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Barriers in adopting green human resource management under uncertainty: the case of Indonesia banking industry

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Abstract

Purpose – This study investigates the barriers to adopting green human resource management (GHRM) under uncertain conditions by integrating the resource-based view (RBV) and stakeholder theory.

Design/methodology/approach – A board of experts, which consisted of 28 practitioners and two academics, was invited to participate in the research. The fuzzy Delphi and fuzzy decision-making trials and evaluation laboratory were utilized to achieve the study's objectives.

Findings – The findings indicate that barriers encompass 14 criteria and five attributes. Among the 14 criteria, the banking industry's lack of green culture, lack of trust in green benefits, employee's capacity to change, lack of support from top management and absence of a comprehensive plan to implement GHRM are significant barriers. The attributes are management, human resources, organizational, regulatory and customer barriers.

Practical implications – Implementing GHRM in Indonesian banking necessitates practical policies and gradual adaptation strategies. Companies should establish standard operating procedures, reward systems and periodic habit changes to embed green practices effectively.

Originality/value – This study is among the first to employ stakeholder theory and the RBV in examining the barriers to green human resources adoption in the banking industry.

Keywords Green human resources management, Resource-based view, Stakeholder theory, Banking, Fuzzy decision-making trial and evaluation laboratory

Paper type Research paper

Introduction

Research examining sustainability has been a prominent focus in developed and developing nations (Laskar and Gopal Maji, 2018; Wang *et al.*, 2021). However, most prior studies have

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focused on sustainability within industries such as manufacturing. There remains a notable absence of empirical investigations within the financial and banking sector. Chang *et al.* (2019) argued that this lack of research can be attributed to the perception that the banking industry has a limited detrimental impact on the environment or potentially due to the industry's distinct system. However, Kumar and Prakash (2019) concluded that sustainable development in the banking sector is crucial, positioning it as a pivotal force for overall sustainable progress. Contrary to initial assumptions that the banking sector did not significantly harm the environment, recent research highlights that banks substantially contribute to global climate impact, showcasing direct and indirect environmental repercussions (Bukhari *et al.*, 2020; Nwobu *et al.*, 2017).

Transitioning from conventional human resource management (HRM) to green human resource management (GHRM) is critical for promoting sustainable development in the banking sector (Raut *et al.*, 2020). Nanduri (2016) highlights the banking industry's key role in fostering sustainability through green banking practices, positioning it to drive the green revolution. This enables the industry to support environmentally friendly initiatives like green loans, bonds, solar panels, and renewable energy projects, contributing to a sustainable environment (Miah *et al.*, 2021). Therefore, GHRM is essential for maintaining company performance and implementing green strategies effectively (Alnaimi and Rjoub, 2021).

Adopting GHRM offers significant advantages and aligns with environmentally oriented organizational goals (Bombiak, 2020). However, its successful integration requires appropriate resource allocation (Kim *et al.*, 2019). According to the resource-based view (RBV), a company's competitive advantage relies on valuable, rare, inimitable, and non-substitutable resources (Singh *et al.*, 2021). Securing these resources is crucial for implementing GHRM effectively across the organization (Renwick *et al.*, 2016). However, relying solely on a company's resources is insufficient; additional catalysts are necessary.

Shahzad *et al.* (2020) emphasized that stakeholder pressure plays a pivotal role in this transition process. Stakeholders are integral in comprehending a company's needs and intricacies when implementing GHRM practices (Guerci *et al.*, 2016). The pressure exerted by stakeholders forces companies to realize their environmentally conscious objectives by utilizing their available resources (Yu and Ramanathan, 2015). This is particularly crucial as companies may not be naturally inclined to make environmentally oriented adjustments without stakeholder demands, potentially overusing their resources (Khan *et al.*, 2022). Hence, stakeholders are instrumental in prompting companies to minimize negative impacts and maximize positive contributions within every facet of their operations.

Due to the complex banking industry system, this study intends to obtain the causal interrelationships among the attributes in the GHRM from the RBV and stakeholder theory. However, these attributes are classified as qualitative data, which involve uncertainty in validating and evaluating the measurement. The study applies a hybrid method of the fuzzy Delphi method (FDM) and fuzzy decision-making trial and evaluation laboratory (FDEMATEL) to validate and generate the cause-and-effect interrelationships among attributes and to structure them into a system framework design (Bui *et al.*, 2020). In particular, the FDM aims to validate the structural attributes of the proposed measures. The FDEMATEL distinguishes the cause-and-effect interrelationships among attributes and identifies the attributes to obtain better performance. The research questions are as follows:

(1) What are the valid barriers to GHRM implementation?

(2) What are the causal interrelationships among barriers in qualitative information?

(3) What attributes can serve as practical guidelines to provide a better transition from traditional HRM to GHRM?

This study contributes to GHRM research and practice. First, it explores the attributes of GHRM and their interrelationships, contributing to the literature and highlighting the primary barriers to adapting GHRM. Second, it provides guidelines for complex situations in practice, bringing enormous benefits for banking firms, managers, and decision-makers who want to establish more accurate and precise GHRM strategies.

Literature review

Green human resources management (GHRM)

GHRM is defined as an integration of HRM practices with environmental management objectives (Garrison, 2022; Renwick *et al.*, 2016). It encompasses HRM practices aligned with environmental goals, constituting the HRM dimension of environmental management. Implementing the GHRM concept becomes imperative for organizations striving to attain environmental objectives, especially for establishing long-term sustainable HRM practices (Bombiak, 2020). Nevertheless, the creation and execution of GHRM practices present a persistent challenge for companies across various nations, especially those in developing regions. Tweneboa Kodua *et al.* (2022) concluded that factors related to resources, such as financial constraints and regulatory frameworks, pose significant barriers that hinder the successful adoption and implementation of GHRM. These limitations inhibit companies from effectively transitioning towards GHRM.

The resource-based view in GHRM

Barney (1991) emphasized the ascendancy of the RBV theory within the strategic management domain, focusing on competitive advantage and organizational performance derived from a set of resources constituting a company's core competencies. The RBV posits that specific resource categories must possess value, rarity, imperfect imitability, and non-substitutability attributes to attain strategic competitive advantage and enhance organizational performance (Haldorai *et al.*, 2022). Moreover, the RBV categorizes strategic resources into three primary classifications: physical, human, and organizational (Iswan and Kihara, 2022).

In the context of GHRM, the RBV suggests that successfully adopting green practices relies on the firm's ability to leverage its unique resources, such as skilled human capital and advanced technological capabilities (Renwick *et al.*, 2016). For instance, the lack of top management support can be viewed as a failure to mobilize critical managerial resources, thereby hindering the adoption of GHRM (Li *et al.*, 2019). Similarly, economic instability and uncertainties in return on investment reflect the financial barriers within the RBV framework, where insufficient financial resources limit the ability to implement sustainable practices (Govindan and Hasanagic, 2018; Govindan *et al.*, 2014).

Stakeholder theory in GHRM

Guerci *et al.* (2016) emphasized that stakeholder theory has gained significant recognition as a fundamental framework for comprehending the motivations behind firms' adoption of human resource policies. Furthermore, implementing GHRM can enable organizations to effectively address stakeholder demands on environmental concerns and improve their overall environmental performance. Jackson and Seo (2010) posited that a correlation can be observed between HRM practices and stakeholders. The basis of this argument is rooted in stakeholder theory research, which identifies two primary external sources of pressure on GHRM practices. Firstly, customer pressures compel companies to pursue environmental improvements for market-related reasons. Secondly, regulatory pressures direct companies to pursue environmental improvements for institutional reasons.

In the case of GHRM, the theory suggests that organizations are likely to adopt green practices in response to external pressures from stakeholders (Guerci *et al.*, 2016). For example, regulatory pressures can act as a significant barrier when there is a lack of clear guidelines or support from the government, as seen in the Indonesian context (Park and Kim, 2020). Furthermore, the uncertainty surrounding stakeholder expectations, particularly concerning the perceived return on investment in green practices, can deter firms from committing to GHRM initiatives (Shahzad *et al.*, 2020).

Integrating the RBV and stakeholder theory provides a comprehensive framework for understanding the barriers to GHRM adoption. While the RBV focuses on the internal resources required for successful implementation, stakeholder theory highlights the external pressures that drive or hinder the adoption of green practices. This dual framework in the Indonesian banking sector reveals that barriers such as lack of top management support (RBV) and regulatory pressures (stakeholder theory) are interconnected. For instance, without internal solid resources (RBV), banks may struggle to respond effectively to external stakeholder pressures (stakeholder theory), creating a compounded barrier to GHRM adoption.

Proposed attributes

This study examines seven dimensions of barriers in the context of GHRM: management barrier (A1), human resources barrier (A2), organizational barrier (A3), financial barrier (A4), technical and infrastructural barriers (A5), regulatory and industry barriers (A6), and customer barrier (A7).

Management barrier (A1) concerns obstacles in the managerial milieu that impede the development of an organization's comprehension of the economic and environmental prospects associated with conservation (Tweneboa Kodua *et al.*, 2022). The absence of endorsement and excitement from the company to conduct GHRM is a crucial hurdle, which can be attributed to the lack of support from senior management (C1) (Tweneboa Kodua *et al.*, 2022). The lack of a comprehensive plan (C2) gives rise to a state of uncertainty (Fayyazi *et al.*, 2015). This is consistent with the subsequent obstacle, which is the absence of cooperation and dedication from the human resources department (C3) (Jackson and Seo, 2010; Yong *et al.*, 2020). An additional challenge emerges due to insufficient proactive measures, indicating a lack of comprehensive strategies (C4) to address and comply with sustainable development principles effectively (Orji, 2019). The absence of reward systems (C5) suggests that organizations do not have a mechanism to incentivize their employees, particularly regarding engaging in environmentally sustainable practices (Zhu *et al.*, 2012).

Human resource barrier (A2) is related to human resources that combines environmental management and sustainable development to make businesses perform effectively (Al Kerdawy, 2019). Obstacles emerge because of insufficient emphasis on green education and limited awareness of the green ecosystem (C6). Another challenge is the absence of green teams and their inadequate cross-functional integration (C7), which refers to the insufficiency of cross-functional green teams in effectively addressing sustainability concerns inside organizations (Gedam *et al.*, 2021). The absence of appropriate incentives (C8) for employees to participate in environmentally sustainable practices can be ascribed to insufficient policies and procedures on the timely assessment, equitable remuneration, incentives, and prizes to motivate employees (Muduli *et al.*, 2020). The limited ability of employees to adapt (C9) poses a significant obstacle, characterized by a lack of motivation and limited cognitive abilities resulting from uncertainty, skepticism towards information sources, reluctance to change, and cynicism (Jackson and Seo, 2010). In addition, previous studies confirmed that the lack of a comprehensive employee welfare package (C10) impedes productivity and sustainable challenges (Orji, 2019).

Organizational barrier (A3) pertains to internal impediments to an organization, particularly those that impede the exchange of information among staff members and have the potential to result in the financial demise of the organization. A significant obstacle encountered while implementing GHRM is the deficiency in comprehending green policies (C11) (Fayyazi *et al.*, 2015). The lack of environmental knowledge (C12) is due to inadequate organizational resources that possess experience in environmental sustainability management (Hasan *et al.*, 2021). Furthermore, a lack of adequate environmental skills (C13) among employees contributes to the obstacles faced in implementing GHRM. The lack of policies and regulations (C14) prioritizing ecologically sustainable practices hinders the establishment of a green organizational culture (Vahdati and Vahdati, 2018). The progression from conventional human resource practices to the adoption of GHRM is impeded by the intricate nature of GHRM's design and execution (C15). Adopting GHRM requires effective collaboration across departments, which is hindered by a lack of interdepartmental cooperation in communication (C16).

Financial barrier (A4) is a significant obstacle for organizations, impacting their ability to adopt GHRM practices (Govindan *et al.*, 2014; Lawrence *et al.*, 2019). Organizations often prioritize revenue-generating transactions, diminishing their motivation to engage in environmentally sustainable practices (Rademaker *et al.*, 2022). Key challenges include insufficient financial resources (C17) and economic instability (C18), which can severely hinder GHRM implementation, especially during economic decline, ambiguous business cycles, and high inflation rates (Hasan *et al.*, 2021; Mousavi *et al.*, 2020). High transition costs (C19) and inadequate funding for staff training (C20) further deter companies from investing in new sustainable practices (Singh *et al.*, 2020). Moreover, businesses tend to rely on established techniques that guarantee profitability, which reduces their willingness to explore greener alternatives (C21). The financial burden of obtaining environmental certifications (C22) and the uncertainty in return on investment (C23) add to these barriers, making it challenging for organizations to fully commit to GHRM initiatives (Govindan *et al.*, 2014; Mousavi *et al.*, 2020).

The lack of integration between human resources and technology (A5) has a detrimental effect on sustainability (Jabbour and de Sousa Jabbour, 2016). The presence of inefficient technology (C24) hinders the implementation of sustainable operations. Adopting green technology (C25) poses significant complexities and obstacles for firms in comprehending and executing technological applications. Human resource professionals encounter challenges in managing workforce changes, which can result in employees experiencing a deficiency in technical and technological competencies (C26) (Khan *et al.*, 2022). The organization's lack of ability to transition to a different system (C27) due to its inflexibility of current procedures obstructs its capacity to adjust to new systems (Govindan *et al.*, 2014). Translating positive environmental attitudes into action (C28) presents a notable challenge, as individuals who hold positive environmental beliefs often hesitate to put them into practice. Moreover, the persistence of the unwillingness to implement efficient environmental measures can be attributed to a dearth of knowledge in environmental management (C29) (Govindan *et al.*, 2014).

Adopting green solutions in organizational operations might be impeded by regulatory and industry barriers (A6) (Singh *et al.*, 2020). The absence of governmental laws and regulations (C30) makes organizations need to implement sustainable processes due to rigorous governance (Al Asbahi *et al.*, 2020). The implementation of GHRM is hindered by inadequate government support, particularly in infrastructure development (Gardas *et al.*, 2019). The presence of ineffective legal frameworks (C32) gives rise to difficulties because of lenient rules that negatively influence corporate practices that prioritize environmental sustainability (Singh *et al.*, 2020). The absence of industrial support (C33) arises from a dearth of endorsement by industry groups, constraining knowledge-sharing endeavors (Khan *et al.*, 2022).

Customer barrier (A7) refers to the limited understanding among customers regarding environmentally oriented company activities, which in turn affects the possibility of organizations adopting GHRM practices. Consumer skepticism regarding the environmental advantages of green concepts arises from a lack of confidence in the green benefits (C34), ultimately leading to diminished customer demand (C35) (Al Asbahi *et al.*, 2020). The lack of positive client response towards new products suggests that firms may exhibit a decreased inclination towards innovation (Da Silva *et al.*, 2018). Another obstacle that hampers adopting environmentally friendly corporate operations is the prevailing push for reduced pricing (C36).

The proposed attributes are exhibited in Appendix 1.

Method

Industry background

Traditionally seen as having minimal environmental impact, the banking sector is now recognized as a significant contributor to global climate change and environmental degradation (Bukhari *et al.*, 2020). Direct impacts include the substantial carbon footprint from daily operations, such as branch network activities that involve energy-intensive lighting, air conditioning, and infrastructure maintenance, highlighting the need for sustainable practices (Khairunnessa *et al.*, 2021). Beyond direct impacts, banks indirectly contribute to environmental harm through their funding activities. Banks inadvertently promote ecological degradation and biodiversity loss by financing industries involved in deforestation, mining, or high-emission manufacturing (Julia and Kassim, 2020). These indirect impacts have raised concerns, increasing pressure on the banking sector to adopt environmentally friendly practices. In this context, stakeholder support is crucial to guide the industry toward green banking (Rehman *et al.*, 2021).

Data collection procedure

This study employed a two-stage data collection process using expert judgment and fuzzy set theory to analyze barriers to GHRM adoption in the Indonesian banking sector. First, the FDM was used to refine potential barriers identified from the literature through expert validation. In the second stage, FDEMATEL assessed causal relationships among these barriers via pairwise comparisons, which is crucial for constructing the interrelationship matrix. Participants, selected for their over five years of experience and direct involvement in sustainability or HRM, were well-suited to evaluate these barriers. This study was conducted following the ethical guidelines, and it received approval from the relevant ethical review board from Universitas Airlangga, Indonesia, ensuring that all participant involvement adhered to the highest standards of ethical research practice.

This study employed 30 experts with professional and research experience in the Indonesian banking industry, 28 from the banking industry, and two as academics. The average tenure was 17.6 years (Appendix 2).

Fuzzy Delphi method

To answer our first research question related to the valid barriers to GHRM implementation, we employed FDM, which involves refining qualities of lesser significance and validating attributes discovered in the existing literature. $P = (f_{vw}; g_{vw}; h_{vw})$, $v = 1, 2, 3, \ldots, j$; $w = 1, 2, 3, \ldots k$, where P_w is the weight of y presented as $P_w = (f_w; g_w; h_w)$ with $f_w = \min(f_{vw})$, $g_w = (\Pi_1^n g_{vw})1/n$, and $g_w = \max(c_{vw})$. Triangular fuzzy numbers (TFNs) are subsequently employed to convert linguistic evaluations into fuzzy numbers, as exhibited in Table 1.

The convex fusion value is applied as follows:

$$U_v = f_w - \varepsilon(h_w - g_w), P_w = x_w - \varepsilon(b_w - \varepsilon f_w), g = 1, 2, 3, \ldots, m \quad (1)$$

where $\varepsilon = [1, 0]$ represents whether the expert assessment is positive or negative, fuzzy evaluation converts fuzzy data into measured data.

$$R_w = \int (u_w, p_w) = \sigma[u_w + (1 - \sigma) p_w] \quad (2)$$

σ represents the expert's optimistic assessment of the equilibrium state.

Next, the threshold is determined as $S = (\sum_{w=1}^{m} R_w)/w$ as the initial factors. If $R_w \leq S$, the w attribute should be eliminated.

Fuzzy decision-making trial and evaluation laboratory

FDEMATEL was employed to answer our research questions related to the causal interrelationship among barriers and to provide practical guidelines for the industry to implement GHRM. Crisp values are formally defined inside a comprehensive direct relationship matrix and subsequently translated into a visual representation to facilitate the interpretation of the analytic outcomes. The determination of crisp values is achieved by employing linguistic characteristics that span a spectrum from minimal influence (VLI) to significant influence (VHI), as outlined in Table 2.

Fuzzy numbers can be simplified in the following manner:

$$U = \left(\widetilde{ue}^{n}_{1pqy}, \widetilde{ue}^{n}_{2pq}, \widetilde{ue}^{n}_{3pqy}\right) = \left[\frac{(e^{n}_{1pq} - \min e^{n}_{1pq})}{\Delta}, \frac{(e^{n}_{2pq} - \min e^{n}_{2pq})}{\Delta}, \frac{(e^{n}_{3pq} - \min e^{n}_{3pq})}{\Delta}\right] \quad (3)$$

Where $\Delta = \max e^{n}_{3pq} - \min e^{n}_{3pq}$. Normalized values for left (l) and right (r) are calculated using:

Linguistic phrase conversion table for FDM (Performance/ Importance)	Corresponding triangular fuzzy numbers (TFNs)
Extreme	(0.75, 1.0, 1.0)
Demonstrated	(0.5, 0.75, 1.0)
Strong	(0.25, 0.5, 0.75)
Moderate	(0.10, 0.25, 0.5)
Fair	(0, 0.10, 0.25)

Source(s): Table created by authors

Table 1. Triangular fuzzy numbers

Parameter	Linguistic variable	Corresponding triangular fuzzy numbers (TFNs)
VLI	*Very low influence*	(0.0, 0.1, 0.3)
L	*Low influence*	(0.1, 0.3, 0.5)
M	*Moderate influence*	(0.3, 0.5, 0.7)
H	*High influence*	(0.5, 0.7, 0.9)
VHI	*Very high influence*	(0.7, 0.9, 1.0)

Source(s): Table created by authors

Table 2. TFN's linguistic parameter

$$\left(l_{pq}^{z}, r_{pq}^{z}\right) = \left[\frac{ue_{2pq}^{n}}{\left(1 + ue_{2pq}^{n} - qu\right)}, \frac{ue_{3xy}^{n}}{\left(1 + ue_{3pq}^{n} - ue_{2pq}^{n}\right)}\right] \tag{4}$$

Normalized crisp values (cv) were calculated using:

$$cv_{pq}^{n} = \frac{\left[l_{pq}^{n}\left(1 - l_{pq}^{n}\right) + \left(r_{pq}^{n}\right)^{2}\right]}{\left(1 - l_{pq}^{n} + r_{pq}^{n}\right)} \tag{5}$$

The calculation of synthetic crisp values involves utilizing the individual sensitivities of n respondents, which are subsequently aggregated in the following manner:

$$\widetilde{e}_{pq}^{n} = \frac{\left(cv_{pq}^{1} + cv_{pq}^{2} + cv_{pq}^{3} + \ldots + cv_{pq}^{3}\right)}{n} \tag{6}$$

The original $s \times s$ matrix of direct relationships (IM) is obtained in the mutual comparison configuration, where $\widetilde{e}_{pq}^{n}$ shows the level of influence of factors p and q as $IM = \left[\widetilde{e}_{pq}^{n}\right]_{s \times s}$

The following procedure was used to construct the normalized direct relationship matrix (U):

$$U = \tau \otimes IM$$
$$\tau = \frac{1}{\underset{1 \le g \le n}{max}, \sum_{p}^{n} = 1^{\widetilde{e}_{pq}^{n}}} \tag{7}$$

The formula for the interrelationship matrix (W) is as follows:

$$W = U(I - U)^{-1} \tag{8}$$

Where W is $[w_{pq}]_{s \times s}g$, $h = 1, 2, \ldots z$. The driving power value (α) and *dependence power* (β) are calculated by using the sum of rows and columns in *interrelationship matrix*:

$$\alpha = \left[\sum_{p-1}^{s} w_{pq}\right]_{s \times s} = [w_{p}]_{s \times 1} \tag{9}$$

$$\beta = \left[\sum_{q-1}^{s} w_{pq}\right]_{s \times s} = [w_{q}]_{1 \times s} \tag{10}$$

The outcome of the conducted procedure yields a cause-and-effect diagram, whereby the factors are assigned locations based on derivation $[(\alpha + \beta), (\alpha - \beta)]$, which generates horizontal and vertical axes. The x-coordinate $(\alpha + \beta)$ indicates the significance of these components.

Results

Fuzzy Delphi method (FDM)

Based on linguistic parameters, the defuzzification threshold value for this aspect is 1.887. Similarly, the defuzzification threshold value for the criteria is 1.762. The threshold value determines the acceptance or rejection of various elements and criteria.

Fuzzy decision-making trial and evaluation laboratory (FDEMATEL)

The assessment process involves utilizing linguistic elements, necessitating its transformation and reorganization into a matrix that establishes direct relationships. The comprehensive procedure subsequently generates a complete interdependence matrix (Table 3).

The interrelationship matrix (Table 4) illustrates the causal connections among the various components within the given aspect. Values ranging from 5.367 to 5.496 indicate a linkage that can be classified as weak. In contrast, values falling within the range of 5.496–5.667 suggest a linkage of medium strength. Lastly, values ranging from 5.667 to 5.673 show a strong linkage. Based on the data analysis (Table 5), the total interrelationship matrix shows the causal links among the components within these criteria.

Figure 1 illustrates a cause-and-effect relationship diagram that represents aspects related to $(\alpha + \beta)$ and $(\alpha - \beta)$. The interconnection between various elements demonstrates the significant impact of the human resources barrier (A2) on the management barriers (A1). The cause-and-effect aspect diagram reveals four distinct aspects that warrant careful consideration: management barrier (A1), human resources barrier (A2), organizational barrier (A3), and regulatory and industry barriers (A4).

The cause-and-effect interaction between the criteria is elucidated in Table 6. The primary determinant is identified as the criterion with the highest $(\alpha + \beta)$ value, surpassing the mean value of 12.758. Conversely, if the outcome of $(\alpha - \beta)$ yields a negative value, this criterion is classified as an effect.

Figure 2 illustrates the presence of seven causal factors, namely: lack of support from top management (C1), absence of a comprehensive plan for the implementation of GHRM (C2), employee's capacity to adapt to change (C6), absence of a green culture (C9), lack of government policies and regulations (C10), lack of trust in green benefits (C12), and pressure for lower prices (C14).

In summary, our findings address the research questions by identifying and quantitatively prioritizing the barriers by applying FDM and FDEMATEL. Specifically, lack of top management support and absence of a comprehensive plan were identified as the most critical, indicating their significant impact on adopting GHRM practices. These barriers were quantitatively prioritized based on their influence and interrelations, aligning with the study's objective to identify the most pressing challenges faced by the banking sector. In addition, this study revealed that *lack of green culture* (C9), *lack of trust in green benefits* (C12), *employee's capacity to change* (C6), *lack of support from top management* (C1), and *absence of a comprehensive plan to implement GHRM* (C2) as the significant barriers for the banking industry to implement GHRM.

These findings underscore the need for targeted interventions to strengthen leadership and strategic planning. By prioritizing these barriers and understanding their relationships, this study provides a roadmap for overcoming the core challenges to GHRM adoption. It lays the groundwork for further discussion on implementing sustainable practices. The detailed implications will be discussed in the practical implications section.

Table 3. Total interrelationship matrix among aspects

	A1	A2	A3	A4	A5
A1	0.000	5.667	0.000	5.465	5.367
A2	5.673	0.000	5.372	5.541	5.446
A3	0.000	5.378	0.000	0.000	0.000
A4	5.484	5.564	0.000	0.000	0.000
A5	0.000	0.000	0.000	0.000	0.000

Source(s): Table created by authors

Table 4.
Total interrelationship matrix among criteria

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14
C1	0.478	0.496	0.480	0.478	0.457	0.464	0.477	0.480	0.454	0.461	0.446	0.460	0.553	0.454
C2	0.469	0.523	0.497	0.494	0.474	0.481	0.480	0.495	0.466	0.457	0.456	0.486	0.559	0.455
C3	0.417	0.452	0.456	0.425	0.414	0.421	0.408	0.434	0.412	0.407	0.405	0.422	0.509	0.405
C4	0.406	0.440	0.425	0.441	0.398	0.402	0.407	0.412	0.406	0.394	0.397	0.407	0.483	0.400
C5	0.391	0.418	0.407	0.390	0.409	0.391	0.377	0.402	0.382	0.373	0.370	0.402	0.446	0.378
C6	0.476	0.510	0.493	0.469	0.470	0.488	0.465	0.491	0.467	0.459	0.458	0.468	0.545	0.449
C7	0.371	0.413	0.399	0.377	0.378	0.394	0.418	0.391	0.381	0.378	0.372	0.396	0.461	0.375
C8	0.396	0.408	0.404	0.404	0.386	0.404	0.407	0.437	0.396	0.384	0.383	0.404	0.466	0.382
C9	0.521	0.557	0.542	0.533	0.511	0.524	0.521	0.524	0.521	0.506	0.500	0.525	0.626	0.503
C10	0.469	0.507	0.489	0.481	0.460	0.469	0.468	0.476	0.452	0.478	0.457	0.474	0.571	0.461
C11	0.399	0.420	0.424	0.414	0.403	0.399	0.406	0.415	0.397	0.393	0.420	0.420	0.486	0.404
C12	0.472	0.510	0.497	0.488	0.472	0.478	0.488	0.494	0.472	0.469	0.461	0.493	0.568	0.457
C13	0.508	0.542	0.523	0.509	0.497	0.512	0.514	0.530	0.498	0.499	0.485	0.503	0.672	0.490
C14	0.467	0.497	0.488	0.478	0.459	0.473	0.470	0.481	0.454	0.451	0.444	0.462	0.545	0.459

Source(s): Table created by authors

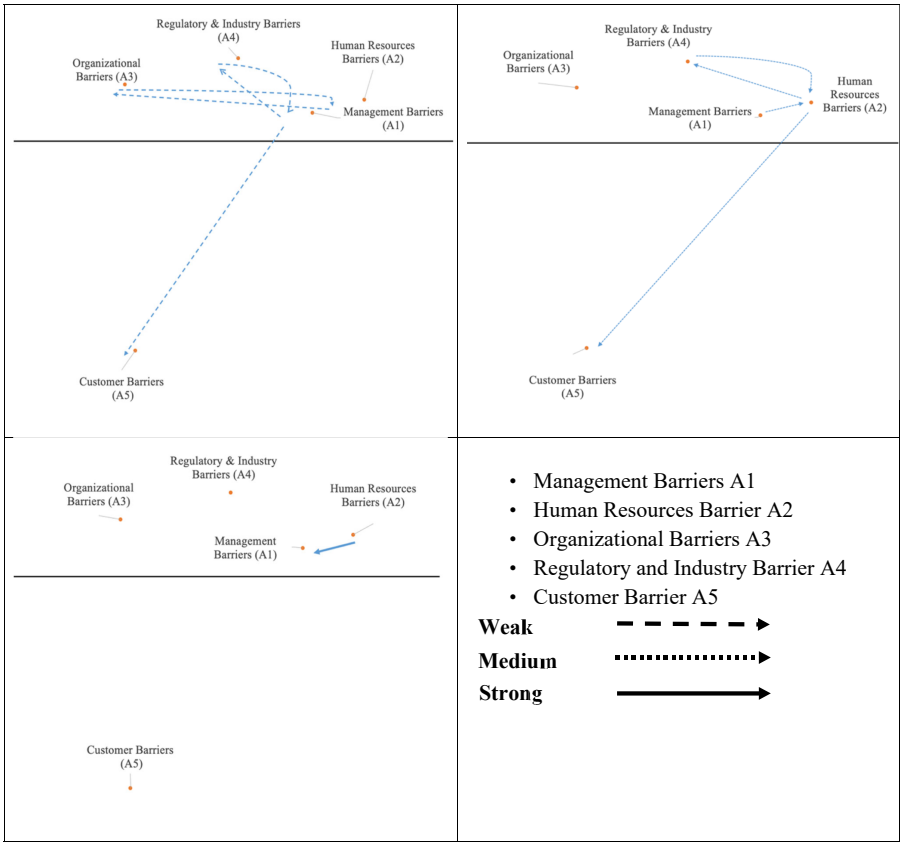
Discussion

Managerial influence plays a vital role in the banking sector by facilitating the planning and management of various resources. Our finding corroborates previous studies that state that resources encompass financials, human resources, and other infrastructure to implement environmentally oriented human resource management methods (Li *et al.*, 2019; Rehman *et al.*, 2021). It has been recognized as a critical success factor for implementing GHRM across

	α	β	$\alpha + \beta$	$\alpha - \beta$
A1	27.424	27.363	54.788	0.061
A2	27.847	27.758	55.605	0.089
A3	25.982	25.859	51.841	0.122
A4	26.900	26.720	53.620	0.180
A5	25.774	26.227	52.001	(0.452)

Source(s): Table created by authors

Table 5. Cause-and-effect interrelationship among aspect



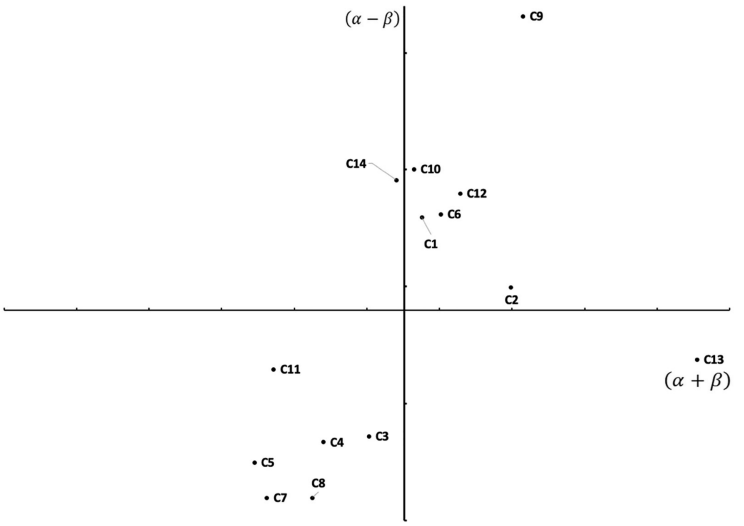
Source(s): Figure created by authors

Figure 1. Cause-and-effect for aspect

	α	β	$\alpha + \beta$	$\alpha - \beta$
C1	6.638	6.240	12.877	0.398
C2	6.793	6.695	13.488	0.098
C3	5.986	6.525	12.512	(0.539)
C4	5.818	6.382	12.200	(0.564)
C5	5.537	6.187	11.724	(0.650)
C6	6.709	6.300	13.009	0.410
C7	5.504	6.307	11.811	(0.803)
C8	5.661	6.463	12.124	(0.801)
C9	7.415	6.159	13.575	1.256
C10	6.713	6.110	12.823	0.603
C11	5.802	6.055	11.857	(0.252)
C12	6.819	6.322	13.141	0.498
C13	7.282	7.491	14.774	(0.209)
C14	6.629	6.073	12.702	0.556
MAX			14.774	1.256
MIN			11.724	(0.803)
AVERAGE			*12.758*	0.000

Source(s): Table created by authors

Table 6.
Cause-and-effect interrelationship among criteria



Source(s): Figure created by authors

Figure 2.
Diagram cause-and-effect for criteria

different sectors of organizations. The significance of managerial systems in the banking sector lies in their inherent value, distinctiveness, and irreplaceability. These systems play a crucial role in shaping strategic decision-making processes within banks and ultimately influence their competitive capacities. Nevertheless, the lack of capacity to ascertain the capabilities of resources poses a significant obstacle to the managerial system of a corporation. The absence of an integrated managerial system presents a substantial risk of failure that can significantly affect the performance of GHRM (Rajput, 2013; Suresh and Bhavna, 2015).

The barrier from human resources is identified as a second critical element for the banking industry in implementing GHRM. This finding supports a previous study that found the significance of human resources lies in their ability to form the distinctive identity of any organization and serve as the most dependable means of achieving strategic competitiveness (Al Kerdawy, 2019). Failure to do so poses significant challenges to gaining competitive advantages (Haldorai *et al.*, 2022). The workplace culture is influenced by the various habits exhibited by employees, which can either assist or impede the achievement of the company's goals in the field of GHRM. These aspects emphasize the significance of human resources as a crucial determinant of success in GHRM. The selection procedures for the workforce and the communication channels established between employees and management are essential factors in obtaining employee endorsement for sustainable development projects.

Organizational barrier is related to the information system that results from a company's routines coordinating among employees, making it a critical factor in determining an organization's success in achieving its goals (Iswan and Kihara, 2022). This coordination pertains to the relationships among employees, work units, and departments collaborating to fulfill their respective functions. Cultural resistance within Indonesian organizations, characterized by deep-rooted hierarchical structures and traditional work norms, poses a significant challenge to adopting GHRM practices. Unlike Western contexts, where flatter organizational structures may facilitate change, the Indonesian banking sector's hierarchical culture can stifle innovation and hinder the adoption of sustainable practices. Barriers to inter-departmental coordination and lack of communication will impact the organization's performance in effectively utilizing internal resources and influencing a workplace culture unsupportive of change (Iswan and Kihara, 2022). Insufficiently trained employees on environmental issues prompt organizations to reconsider implementing GHRM practices (Orji, 2019).

Consistent with stakeholder theory, regulators are crucial stakeholders in the banking industry. Regulations created by the government or banking associations form legitimate rules for organizations and individuals to transition towards a banking system that supports the environment by adopting green solutions into corporate business processes (Orji, 2019; Singh *et al.*, 2021). Previous research found that the lack of government involvement in formulating environmentally friendly policy and regulatory framework guidelines significantly hinders the adoption and implementation of sustainable practices (Park and Kim, 2020). However, many banks still provide funding to factories with ecologically damaging waste. The lack of a clear punishment mechanism in Indonesia leads the banking industry to prioritize business risks over legal risks.

Moreover, Indonesia's evolving regulatory environment presents another unique barrier. The lack of clear and consistent regulations regarding environmental practices creates uncertainties that can impede the effective implementation of GHRM. This challenge is particularly pronounced in Indonesia, where the regulatory framework is still in development, leading to inconsistencies in the enforcement and interpretation of green regulations.

Theoretical implications

This study contributes to the RBV and stakeholder theory by highlighting the crucial role of managerial resources, human capital, and regulatory pressures in adopting GHRM in the Indonesian banking sector. It shows that lack of top management support and an integrated managerial system are key barriers, reinforcing the RBV idea that strategic resources like leadership are essential for sustainability. The study also underscores the importance of human resources in shaping organizational culture, with employee engagement being vital to overcoming cultural resistance to GHRM, particularly in hierarchical cultures like Indonesia.

Additionally, the study illustrates how Indonesia's evolving and inconsistent regulatory environment presents unique challenges to GHRM, contributing to stakeholder theory. Regulatory pressures and unclear guidelines create significant obstacles, highlighting the need for a collaborative approach between organizations and regulators. This finding emphasizes the importance of adapting GHRM strategies to emerging markets' specific cultural and regulatory contexts, offering a more nuanced understanding of these theories within the Indonesian banking sector.

Practical implications

The cultivation of a green organizational culture demands the introduction of practical policies aimed at shaping daily operations. Initiatives, such as reducing paper usage and implementing energy-saving measures, are pivotal in fostering a sustainable ethos. Strong support from the company can begin with the formulation of practical policies, such as standard operating procedures regulating paper usage reduction, rules maximizing working hours, and avoiding overtime for energy conservation. The reward and punishment system has proven effective as a means of enforcement. Changing habits must also be conducted periodically and gradually to minimize employee resistance that may hinder the company's business and operational processes.

The study identified building consumer trust as a critical pillar in implementing GHRM. To address these issues, banks should build trust with local communities by transparently communicating their environmental efforts and how they contribute to broader societal goals. This can be achieved through community outreach programs, where banks actively involve local stakeholders in green projects, such as funding renewable energy initiatives or supporting local environmental education. By aligning GHRM efforts with the values and needs of the local communities, banks can enhance their reputation and foster customer loyalty. Furthermore, educating customers about the environmental benefits of their services can be done through various means, such as marketing and educational materials. The education provided will enhance customer understanding, positively influence their choices, and increase the likelihood of supporting the banking industry in implementing GHRM.

A comprehensive plan for GHRM implementation is needed in the Indonesian context, where there is often a reliance on informal practices and a resistance to formalized procedures. Banks should develop detailed, culturally aligned GHRM strategies considering the local workforce's values and work culture. For example, incorporating principles of mutual collaboration into team-based sustainability initiatives can help to foster a collective commitment to green practices. These strategies should include clear timelines, resource allocations, and accountability structures to ensure effective implementation. This multifaceted approach minimizes resistance and facilitates a seamless transition toward a more sustainable working environment.

Lastly, ensuring unwavering top management support is foundational to the success of GHRM endeavors. This necessitates securing initial commitment and sustaining a comprehensive involvement of top management throughout the implementation process. Articulating a clear organizational vision that seamlessly integrates GHRM into the broader business strategy is paramount. In the Indonesian banking sector, where hierarchical structures are deeply entrenched, gaining the commitment of top management is crucial for successfully adopting GHRM practices. Banks should focus on engaging senior leaders by demonstrating the long-term financial and reputational benefits of GHRM. This can be achieved through targeted workshops and seminars highlighting successful case studies from Indonesia and other similar emerging markets. Additionally, integrating GHRM goals into the personal performance metrics of top executives could ensure that sustainability becomes a priority at the highest levels of decision-making.

Conclusion and limitations

This study offers theoretical and practical insights for banking sectors to enhance their effectiveness and efficiency, ultimately gaining a competitive edge in pursuing long-term goals. The conceptual foundation of GHRM through the RBV and stakeholder theory comprises five facets and 14 criteria that enhance the existing body of knowledge and ascertain the attainment of firm performance. Banking companies must recognize the significance of green culture when adopting GHRM. Additionally, companies should enhance employees' capacity to change to minimize resistance and facilitate the shift toward a more sustainable working environment.

There are some limitations to this study. First, there is a compelling need to delve deeper into the nuanced dynamics of GHRM implementation in the banking sector. Empirical studies assessing the impact of GHRM practices on environmental sustainability, employee attitudes, and overall organizational performance can provide practical insights for scholars and industry practitioners. Our study primarily focuses on the integration of the RBV and stakeholder theory. It does not extensively explore the intersection of GHRM with other relevant areas, such as corporate social responsibility, environmental management, and innovation. Future research could build on this work by investigating how GHRM can be integrated with these areas to create a more comprehensive framework for sustainability in organizations.

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Appendix 1

Theory	Aspect	Criteria	
Resource-based view	A1 Management barrier	C1	Lack of support from top management
		C2	Absence of a comprehensive plan to implement GHRM
		C3	Lack of corporation and commitment from HR
		C4	Inadequate proactive plans
		C5	Lack of reward systems
	A2 Human resource barrier	C6	Lack of focus towards the environmental/green training and obligations/awareness
		C7	Lack of green teams and their cross-functional integration
		C8	Lack of policies and practices for recruitment and selection, performance, appraisal
		C9	Employee's capacity to change
		C10	Lack of employee welfare package
	A3 Organizational barrier	C11	The Lack of understanding of green policies
		C12	Lack of environmental management (EM) knowledge
		C13	Insufficient environmental competencies
		C14	Lack of green culture
		C15	Complexity of design and implementation of GHRM
		C16	Lack of Inter-departmental co-operation in communication
	A4 Financial barrier	C17	Lack of financial resources
		C18	Economic Instability
		C19	Cost of switching to new system
		C20	Lack of funds for training
		C21	Low level of profit and market demand level
		C22	High cost of obtaining environmental certifications
		C23	Return on investment uncertainty
	A5 Technical and infrastructural barriers	C24	Inefficient technology
		C25	Complexity and difficulty of adoption of green technology
		C26	Lack of technical and technological capacity
		C27	Current practice lacks flexibility to switch over to a new system
		C28	Difficulty in transforming positive environmental attitudes into action
		C29	Lack of expertise in environmental management
Stakeholder theory	A6 Regulatory and industry barriers	C30	Lack of government policies and regulations
		C31	Lack of infrastructure
		C32	Inefficient legal framework
		C33	Lack of industrial support
	A7 Customer barrier	C34	Lack of trust in green benefits
		C35	Lack of Customer Demand
		C36	Pressure for lower price

Source(s): Authors' own creation

Table A1.
Proposed attributes

Appendix 2

Table A2.
List of Experts

No	Job position	Level of education	Years of expertise	Organization type
1	Branch Manager	Master	12 years	Practices
2	Branch Manager	Master	12 years	Practices
3	Branch Manager	Master	13 years	Practices
4	Assistant Vice President	Master	11 years	Practices
5	Branch Manager	Master	22 years	Practices
6	Branch Manager	Master	27 years	Practices
7	Branch Manager	Master	17 years	Practices
8	Branch Manager	Master	19 years	Practices
9	Branch Manager	Bachelor	18 years	Practices
10	Branch Manager	Bachelor	25 years	Practices
11	Branch Manager	Bachelor	18 years	Practices
12	Branch Manager	Master	20 years	Practices
13	Branch Manager	Master	25 years	Practices
14	Branch Manager	Master	13 years	Practices
15	Branch Manager	Bachelor	25 years	Practices
16	Branch Manager	Bachelor	20 years	Practices
17	Branch Manager	Master	17 years	Practices
18	Branch Manager	Master	12 years	Practices
19	HR manager	Bachelor	11 years	Practices
20	HR manager	Master	12 years	Practices
21	HR manager	Bachelor	12 years	Practices
22	HR manager	Bachelor	13 years	Practices
23	Branch Manager	Master	22 years	Practices
24	Branch Manager	Bachelor	15 years	Practices
25	Manager of Credit Management	Bachelor	15 years	Practices
26	Head of Digital Ops	Master	7 years	Practices
27	HR manager	Bachelor	25 years	Practices
28	HR manager	Master	7 years	Practices
29	Professor	Doctoral	22 years	Academics
30	Associate Professor	Doctoral	15 years	Academics

Source(s): Authors' own creation

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