Green Human Resource Management and Pro-Environmental Behaviour: Effect of Green Organizational Identity and Green Shared Vision

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Abstract. Connecting pro-environmental behaviour (PEB) with green human resource management (GHRM), especially in hospitals, is becoming a new research interest. Previous research has called for a comprehensive theoretical framework linking the GHRM principles with the attitudes and behaviors underpinning pro-environmental conduct. This study replies to those calls and also provides pioneering inputs as there is a lack of studies in the green HRM field, especially in Vietnam's health sector. Utilizing the Ability-Motivation-Opportunity theory (AMO), this study developed and tested a moderated mediation model that investigated the impact of GHRM on employees' environmental behavior by relating it to the Green Organizational Identity (GOI) mediated effects and the regulatory impact of Green Share Vision (GSV) in business. Data from a sample collected from 80 hospitals with 696 self-administered questionnaires were obtained and employed structural equation modeling with SPSS version 20 and AMOS version 20 software. Results reveal that GHRM positively impacts GOI and PEB, and GOI acts as a mediator between GHRM and PEB, alongside the mediation effect of GSV between these two variables. The results have also found that GHRM moderates PEB when the GSV is moderated within the new model accepted. The study offers several managerial implications as a final contribution to assisting managers and policymakers in developing effective GHRM and PEB policies.

Keywords: Green human resource management, Pro-Environmental Behaviour, Green organizational identity, Green Shared Vision.
1. Introduction

Environmental degradation is currently one of the most pressing issues facing the world, and it poses a significant challenge to society. According to a global risk report titled "Global Risk 2022" by the World Economic Forum, environmental degradation is ranked as one of the top threats to humanity. Most leaders around the world acknowledge that substantial changes are necessary to tackle the environmental issues we face (World Economic Forum, 2023). Historically, the business industry has considered the environment as a free and boundless resource to exploit for meeting their goals (Shaw et al., 2016). However, our actions have led to the destruction of habitats and the extinction of various species, which will have long-lasting effects on future generations. Although companies aim to enhance their environmental performance, their efforts are often gradual, and there can be significant discrepancies between their official environmental policies and their real impact on the environment (Jackson, 2022).

To enhance sustainability performance, it is crucial for organizations to embrace environmentally-friendly practices (Chatibi & Lotfi, 2022; Lozova & Sloka, 2022; Taleb & Pheniqi, 2023). Over the past two decades, global health has experienced a remarkable period of progress, often referred to as a "golden age" (Kruk et al., 2018). Low- and middle-income countries have seen a substantial increase in both domestic health spending and donor funding, providing greater access to critical health determinants like clean water and sanitation, as well as vital healthcare services such as vaccines, antenatal care, and HIV treatment. Health systems need to have a strong foundation in addition to the ability to measure and analyze data in order to be able to learn. Four values should guide high-quality health systems: equity, resilience, and efficiency.

Green Human Resource Management (GHRM) has been proposed as a way to enhance the economic, environmental, and social performance of organizations (Roscoe et al., 2019; Yu et al., 2020; Mao, 2023). Such a practice can significantly increase employee motivation and equip them with the necessary skills, values, and principles to tackle various environmental challenges effectively (Lashari et al., 2022). GHRM not only makes employees more responsible but also fosters an environment that encourages learning, idea dissemination, experimentation, and aligns with a company's environmentally-friendly corporate goals (Anwar et al., 2020; Lashari et al., 2022). GHRM is a human resources management model that promotes environmental actions within organizations through the implementation of a human resources management system (Yong et al., 2020). This system encompasses a range of practices, including recruitment and selection, training, performance evaluation, rewards, organizational culture, green teams, and employee empowerment, all characterized by an "ecological focus" (Jabbour et al., 2019). Pro-environmental behavior includes environmentally responsible activities, and employee behaviors can play a vital role in enhancing the interests of employees regarding positive environmental outcomes. It is essential to build pro-environmental behavior among employees to minimize environmental obstacles by implementing effective HRM strategies and policies (Iftikar et al., 2022). The environmental performance of the organizations has been investigated with the pro-environmental behaviors of employees (Roscoe et al., 2019). Despite previous studies, various issues remain still need to be studied and understood. In this regard, Dumont et al. (2017) suggested that one interesting topic to be addressed is the role of green HRM in enhancing the pro-environmental behavior.

Green HRM practices have gained increased attention among HRM practitioners and researchers in recent years as they aim to promote green behavior among employees (Amrutha & Geetha, 2020). This focus has led to a growing body of research exploring the potential of GHRM in achieving environmental sustainability (Pham et al., 2019; Shafaei et al., 2020). Numerous studies have investigated the impact of GHRM on the environmental sustainability performance of organizations (Dumont et al., 2017; Jabbour et al., 2010; Kim et al., 2016; Pinzone et al., 2016; Saeed et al., 2019). Others have examined its effect on the attitudes and behaviors of both green and non-green employees. Interestingly, despite the importance of employee outcomes, there is a lack of evidence on the potential impact of GHRM on these outcomes. This is surprising given that the Ability-Motivation-Opportunity
theory proposes that HRM can have a three-way interactive effect on the success of an organization (Kim et al., 2015). Additionally, Bos-Nehles et al. (2013) found that ability and motivation, as well as opportunity and ability, significantly impact performance, suggesting that these factors can generate a higher explained variance in performance.

In previous studies, many studies reveal the positive effect of HRM pro-environmental behavior (Taleb & Pheniqi, 2023). There are significant gaps in the current literature that need to be addressed. Literature on GHRM reveals either narrow or unfounded conceptualizations in academic theory (Ansari et al., 2021a; Naz et al., 2023). There needs to be more convergence among GHRM practices identified in theoretical papers. In spite of this growing academic interest in workplace green behavior, the relationship between GHRM and employee green behavior needs to be adequately studied (Rahman & Mansor, 2023). Green HRM practices have limit empirically evaluated for their impact on pro-environmental behavior. Employees’ environmental attitudes and behaviors need to be studied more directly and indirectly using Green HRM practices. It would be helpful to develop a robust theoretical framework so that we can better understand the underlying mechanisms and processes that integrate Green HRM, GOI, GSV, and pro-environmental behavior is lacking in existing studies. Although limited GHRM-related research has been conducted, one example is (Luu, 2020), which only clarifies the relationship between the green practices in tourist organizations and the green recovery performance of their employees without examining the role of PEB. Despite its recent relevance, application of GHRM practices to hospitals is a field that is still relatively unexplored. Given the complexity of this research problem, we propose a mixed-methods approach to yield more accurate findings, as prior empirical studies on GHRM and PEB relationship have not used mixed methods. The objective of this study is to investigate the impact of GHRM on two different indicators of Green organizational identity and Green Shared Vision in order to address the information gaps regarding GHRM's influence on employee Pro-Environmental Behaviour (PEB). We were able to formulate direct and mediation hypotheses by utilizing three theoretical frameworks: Ability-Motivation-Opportunity Theory (AMO) and Signaling Theory (ST) in order to understand the relationship between one and the other.

As well as making an original contribution to literature, this paper also makes a contribution to practice in the following ways:

Firstly, our study makes a theoretical contribution by utilizing the Ability-Motivation-Opportunity theory to investigate how GHRM practices impact on PEB. Secondly, the study also enhances the current literature by investigating the synergistic effects of GHRM practices on PEB, a topic that has not been explored in previous studies but could be crucial to the advancement of PEB.

Thirdly, this paper's empirical contribution is noteworthy as it is one of the few studies that has investigated the relationship between GHRM practices and PEB within the context of a hospital system, which is distinct from prior research. Fourthly, using mixed methods in this study allows us to gain a more comprehensive methodological perspective on the role of GHRM practices in PEB.

This study aims to utilize conditional process analysis based on the PROCESS model (Hayes, 2013) to examine the interactive effects of different moderating conditions in order to provide a more comprehensive understanding of the outcomes. As a final note, this study offers a new perspective on greening the health system in emerging economies, including Vietnam, through this new perspective of this paper.

2. Literature Review

2.1. Green HRM

According to Yong et al. (2020), organizations can adopt various green management practices to reduce their environmental impact and enhance sustainability, one of which is a Green HRM strategy. The importance of human resource management in improving organizational performance amidst environmental and sustainability concerns has been recognized by scholars such as Saifulina &
To investigate the antecedents and consequences of implementing GHRM practices, both qualitative and quantitative methods have been increasingly used in recent years. While early research mainly looked into the prevalence and absence of GHRM practices in organizations, current studies, such as Pinzone et al. (2016), Chaudhary (2019); Guerci et al. (2016); Jerónimo et al. (2020) and Paillé (2022), primarily focus on exploring the different factors that lead to the adoption of GHRM practices and their impacts.

2.2. Pro-Environmental Behaviour
Pro-environmental behavior refers to any voluntary action taken by individuals or organizations to reduce their negative impact on the environment and promote sustainability (Boiral et al., 2015; Mu et al., 2022). PEB can take various forms, including reducing waste, conserving energy and water, using environmentally-friendly products, recycling, and engaging in sustainable transportation practices. The adoption of PEB is critical in mitigating the adverse environmental consequences of human activities, which include climate change, resource depletion, and pollution. Several studies have examined the factors that influence PEB, including personal values, attitudes, social norms, and environmental education (Kim et al., 2019; Robertson & Barling, 2013; Saifulina et al., 2020).

2.3. Green organizational identity
Organizations with a green organizational identity possess values, beliefs, and practices that are deeply rooted in their commitment to environmental sustainability and responsibility, and that are reflected in their beliefs, values, and practices (Whetten, 2006). Chen (2011) propose that green organizational identity as an organization’s sense of self, perception of an organization’s environmental responsibility is indicative of the extent to which it is characterized as having pro-environmental behavior, and which is reflected in the organization’s beliefs, values, and behaviors. Song & Yu (2018) suggest that an organizational green innovation strategy can be particularly beneficial for companies that are grappling with severe environmental pollution resulting from increasing industrialization. Such a strategy can help organizations enhance their business models and transform their management mindset to establish a green identity. This document outlines in general terms the qualities that determine an organization’s green organizational identity. It represents an organization’s commitment to environmental sustainability and responsibility, an attribute that is reflected in its core values, beliefs, and practices, and is viewed positively by its stakeholders as well.

2.4. Green share vision
There is a concept that is commonly referred to as a green share vision, and that concept refers to a shared understanding between the members of an organization or community about the importance of environmental sustainability and their commitment to achieving it. An environmental stewardship plan is an imaginary vision of a sustainable future that guides the group’s activity and decision-making towards a future of environmental stewardship. Bass (1990) define a shared vision as a common understanding of what the organization stands for, where it is going, and how it will get there. As part of this understanding, an organization or community needs to understand the importance of environmental sustainability and how it can contribute to achieving this goal (Chen et al., 2015).

To summarize, a green share vision can be thought of as an organization or community’s understanding of how important it is to achieve environmental sustainability, as shared by the members of that organization or community. As a result, it guides their decision-making and decisions as well as their actions towards a sustainable future and environmental stewardship.

2.5. Ability-Motivation-Opportunities theory
Appelbaum et al. (2000) established the AMO (Ability-Motivation-Opportunities) hypothesis, which explains that the good performance of employees is based on three key components: individual abilities, motivation, and participation opportunities. Employees need particular abilities to execute certain duties,
incentives from leaders and managers to accomplish specific tasks, and opportunities to grow their skills and participate in various decision-making processes and programs to improve performance. It is stated, drawing on an AMO hypothesis, that HR practices are crucial in influencing employees’ attitudes and general performance. Considering and defining human behavior is the AMO model (Rayner & Morgan, 2018).

2.6. Signaling theory
According to Connelly et al. (2011), signaling theory has become a newer theoretical paradigm for explaining how employees view HRM activities. The idea of information asymmetry between two parties is at the heart of signaling theory, which suggests that the sender (the organization) must choose how and when to convey or signal GHRM practices. For instance, Drover et al. (2018) focused on the motivation and focus of receivers and underlined that employees will only overlook HR signals if they are salient to them. According to our predictions, the GOI and GSV will play a key role in raising the salience of signals (Al Halbusi, 2022). The signaling hypothesis emphasizes the significance of socio-cognitive elements in understanding GOI, GSV, and PEB (Guest et al., 2021).

2.7. Hypothesis development

2.7.1. GHRM and Green organizational identity
According to Guerci et al. (2016), the implementation of GHRM practices can elevate the status and performance of organizations, which can foster positive attitudes, feelings, and perceptions among individuals towards the company as a desirable place of employment. As a result, individuals are more likely to seek employment at companies that practice GHRM as noted by Turban and Greening (1997). Earlier studies have confirmed the direct and indirect association between corporate environmental responsibility metrics, pro-environmental recruitment messages, and the appeal of organizations for future recruitment (Bauer & Aiman-Smith, 1996; Muisyo & Qin, 2021). This association is mainly explained through the corporate reputation framework (Behrend et al., 2009) and organizational attractiveness (Gully et al., 2013; Jones et al., 2014). According to Rayner & Morgan (2018), who drew on the AMO theory model that addresses and defines human behavior, HR practices are crucial in influencing employees’ attitudes and general performance. So that, GHRM practices can enhance the organization's reputation as a responsible employer and project an image of an attractive employer with a good reputation.

H1: GHRM positively affects the GOI.

2.7.2. GOI and Pro-Environmental Behaviour
Based on the social identity theory (Tajfel & Turner, 2004) and the attraction-selection-attrition theories (Schneider, 1987), we hypothesize that individuals with strong environmental values will be more attracted to organizations that implement GHRM practices compared to those with weaker environmental values, due to their higher organizational attachment to such firms. According to Ashforth & Mael (1989), based on their social identity theory, GOI has a significant influence in influencing employees to work and carry out activities in accordance with the company’s goals so that the company can achieve its objectives.

Moreover, the GOI will make it a point to preserve the environment and ensure that companies reflect a united identity. Using the example of a company that is already environmentally oriented, then the company will make it a company goal, which then leads to the results of environmental oriented activities and products being produced by the company (Chang & Hung, 2021). Therefore, an individual’s inclination towards a particular company is influenced by their perceived compatibility between their own characteristics and the traits of the organization. In the same vein, it could be contended that individuals who prioritize environmental concerns and hold the belief that companies are accountable for the environment are more prone to be drawn towards firms that implement GHRM.
practices. A person who perceives that a close relationship exists between them and the organization is likely to be more motivated to obtain employment with the organization. In order to answer this question, we hypothesize the following:

H2: GOI positively affects the PEB.

2.7.3. GHRM and Pro-Environmental Behaviour

GHRM practices can enhance the image and prestige of an organization, as well as show social responsibility, if they are implemented in a way that demonstrates social responsibility. The perception of an organization's prestige may strengthen the sense of pride employees have about being a part of the organization, which in turn can have a positive effect on their sense of self-concept and belonging. By making sure that employees are aware of the business' environmental commitment by using GHRM practices, the company may be able to cultivate a green culture in the workplace (Chaudhary, 2020).

Employees may be unaware of the characteristics of their organization as a result of the Theory of Signaling (Spence, 1973), which is why they rely on signals to form an impression of those traits (Carballo-Penela, 2019). A well-implemented GHRM plan could signal a company's commitment to the environment and motivate employees to engage in environmentally-friendly behaviors that assist the company in achieving its environmental goals (Chaudhary, 2020). According to the Attitude Theory (Bagozzi, 1992), affective commitment is an essential mediator for understanding the link between employees' evaluations of management practices and their willingness to engage in positive behaviors. Some evidence suggests that GHRM practices can enhance employees' commitment to the environment, which, in turn, can motivate them to engage in PEB in their workplace (Ansari et al., 2021b).

Researchers found that GHRM practices encourage employees' green commitment and PEB. Green commitment was found to mediate GHRM practices and PEB relationship (Ansari et al., 2021b). The study also revealed that among employees from a variety of organizational sectors According to Ahmad et al. (2021), GHRM can directly influence ethical leadership in the workplace through worker environmental knowledge (Ahmad et al., 2022).

H3: GHRM positively affects PEB.

2.7.4. GOI as mediator

There has been a lack of attention paid in previous research to the mechanisms by which GHRM practices are mediated by their outcomes. This study reveals, in relation to our initial results, that researchers have mainly considered environmental mediators in their research, for example (Luu, 2020; Pinzone et al., 2019), however, it is not uncommon for PEB to be mediated by non-environmental mechanisms, which is not unreasonable considering that PEB is an environmental outcome. The analysis of non-environmental variables may also help to determine whether they can act as a mediator between GHRM practices and the PEB. Employees who are given high GOIs are more likely to develop psychological connections with their organizations, allowing them to become more aware of environmental and sustainability goals. In this way, employees will show more voluntary green behaviors for the organization, which will benefit the organization as a whole. Employees will invest more effort in discretionary behaviors when they identify with their organization, which contributes to the achievement of the organization's sustainability goals. There have been some recent studies Chaudhary, 2019) that have shown that organizational identity mediates the relationship between GHRM and the behavior of employees when it comes to going green.

H4. GOI positively mediates the relationship between GHRM and PEB.

2.7.5. Green share vision as moderator

According to empirical and theoretical evidence, GHRM positively impacts GOI, and conversely, GOI also has a positive influence on PEB. It should be noted, however, that several powerful environmental variables are known to influence both direct and indirect effects. Similarly, Chang et al. (2019) point
out that setting up a shared vision for a business can be a fundamental component to achieving a competitive edge. The fusion of a common vision and a common mission can empower workers to view their tasks in a wider and more contemplative perspective. In the opinion of Colakoglu (2012), shared vision can be defined as the shared vision of the organization's members, as well as the vision for the organization's core values and mission shared by all members of the organization. An organizational manager who has a flexible vision is more likely to achieve sustainability requirements when they have a flexible vision (Senbel, 2015). It is very important to understand that GHRM is able to provide opportunities to its employees that can motivate them to work productively towards achieving the organization's goals. Paarlberg & Perry (2007) suggest that establishing a shared green vision is crucial in creating a roadmap for employees to align with the organization's environmental goals. Thus, having a shared green vision serves as a foundation for defining and shaping a collective vision. In conclusion, we can see from the above factor that the more organizations share the green vision, the greater the impact of green governance on the green identity of organizations.

Using GSV in the context of an organization can be a very effective way to motivating employees to enhance their preparedness to meet and surpass expectations. A shared vision can be advantageous to senior members of a company for several reasons, such as creating a unified plan for future expansion, setting norms and principles, motivating employees to exceed performance targets, and serving as a foundation for devising future strategies. From the viewpoint of eco-friendliness and sustainable development, this paper responds to a call for research that was made by Chen et al. (2015) in their call for research on sustainable development. Organizational managers should create a knowledge-sharing platform that is environmentally friendly for their employees, so that their employees can demonstrate an increased level of environmental protection behavior when developing future policies for the organization, as a result of which the organization will achieve its strategic goals in protecting its environment. Therefore, this research argues that the relationship between green organizational identity and employee environmental behavior can be positively regulated as a result of shared green vision within a company.

**H5.** GSV has a positive moderating effect between GHRM and GOI.

**H6.** GSV has a positive moderating effect between GOI and PEB.

There has been a lot of research on the moderating effect of GSV on GOI and GOI on PEB, which has been explored by several scholars (Yuan & Li, 2023). Previous research has explored the direct and mediating relationships between the variables as well as the moderating role of GSV in these relationships. However, to date, no study has examined the moderated mediation relationship between all four variables in a single model. GHRM, GOI, and PEB can be conceptualized as mediators in a model that incorporates GSV as a moderator in the relationship between GHRM, GOI, and PEB. This approach allows for a comprehensive understanding of the influence of GSV on the relationship between these variables. Given the information presented above, a hypothesis can be formulated as follows:

**H7.** On the relationship between GHRM and PEB, GSV positively moderates the mediating effects of GOI.

The theoretical model of this moderated mediation relationship is depicted in Figure 1.
3. Methodology

Employees from Vietnam’s hospital sector were the target population for this cross-sectional study. It was decided to use the convenience sampling technique to gather responses from internal stakeholders within a hospital, which typically includes several types of personnel, such as medical administrators, doctors, nursing staff, medical technicians, pharmacists, and other staff members. Back-translation was used to translate the questionnaire from English to Vietnamese. Additionally, differences between the Vietnamese and English translations were examined. The translators looked for every distinction. Five experts who work as hospital human resource managers were sent the measurement tool to ensure its content validity. Some small changes were made as a result of their recommendations. In order to assure clarity, a pilot study was carried out, and the questionnaires were distributed to 40 participants to get their input. The questionnaires were the same. It is emphasized in the questionnaire’s introduction section that it was created primarily for academic study, and the information on the questionnaire is completely private.

For a questionnaire with 24 items, 120 was the minimum number of participants needed to do a multivariate analysis, in accordance with the rule of thumb (Hair et al., 2010), therefore the final usable questionnaires were suitable for generalizing the findings.

With the respondents’ response, this study collected 696 complete and valid questionnaires for statistical analysis. Research data were collected, quantitatively analyzed with SPSS version 20 and AMOS version 20 software, and the results were then examined and discussed in depth in the discussion part. Through hierarchical regression, the dependent variable was regressed against each hypothesis' independent variable, including the control variables, in order to look at the direct links (H1-H3). Indirect relationships were evaluated in order to comprehend the mediating effect (H4), moderating impact (H5 and H6), and moderated mediation effect (H7). Multiple PROCESS models (Hayes, 2022) with study and control variables were considered to explore indirect relationships.

3.1. Variable Measurement

A number of scales used in existing research are used to measure the outcomes of this study. On a Likert scale, which is a five-point scale marked with a 1 to 5, 1 to 5 representing the level of agreement between the groups. The assessment scale comprises specific categories, including "strongly disagree," "disagree," "undecided," "agree," and "strongly agree."

The GHRM construct is measured using the items adapted by Dumont et al. (2017).

The GOI construct is measured using the items developed by Chen (2011) and Mittal & Dhar (2016),

![Study theoretical model](image)  
**Fig.1:** Study theoretical model (PROCESS Model 58)
with a total of 6 items.

The GSV construct is measured using the items developed by Chen et al. (2015), with a total of 4 items.

The PEB construct is measured using the items developed by Mónus (2021), with 9 items.

3.2. Sample Description

The official time period for the survey is going to be January 2023 to April 2023. There were a total of 800 questionnaires distributed directly to the volunteer staff members that participate in the daily operations in 80 Vietnam hospitals. After eliminating invalid questionnaires, 696 valid questionnaires were collected, resulting in an effective recovery rate of 87.00%. Table 1 presents the sample descriptive statistics for the questionnaire.

Table 1. Sample characteristics (N = 696).

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Classification</th>
<th>Counts</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Female</td>
<td>438</td>
<td>62.93</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>258</td>
<td>37.07</td>
</tr>
<tr>
<td>Age</td>
<td>&lt; 25</td>
<td>126</td>
<td>18.10</td>
</tr>
<tr>
<td></td>
<td>26–35</td>
<td>350</td>
<td>50.29</td>
</tr>
<tr>
<td></td>
<td>36–45</td>
<td>172</td>
<td>24.71</td>
</tr>
<tr>
<td></td>
<td>46 and above</td>
<td>48</td>
<td>6.90</td>
</tr>
<tr>
<td>Position</td>
<td>Doctors</td>
<td>149</td>
<td>21.41</td>
</tr>
<tr>
<td></td>
<td>Nurses</td>
<td>345</td>
<td>49.57</td>
</tr>
<tr>
<td></td>
<td>Medical technicians</td>
<td>68</td>
<td>9.77</td>
</tr>
<tr>
<td></td>
<td>Pharmacists</td>
<td>35</td>
<td>5.03</td>
</tr>
<tr>
<td></td>
<td>Other staffs</td>
<td>99</td>
<td>14.22</td>
</tr>
<tr>
<td>Edu</td>
<td>High school</td>
<td>34</td>
<td>4.89</td>
</tr>
<tr>
<td></td>
<td>Vocational school</td>
<td>145</td>
<td>20.83</td>
</tr>
<tr>
<td></td>
<td>Bachelor degree</td>
<td>280</td>
<td>40.23</td>
</tr>
<tr>
<td></td>
<td>Master or PhD</td>
<td>237</td>
<td>34.05</td>
</tr>
<tr>
<td>Tenure (year)</td>
<td>&lt; 1</td>
<td>39</td>
<td>5.60</td>
</tr>
<tr>
<td></td>
<td>1–5</td>
<td>226</td>
<td>32.47</td>
</tr>
<tr>
<td></td>
<td>6–10</td>
<td>259</td>
<td>37.21</td>
</tr>
<tr>
<td></td>
<td>&gt; 10</td>
<td>172</td>
<td>24.71</td>
</tr>
</tbody>
</table>

Source: own

4. Findings and Discussion

4.1. Reliability and Validity

The internal consistency of the scales used in this study was assessed using Cronbach’s \( \alpha \) values, which were found to be greater than 0.7, indicating good reliability (see Table 2). Confirmatory factor analysis was conducted using AMOS software, and the results indicate good model fitting: \( \chi^2/df = 1.947 (< 3); \) RMSEA = 0.057 (< 0.080); CFI = 0.943 (> 0.900). The homogeneity, internal consistency, and reliability of each variable is supported by all CR values being greater than 0.8 and exceeding the 0.6 threshold. The convergent validity of the scale is indicated by AVE values greater than 0.5 for each variable, and good discriminant validity is indicated by correlation coefficients between factors being less than AVE.

Table 2. Reliability and validity

<table>
<thead>
<tr>
<th>Variable</th>
<th>Item</th>
<th>Factor Loading</th>
<th>AVE</th>
<th>Cronbach’s ( \alpha )</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHRM</td>
<td>5</td>
<td>1</td>
<td>.573</td>
<td>.885</td>
<td>.814</td>
</tr>
</tbody>
</table>
Before proceeding with further analysis, the measures of sampling adequacy, including KMO and Bartlett’s test, were evaluated. 0.947 is the KMO value for all factors, conforming to the Kaiser criterion for a "meritorious" evaluation (Kaiser, 1974). As a result of significant Bartlett’s tests for all variables in the sample, it can be concluded that the sample is suitable for the analysis of factors, as well as for the evaluation of the validity and reliability of the measures. For this reason, the raw data were used to assess the model and measures' goodness.

4.2. Descriptive Statistics Analysis

Table 3 presents the mean, standard deviation, and correlation coefficients for each variable. The research findings indicate a significant correlation between each variable, which supports the hypotheses.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. GHRM</td>
<td>3.647</td>
<td>.780</td>
<td>1</td>
</tr>
<tr>
<td>2. GOI</td>
<td>3.568</td>
<td>.745</td>
<td>.124**</td>
</tr>
<tr>
<td>3. GSV</td>
<td>3.597</td>
<td>.743</td>
<td>.181**</td>
</tr>
<tr>
<td>4. PEB</td>
<td>3.564</td>
<td>.724</td>
<td>.135*</td>
</tr>
</tbody>
</table>

Note: * p < .05, ** p < .01.

4.3. Hypothesis Testing

In this study, the use of GOI as a control variable helped to partially mitigate its impact on PEB and determine the independent variables' true effect on PEB based on their effect on GOI. To assess the direct relationships (H1 & H3), each hypothesis’s independent variable, along with control variables, was regressed on the dependent variable through hierarchical regression. In order to explore the mediating effect (H4), moderating effect (H5 and H6), and moderated mediation effect (H7), indirect relationships were examined using various PROCESS models (Hayes, 2022) between the study variables and control variables.

4.4. Main Effect Testing

The hierarchical regression analysis revealed that GHRM had a positive and significant impact on GOI ($\beta = 0.489, p = 0.00$). This finding was supported by the ANOVA test ($F = 264.139$) and a significant p-value, providing full support for H1. Furthermore, the regression of GOI on PEB showed a significant and positive relationship ($p = 0.00$) with a $\beta$ value of 0.489. The ANOVA test ($F = 3.74, p = 0.00$) also supported this finding, providing full support for H2. The positive and significant $\beta$ estimate of 0.427 and p-value of 0.00 for GHRM on PEB, along with a significant F-value (144.870), indicated that the results were consistent with H3.

4.5. Mediating Effect Testing

The Sobel test and Baron & Kenny (1986) suggestions have traditionally been used to demonstrate mediation relationships. Nevertheless, recent scholarship has recommended bootstrapping rather than Baron and Kenny's four steps and the Sobel test for mediation (Hayes, 2022). GOI was assessed as a mediating factor in the relationship between EL and BP (Table 4, Model 1, 3, 4) by bootstrapping through PROCESS Model 4. According to PROCESS, zero should not be within the 95% bootstrap confidence interval of the indirect effect to mediate. The indirect effect's confidence interval rejects mediation if zero lies within it.
Based on 5,000 bootstrap resamples, a 95% bias-corrected bootstrap confidence interval was obtained for direct and indirect effects. The results of the study showed that GHRM had a total effect of 0.488 on PEB (CI = 0.145–0.387, p = 0.00). Only 0.427 of the total effect was directly related to GHRM (CI = 0.168–0.223, p = 0.00). Through GOI, GHRM indirectly affected PEB by 0.139. In terms of confidence intervals, we can see that zero is not located between the lower and upper limits of the confidence interval for the indirect effect (LLCI = 0.101 and ULCI = 0.179). According to this, GOI may play a role in serving as a mediator between GHRM and PEB, thereby supporting H4 to the fullest extent possible.

### Table 4. The confirmatory variable analysis

<table>
<thead>
<tr>
<th>Variables:</th>
<th>GOI</th>
<th>PEB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>Model 1</td>
<td>Model 2</td>
</tr>
<tr>
<td>PROCESS model</td>
<td>H4</td>
<td>H5, H7</td>
</tr>
<tr>
<td>GHRM</td>
<td>.489**</td>
<td>.628**</td>
</tr>
<tr>
<td>GSV</td>
<td>.301**</td>
<td>.258**</td>
</tr>
<tr>
<td>GOI</td>
<td>.324**</td>
<td>.324**</td>
</tr>
<tr>
<td>GHRM × GSV</td>
<td>.076*</td>
<td></td>
</tr>
<tr>
<td>GOI × GSV</td>
<td>.043*</td>
<td>.043</td>
</tr>
<tr>
<td>R²</td>
<td>.41</td>
<td>.178**</td>
</tr>
<tr>
<td>ΔR²</td>
<td>.047*</td>
<td>.001*</td>
</tr>
</tbody>
</table>

Note: * p < .05, ** p < .01.

**Source: own**

### 4.6. Moderating Effect Testing

The study employed PROCESS Model 1, as recommended by Hayes (2018), to evaluate whether the relationship between GHRM and GOI was moderated by GSV (H5). To determine a significant moderation effect, both the interaction and conditional effects should be significant, and the confidence interval of zero should be outside. The beta estimate of the interaction term (GHRM×GSV) was significant (β = 0.076, p = 0.00), and the overall moderation model was significant (R² = 0.178, p = 0.00), indicating the significant role of GSV as a moderator. The confidence intervals did not contain zero at all levels of GSV, including low, medium, and high (Table 5). The plot of the moderation result (Figure 2) showed that the moderation was significant both at the dynamic and static levels of GSV. These findings support H5, which posits that GSV mediates the relationship between GHRM and GOI.

![Fig.2: Interaction effect of GHRM with GSV on GOI](image)

In this study, the effect of the interaction between the independent variable GOI and the moderator variable GSV (H6) on the dependent variable PEB was examined. The analysis showed that the interaction term (GSV x GOI) had a positive and significant beta estimate (β = 0.043, p = 0.00) (Table 4, Model 5). Moreover, the overall moderation regression model was significant (R² = 0.23, p = 0.00), and zero did not lie within the lower and upper confidence intervals (LLCI = 0.011 and ULCI = 0.021),
suggesting the significance of GSV at p=0.06. To determine the conditions under which this moderator is significant, a conditional analysis was conducted to explore its effect. As shown in Table 5, zero did not lie between the confidence intervals at the low and medium levels of GSV. However, at the high level of GSV, zero was not within the confidence interval (LLCI = 0.342 and ULCI = 0.492). A visualization of the moderation result is provided in Figure 3. Based on the conditional effect and plot analysis, the study concluded that GSV moderates the relationship between GOI and PEB.

*Fig.3: Interaction effect of GOI with GSV on PEB*

<table>
<thead>
<tr>
<th>Level of moderator</th>
<th>Effect</th>
<th>SE</th>
<th>t</th>
<th>p</th>
<th>LLCI</th>
<th>ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>.359</td>
<td>.051</td>
<td>9.416</td>
<td>.000</td>
<td>.380</td>
<td>.580</td>
</tr>
<tr>
<td>Medium</td>
<td>.423</td>
<td>.039</td>
<td>10.792</td>
<td>.000</td>
<td>.346</td>
<td>.500</td>
</tr>
<tr>
<td>High</td>
<td>.480</td>
<td>.046</td>
<td>7.946</td>
<td>.000</td>
<td>.276</td>
<td>.456</td>
</tr>
</tbody>
</table>

Both Figures 2 and 3 display two non-parallel curves of GSV that slope positively, which is further supported by the regression coefficient findings. The beta estimates of the interaction terms were found to be negative, suggesting that a stronger positive GSV amplifies the positive impact of the independent variables (GHRM or GOI) on PEB. Therefore, these findings indicate that GSV acts as a moderator in the relationships, thus supporting H5 and H6.

### 4.7. Moderated mediation relationship

The study employed the PROCESS Model 7 to examine the moderated mediation relationship. Firstly, the significant effect of GHRM on PEB was established, satisfying the first condition of moderated mediation (supporting H3). Secondly, the study investigated the significance of the interaction between EL and GSV on GOI (H5), which was found to be significant as the confidence interval did not include zero (LLCI = 0.013, ULCI = 0.154, p = 0.00). Thirdly, both the independent variable (GHRM) and mediating variable (GOI) were found to be significant in predicting PEB, supporting the third condition of moderated mediation ($\beta = 0.628$, LLCI = 0.160 and ULCI = 0.186 with p = 0.00 for GHRM; $\beta = 0.324$, LLCI = 0.035 and ULCI = 0.149 with p = 0.00 for GOI). To examine the fourth condition, the study analyzed the conditional indirect effect of GHRM on PEB through GOI at low, medium, and high
levels of GSV, and the results showed significance across all levels of the moderator, as presented in Table 6.

<table>
<thead>
<tr>
<th>Mediator</th>
<th>Level of moderator</th>
<th>Effect</th>
<th>SE</th>
<th>LLCI</th>
<th>ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOI</td>
<td>Low</td>
<td>.156</td>
<td>.023</td>
<td>.111</td>
<td>.204</td>
</tr>
<tr>
<td>GOI</td>
<td>Medium</td>
<td>.137</td>
<td>.019</td>
<td>.101</td>
<td>.177</td>
</tr>
<tr>
<td>GOI</td>
<td>High</td>
<td>.119</td>
<td>.020</td>
<td>.082</td>
<td>.162</td>
</tr>
</tbody>
</table>

Index of moderated mediation

<table>
<thead>
<tr>
<th>Mediator</th>
<th>Effect</th>
<th>SE</th>
<th>LLCI</th>
<th>ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOI</td>
<td>.349</td>
<td>.033</td>
<td>.284</td>
<td>.414</td>
</tr>
<tr>
<td>GOI</td>
<td>.324</td>
<td>.324</td>
<td>.260</td>
<td>.388</td>
</tr>
</tbody>
</table>

In order to test the fourth condition, the study conducted an analysis of the conditional indirect effect of GHRM on PEB through GOI at various levels of GSV, revealing significant results across all levels (low, medium, and high) of the moderator, as displayed in Table 6. The index of moderated mediation was determined to be 0.349, as depicted in Table 6, with zero falling outside of the lower and upper confidence intervals (LLCI = 0.284 and ULCI = 0.414), providing further evidence for the relationship of moderated mediation. These findings suggest that GSV moderates the mediation effect of GOI on the association between GHRM and PEB. Moreover, the positive result for the index of moderated mediation (0.349) indicates that GHRM indirectly affects PEB via GOI, thus supporting H7. Model 58 of PROCESS was also evaluated for moderated mediation, further supporting the positive interaction between GSV and the independent and mediating variables (GHRM) (Table 4, Models 2 and 7). The study found that as GHRM is conditionally indirectly associated with PEB through GOI, PEB is higher at lower GSV effect levels (Table 6). Thus, these results indicate that the mediating effect of GOI between GHRM and PEB is supported.

The general findings of the study supported the proposed framework. H1, H2, and H3 are accepted, so Green HRM positively impacted the GOI, GSV, and PEB. This finding was in line with the findings of Saeed et al. (2019), showing how green HRM played a role in improving the pro-environmental behavior of employees. Hence, H4 is accepted. GOI has been used in the previous study as a mediator between GHRM and PEB development, this model was supported by the general findings of the study. However, considering GOI as a mediator between GHRM and PEB, empirical evidence from this study addresses this association. The present study revealed the moderation of GSV on the relationship between GHRM and PEB. Hence, H5, H6 and H7 is accepted. Opportunities in the organization contain such practices or systems that ultimately lead to pro-environmental behavior (Rayner & Morgan, 2018). These opportunities empower employees to make decisions about environmental objectives within the organizations.

5. Conclusion

Several previous research studies have suggested that a GHRM has the potential to significantly enhance GOI, thereby contributing to the increase in PEB. Though the role of GHRM has become increasingly important in the changing environment (Ahmed et al., 2022), the exact relationship between GHRM and development has remained obscure, despite the fact that GHRM is very important in developing countries. The objective of the research was to establish a theoretical moderated mediation model by integrating variables such as GHRM, GOI, GSV and PEB into the model, and examine their relationship so as to clarify a comprehensive picture in the Vietnam context. According
to the empirical results of this study, GHRM has an immediate, positive impact on both the GOI and PEB. There is some evidence to suggest that GHRM is useful for Vietnamese hospitals, which is in line with some recent research (Luu, 2020; Pham et al., 2019). Additionally, the results of the study confirmed that there is a positive correlation between GOI and PEB in the study. Consistent with other literature works, our study indicates that an increase in GOI also contributes to an increase in PEB. Furthermore, the outcomes of this research are in line with prior studies (Dumont et al., 2016; Leroy et al., 2018) that indicate a positive impact of GHRM on PEB. The results also support the proposed hypothesis that GOI functions as a mediator in the association between GHRM and PEB of Vietnamese hospitals, owing to its mediation effect.

The study's empirical findings demonstrate that GSV has significant moderating effects on both the direct and indirect (mediation) relationships. Interestingly, the level of GSV appears to have a substantial impact on PEB, as shown in the results. Moreover, the research indicates that GOI plays a mediating role in the relationship between GHRM and PEB in Vietnam. Adding GSV to the model strengthened the association between PEB and GSV, contrary to the study's predictions. The study also supports the idea that GSV should be considered when analyzing the effectiveness of leadership. However, there is a possibility that the current GHRM scale may not be universally applicable. This study contributes to the limited research on the relationship between GHRM and PEB in Vietnam and provides insights into the relevance of these concepts in developing nations. Further research is needed to confirm the generalizability of these findings and to establish an improved GHRM scale that considers the diversity of regions. The methodology and interpretation of this study can be useful for analyzing similar complex models. Finally, this study offers theoretical and practical knowledge that supports entrepreneurship and economic development in the nation.

6. Limitations and Future Research Implications

Our paper provides a critical review of the GHRM construct and its relationship to several variables in different countries and regions, providing a foundation for further research into GHRM in multiple countries and regions. Despite its many strengths, there are a number of limitations of this study, and these limitations also provide opportunities for future studies. Future researchers should take into account some limitations of this study. Firstly, the sample was limited to hospital patients in Vietnam, so the generalizability of the results to other cities, sectors, and nations with different socio-cultural and economic contexts may be limited. Therefore, future studies should consider conducting their own research in their specific contexts to gain a better understanding of the results and investigate possible variations. Secondly, all measures were evaluated by either staff or management, which may lead to self-response bias. To address this, future studies could collect data from multiple raters, such as both employees and employers. Thirdly, the current study employed a cross-sectional design, limiting the ability to draw causal inferences. Therefore, future studies could adopt a longitudinal research design to investigate changes in relationships over time. Moreover, incorporating both qualitative and quantitative data could offer a more comprehensive understanding of the relationships examined.

References


