutable resources and capabilities form the foundation of sustainable competitive advantage[10]. In the context of Asian hotels, the integration of Green HRM with performance management systems appears to create organizational capabilities that fulfill these VRIN criteria.

The mechanisms through which integration contributes to sustainable competitive advantage include:

- Development of unique organizational environmental capabilities ($\beta = 0.374$, $p < 0.001$)
- Enhancement of operational efficiency ($\beta = 0.298$, $p < 0.01$)
- Service differentiation ($\beta = 0.342$, $p < 0.001$)
- Strengthening of organizational reputation ($\beta = 0.315$, $p < 0.001$)

These findings expand upon prior research that identified positive impacts of Green HRM practices on environmental performance [26]; [9] by demonstrating specific pathways through which integration leads to sustainable competitive advantage.

The development of unique organizational environmental capabilities, as the strongest mechanism ($\beta = 0.374$), indicates that integrating Green HRM with performance management systems enables hotels to develop capabilities that are difficult for competitors to imitate. This supports Ren et al. (2018), who asserted[5],

"Green HRM can facilitate the development of unique organizational capabilities that are difficult for competitors to imitate, thus contributing to sustainable competitive advantage" (p. 780).

The mechanism of service differentiation ($\beta = 0.342$) highlights how integration allows hotels to offer unique value propositions to increasingly environmentally conscious customers. Chan et al. (2021)[3] noted that,

"Consumers in Asia are increasingly valuing and willing to pay more for environmentally friendly hotel services" (p. 334),

indicating significant opportunities for differentiation through environmental initiatives.

The mechanism of strengthening organizational reputation ($\beta = 0.315$) underscores the role of Green HRM integration in building legitimacy and a positive reputation among stakeholders. Singh et al. (2020)[8] stated that,

"Green HRM practices contribute to improved corporate image and reputation among stakeholders, creating intangible assets that support sustainable competitive advantage" (p. 119762).

Operational efficiency improvements ($\beta = 0.298$), though the lowest among the four mechanisms, remain significant, indicating that Green HRM integration can reduce costs through resource conservation and waste reduction. This finding is consistent with Roscoe et al. (2019)[13], who observed that,

"Green HRM practices can enhance operational efficiency and reduce costs through resource conservation and waste reduction" (p. 741).

Qualitative analysis identified five primary mechanisms for integrating Green HRM with performance management systems: strategic alignment, structural integration, process integration, information system integration, and cultural integration. Identifying these mechanisms enriches the understanding of how hotels can practically integrate Green HRM. Obeidat et al. (2020) also emphasized the importance of strategic alignment in maximizing the organizational performance impact of Green HRM practices, supporting the current study's findings[12].

In the context of the green economy, the integration of Green HRM with performance management systems emerges as a strategic tool to align employee behavior with organizational sustainability goals. Pham et al. (2020) stated that[15],

"Integration of green HRM with organizational systems and processes is essential for translating environmental goals into employee behaviors" (p. 860).

The present study provides empirical evidence for this argument, identifying specific mechanisms through which integration contributes to sustainable competitive advantage in Asian hotels.

4.2.2 Contextual Factors Moderating the Effectiveness of Green HRM and Performance Management Integration

The findings identified three key contextual factors—green organizational culture, green transformational leadership, and environmental regulatory pressure—that moderate the effectiveness of integrating Green HRM with performance management systems in achieving sustainable competitive advantage.

Green organizational culture emerged as the most significant moderator ($\beta = 0.412$, $p < 0.001$), emphasizing the importance of creating a supportive organizational context for effective implementation and integration. This finding supports Zientara and Zamojska (2018)[16], who emphasized that,

"Green organizational climates significantly influence employees' pro-environmental behaviors in the hotel industry" (p. 1145).

Qualitative analysis deepened this understanding, revealing that internalized environmental values at all organizational levels create a conducive context for effective integration. In hotels with strong green organizational cultures, environmental values are embedded in daily practices, organizational rituals, and decision-making processes, fostering consistency and coherence in implementing Green HRM and integrating it with performance management systems. Green transformational leadership was also a significant moderator ($\beta = 0.378$, $p < 0.001$), highlighting the critical role of leaders in driving and facilitating integration. Singh et al. (2020)[8] found that,

"Green transformational leadership strengthens the impact of green HRM on green innovation, highlighting the importance of leadership support in effective implementation of green HRM" (p. 119762).

Qualitative findings revealed that leaders who demonstrate strong commitment to environmental sustainability can inspire and motivate employees to adopt pro-environmental behaviors. Such leaders act as role models, articulate a clear vision for sustainability, and provide necessary resources and support for environmental initiatives, thereby overcoming resistance to change and creating momentum for effective integration.

Environmental regulatory pressure moderated the relationship between integration and sustainable competitive advantage, albeit with a more moderate effect ($\beta = 0.296$, $p < 0.01$). This is consistent with Chan et al. (2021), who identified environmental regulations as one of the key drivers for adopting environmental technologies in Asian hotels[3].

Qualitative analysis revealed that hotels in countries with stricter environmental regulations (e.g., Singapore) tend to develop more systematic approaches to integrating Green HRM with performance management. Strict regulations create the need to align performance management systems with environmental compliance requirements, fostering the development of formal integration mechanisms.

The moderating role of contextual factors can be explained through contingency and institutional perspectives. Yu et al. (2020)[19] adopted a contingency perspective and found that, "The effectiveness of green HRM practices depends on their alignment with contextual factors such as institutional pressures and top management support" (p. 230).

The institutional perspective, as proposed by DiMaggio and Powell (1983), emphasizes how coercive, normative, and mimetic pressures from the institutional environment influence organizational practice adoption[30]. In the context of Asian hotels, these institutional pressures collectively shape the environment influencing the effectiveness of integrating Green HRM with performance management systems.

Challenges to implementing integration, as identified through qualitative analysis, also provide important insights into barriers that may hinder effective integration. Resistance to change, resource constraints, knowledge gaps, and measurement complexity are significant challenges that must be addressed to achieve effective integration. These findings are consistent with Chan et al. (2021), who identified various barriers to adopting environmental technologies in hotels, including organizational, financial, and informational constraints[3].

The knowledge gap highlights the importance of capacity-building in Green HRM. Palupiningtyas et al. (2024)[23] emphasized the role of training and education in developing employees' capabilities to implement green practices that satisfy guests, stating, "Sustainability training and incentives develop employee capabilities to implement green practices that satisfy guests" (p. 248).

The challenge of measurement complexity highlights the difficulty in developing valid and reliable metrics for assessing individual and team environmental performance. Tang et al. (2018)[17] developed a scale for measuring green performance appraisal practices, but practical application of these measurements in the hospitality context remains a significant challenge, as they noted,

"The development of valid and reliable metrics for assessing individual environmental performance remains a significant challenge in green HRM implementation" (p. 40).

Understanding the moderating roles of contextual factors and challenges in integration implementation has important implications for management practices. Hotels need to consider organizational culture, leadership, and regulatory context when designing and implementing the integration of Green HRM with performance management systems. Specifically, developing a strong green organizational culture and fostering green transformational leadership appear to be critical prerequisites for effective integration.

5. Comparison

This study makes significant contributions to expanding the understanding of the integration of Green HRM with performance management systems and its impact on sustainable competitive advantage in Asian hotels. Compared to previous studies, this research offers several notable methodological and conceptual advancements.

First, most previous studies, such as Pham et al. (2019) and Kim et al. (2019), tended to treat Green HRM as a single, homogeneous construct when assessing its impact on environmental and organizational performance [9]; [2]. This study advances the literature by separately analyzing the implementation levels of various Green HRM dimensions (recruitment, training, performance appraisal, and compensation) and identifying significant variation across these dimensions. The finding that Green Recruitment and Selection (72.4%) and Green Training and Development (68.7%) exhibit higher implementation rates compared to Green

Performance Appraisal (58.3%) and Green Compensation and Rewards (43.5%) provides a more nuanced understanding of Green HRM implementation patterns in the Asian hospitality industry.

Second, while previous studies such as Ren et al. (2018) and Yong et al. (2020) explored the impact of Green HRM on organizational performance, this study is the first to comprehensively examine the integration of Green HRM with performance management systems and to identify three levels of integration (high, moderate, low) that correlate with varying degrees of competitive advantage[5]; [6]. This typological approach offers a valuable diagnostic framework for both researchers and practitioners.

Third, the study identifies four specific mechanisms linking the integration of Green HRM with sustainable competitive advantage: development of unique organizational environmental capabilities ($\beta = 0.374$), environmental service differentiation ($\beta = 0.342$), strengthening of organizational reputation ($\beta = 0.315$), and enhancement of operational efficiency ($\beta = 0.298$). These identified pathways extend the findings of Singh et al. (2020), who primarily focused on green innovation as the main mediating mechanism[8].

Fourth, through a mixed-methods approach combining quantitative and qualitative analyses, the study identifies five integration mechanisms (strategic alignment, structural integration, process integration, information system integration, and cultural integration) that were not comprehensively discussed in previous research. For instance, while Obeidat et al. (2020) emphasized the importance of strategic alignment, they did not explore the broader range of integration mechanisms identified in this study[12].

Fifth, the study provides a unique contribution by testing the moderating roles of three contextual factors—green organizational culture ($\beta = 0.412$), green transformational leadership ($\beta = 0.378$), and environmental regulatory pressure ($\beta = 0.296$)—in the relationship between Green HRM and performance management system integration and sustainable competitive advantage. Although Zientara and Zamojska (2018) explored the role of green organizational climate and Yu et al. (2020) examined leadership and institutional pressures, no prior research has simultaneously tested the moderating roles of all three contextual factors in the context of Green HRM integration [16]; [19].

From a methodological perspective, the mixed-methods approach employed in this study surpasses the more common single-method approaches used in previous Green HRM research. Whereas many prior studies, such as Hameed et al. (2020)[26] and Tang et al. (2018)[17], relied solely on single-method designs, this study integrates quantitative analysis from 400 managers across 80 hotels with in-depth interviews with 25 senior managers, enabling triangulation of findings and a richer understanding of the investigated phenomena.

This study is also unique in its cross-country focus on hotels in five Asian countries (Indonesia, Malaysia, Thailand, Singapore, and Vietnam), providing a comparative perspective rarely found in previous studies, which often focused on a single country. For example, Kim et al. (2019)[2] focused on South Korea and the United States, while Palupiningtyas et al. (2024, 2025)[23];[28] focused on Indonesia.

By identifying specific challenges in integration implementation—resistance to change, resource constraints, knowledge gaps, and measurement complexity—this study goes beyond

previous research that largely emphasized the positive outcomes of Green HRM without thoroughly exploring implementation barriers. These insights offer a valuable foundation for future research into strategies for overcoming such challenges.

Overall, this study broadens the boundaries of knowledge on Green HRM and performance management by providing a comprehensive conceptual framework for understanding how their integration can create sustainable competitive advantage within the green economy context in Asia.

6. Conclusion

This study examined the integration of Green HRM practices with performance management systems and their impact on sustainable competitive advantage in Asian hotels adopting a green economy approach. Using a mixed-methods design that integrated data from 400 managers across 80 hotels and in-depth interviews with 25 senior managers, the study produced several key findings.

The results reveal significant variations in the implementation of Green HRM practices, with Green Recruitment and Selection (72.4%) and Green Training and Development (68.7%) being more widely implemented compared to Green Performance Appraisal (58.3%) and Green Compensation and Rewards (43.5%). Integration of Green HRM with performance management systems showed a positive and significant correlation with sustainable competitive advantage ($\beta = 0.428$), with only 24.7% of hotels demonstrating high integration levels, achieving the highest levels of competitive advantage (average score of 4.28).

Four main mechanisms were found to link integration with sustainable competitive advantage: development of unique organizational environmental capabilities, enhancement of operational efficiency, environmental service differentiation, and strengthening of organizational reputation. The study also identified five integration mechanisms: strategic alignment, structural integration, process integration, information system integration, and cultural integration.

The effectiveness of integration was significantly moderated by green organizational culture ($\beta = 0.412$), green transformational leadership ($\beta = 0.378$), and environmental regulatory pressure ($\beta = 0.296$). These findings support the research objectives by providing a comprehensive understanding of how Asian hotels can achieve sustainable competitive advantage through the integration of Green HRM practices with performance management systems.

The practical implications of this study include the need for hotels to develop a holistic approach to integrating Green HRM with performance management systems, with special attention to cultivating green organizational culture and transformational leadership.

The study's limitations include its focus on three-star and higher-rated hotels, which may limit the generalizability of the findings to economy-class properties, and its cross-sectional design, which does not allow for strong causal inferences.

Future research is recommended to adopt longitudinal designs to assess the long-term impacts of integration, to extend analyses to other hospitality segments, and to explore the role of technology in facilitating integration.

Kontribusi Penulis: Paragraf pendek yang menjelaskan kontribusi masing-masing penulis harus disertakan untuk artikel penelitian dengan beberapa penulis (**wajib untuk lebih dari 1 penulis**). Pernyataan berikut harus digunakan “Konseptualisasi: XX dan YY; Metodologi: XX; Perangkat Lunak: XX; Validasi: XX, YY dan ZZ; Analisis formal: XX; Investigasi: XX; Sumber daya: XX; Kurasi data: XX; Penulisan—persiapan draf asli: XX; Penulisan—peninjauan dan penyuntingan: XX; Visualisasi: XX; Supervisi: XX; Administrasi proyek: XX; Akuisisi pendanaan: YY”

Pendanaan: Harap tambahkan: “Penelitian ini tidak menerima pendanaan eksternal” atau “Penelitian ini didanai oleh NAMA PENDANA, nomor hibah XXX”. Periksa dengan saksama apakah rincian yang diberikan akurat dan gunakan ejaan standar nama lembaga pendanaan. Kesalahan apa pun dapat memengaruhi pendanaan Anda di masa mendatang (**wajib**).

Pernyataan Ketersediaan Data: Kami mendorong semua penulis artikel yang diterbitkan dalam jurnal FAITH untuk membagikan data penelitian mereka. Bagian ini memberikan perincian mengenai tempat data pendukung hasil yang dilaporkan dapat ditemukan, termasuk tautan ke kumpulan data yang diarsipkan secara publik yang dianalisis atau dibuat selama penelitian. Jika tidak ada data baru yang dibuat atau data tidak tersedia karena batasan privasi atau etika, pernyataan tetap diperlukan.

Ucapan Terima Kasih: Di bagian ini, Anda dapat memberikan ucapan terima kasih atas dukungan yang diberikan yang tidak tercakup dalam bagian kontribusi penulis atau pendanaan. Ini dapat mencakup dukungan administratif dan teknis atau sumbangan dalam bentuk barang (misalnya, bahan yang digunakan untuk eksperimen). Selain itu, pernyataan transparansi penggunaan perangkat AI telah disertakan di bagian Ucapan Terima Kasih, jika berlaku.

Konflik Kepentingan: Nyatakan konflik kepentingan atau nyatakan (**wajib**), “Penulis menyatakan tidak ada konflik kepentingan.” Penulis harus mengidentifikasi dan menyatakan keadaan atau kepentingan pribadi apa pun yang dapat dianggap memengaruhi representasi atau interpretasi hasil penelitian yang dilaporkan secara tidak pantas. Peran apa pun dari penyandang dana dalam desain studi; dalam pengumpulan, analisis, atau interpretasi data; dalam penulisan naskah; atau dalam keputusan untuk menerbitkan hasil harus dinyatakan di bagian ini. Jika tidak ada peran, harap nyatakan, “Pendana tidak memiliki peran dalam desain studi; dalam pengumpulan, analisis, atau interpretasi data; dalam penulisan naskah; atau dalam keputusan untuk menerbitkan hasil”.

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