The impact of green human resource management (GHRM) on employee retention: Mediating role of job satisfaction

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ABSTRACT

This study examined how Green Human Resource Management (GHRM) influences job satisfaction and its subsequent impact on employee retention among working adults in Malaysia post-COVID-19. This research observed that employees with environmental awareness who actively contribute to environmental causes tend to find their work more meaningful. However, there is an existing research gap concerning the correlation between GHRM and job satisfaction, as only a limited number of studies have explored the potential impact of GHRM on individual-level outcomes like job satisfaction and retention. Data were collected from 153 employed adults aged between 18 and 60 in Malaysia through an online questionnaire administered via Microsoft Forms to address this gap. The study found that GHRM positively affects job satisfaction, and job satisfaction, in turn, positively influences employee retention among working adults in Malaysia post-COVID-19. Notably, this study found that job satisfaction mediates the association between GHRM and employee retention. This research offers valuable insights for practitioners regarding the direct and indirect connections among GHRM, job satisfaction, and employee retention within the specified context. Additionally, it contributes to the GHRM literature, particularly in the Malaysian context, by advocating for a segmentation approach in hypothesis development and supporting the use of job characteristics theory and Herzberg's Two-Factor Theory when determining the direct and indirect correlation between GHRM, job satisfaction, and employee retention.

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1.0   INTRODUCTION

Environmental challenges, which include climate change, climate-related disasters, biodiversity loss, and sewage discharge, are rising critically due to economic progress and daily human activities. In the sustainability debate, the business sector often takes a prominent role and is frequently identified as a significant contributor to global ecological damage. Therefore, businesses must recognize the various channels of climate change that can manifest in business impacts like employee absenteeism, job satisfaction, and retention rate (Goldstein et al., 2019; Utami et al., 2021; Mayfield et al., 2020; Morrow et al., 1999). Recent studies highlight the need for firms to intensify efforts in addressing environmental issues, with an evolving focus on the human resource factor within organizations. The introduction of Green Human Resource Management (GHRM) reflects a paradigm shift as firms recognize the integral role of human resource functions in sustainable strategies. This emerging concept is gaining traction as a proactive approach to tackling environmental challenges and implementing effective green strategies (Hossain et al., 2022; Ren et al., 2018).

GHRM involves strategies that empower firms to efficiently utilize resources, contributing to environmental sustainability while enhancing employee satisfaction and morale (Al-Hajri, 2020). Despite the growing acknowledgement of GHRM, the study about the relationship between GHRM and job satisfaction is still under investigation. Understanding this link is crucial, as employee experience is a significant step in creating effective GHRM practices within organizations (Shafaei et al., 2020). Moreover, research has shown that GHRM benefits organizations by reducing turnover rates and improving employee retention (Al-Hajri, 2020). However, there needs to be more clarity and more studies exploring the correlation between GHRM practices and turnover intention, with job satisfaction as a potential mediating variable (Bibiana et al., 2023; Jannat et al., 2020; Memon et al., 2020).

In Malaysia, research on GHRM is relatively limited despite the nation witnessing a surge in the green movement. Most literature on Green Human Resource Management (GHRM) has been written from a Western perspective, with Asian perspectives only recently emerging (Suharti & Sugiarto, 2020; Kuan et al., 2022). There is a noticeable lack of research on GHRM in Malaysia, particularly regarding its impact on employee outcomes like job satisfaction among Malaysian working adults. The Malaysian government is actively encouraging firms to be environmentally mindful and play a role in addressing climate issues (Islam et al., 2023). Against this backdrop, the importance of GHRM becomes even more pronounced in fostering a balance between environmental responsibility and business operations. Hence, to fill the research void, this study examines how GHRM influences job satisfaction among Malaysian employed individuals, especially after the pandemic.

Additionally, it aims to explore the link between GHRM and employee retention, with job satisfaction acting as a mediator. Existing studies have not clearly addressed job satisfaction's role as a mediator between HRM practices and employee turnover intentions (Bibiana et al., 2023; Jannat et al., 2020; Memon et al., 2020). Specifically, research on how job satisfaction mediates the relationship between GHRM and employee retention in Malaysia is lacking. Therefore, this study aims to offer valuable insights into the role of GHRM in fostering environmental responsibility within organizations and its effects on employee satisfaction and retention. This study contributes to the literature as it seeks to address these research gaps and contribute to the understanding of GHRM, job satisfaction, and employee retention among working adults in Malaysia after the pandemic.

2.0   LITERATURE REVIEW

2.1   Job Characteristic Theory

Job characteristic theory, pioneered by Hackman and Oldham (1976), is one of the prominent theories of work design, describing the correlation between work behavior and job characteristics. This theory posits that job characteristics are the primary factor influencing employees' work behavior and their job perception of roles, consequently impacting their job satisfaction (Humphrey et al., 2007). The three psychological states, namely meaningfulness, responsibility, and knowledge, that employees experience are central to the theory. Researchers believe these psychological states drive employee motivation and satisfaction in their work endeavors (Hackman & Oldham, 1976; Oldham & Hackman, 2010).

The Job Characteristics Theory highlights feedback, autonomy, skill variety, task significance, and task identity as key dimensions influencing these critical psychological states among employees. By integrating these dimensions into job design, organizations can bolster the motivational aspect of jobs, fostering favorable outcomes for employees, notably job satisfaction. Employees who perceive their jobs as encompassing all these core characteristics tend to find their work impactful, leading to heightened job satisfaction (Hackman & Oldham, 1976; Shafaei et al., 2020).

2.2   Herzberg's Two-Factor Theory

Herzberg's Two-Factor Theory is popular in examining job satisfaction within organizations. It offers a systematic approach to analyzing this complex phenomenon (Lee et al., 2022). Herzberg's Two-Factor Theory conceptualized two distinct categories of factors, namely hygiene and motivation. Motivational factors like recognition, achievement, responsibility, work, advancement, and growth opportunities can closely link to employee performance. Conversely, hygiene factors pertain to the work environment and encompass elements like company policy, supervision, relations, working conditions, and salary. According to Herzberg et al. (1987), motivation factors can elicit employee satisfaction, whereas hygiene factors primarily alleviate job dissatisfaction. Herzberg (1987) posits that motivation factors tap into individuals' innate need for psychological growth, fostering sustained engagement and fulfilment.

However, several research findings challenge the traditional dichotomy Herzberg's Two-Factor Theory proposed. In a study examining job satisfaction in retail sales, Prasad et al. (2018) observed that employees exhibit stronger reactions to hygiene factors than motivation factors. Sobaih and Hasanein (2020) further support this sentiment, discovering a positive impact of hygiene factors on job satisfaction, while motivation factors yielded a negative effect on satisfaction within the hotel industry context. Moreover, Alrawahi et al. (2020) analyzed job satisfaction among healthcare employees using hygiene factors. They highlighted that only specific hygiene factors significantly influenced satisfaction, such as relationships with colleagues or managers and advancement opportunities. These studies suggest that hygiene factors are essential prerequisites in the workplace, with employees viewing them as fundamental expectations.

Job satisfaction has profound implications for organizational outcomes, as research indicates that delighted workers are more likely to stay in the organization, whereas dissatisfied individuals are prone to attrition (Chiaburu et al., 2022). Thus, while Herzberg's Two-Factor Theory offers valuable insights into the multifaceted nature of job satisfaction, contemporary studies underscore the importance of considering motivation and hygiene factors in understanding and fostering employee well-being within organizations.

2.3   Hypothesis Development

Green Human Resources Management and Job Satisfaction

Research reveals significant reasons why manufacturers adopt green HRM in Malaysia (2020), along with studies by Jabbour et al. (2010) and Jabbour (2011), characterizing Green Human Resources Management (GHRM) as a deliberate and systematic integration of traditional HRM practices with a

company's environmental objectives. It represents a combination of ecological principles with personnel management and is emerging as a noteworthy concept within HRM's academic and professional realms (Lakshmi, 2020; Al-Hajri, 2020). Recognizing HRM's role in fostering a culture of sustainability within a company, implementing GHRM is instrumental in cultivating employees' environmental awareness, motivation, and skills, encouraging active participation in green initiatives (Al-Hajri, 2020).

Research indicates that firms leverage GHRM to achieve their environmental objectives by fostering a green organizational culture wherein workers are attuned to environmental concerns (Chen et al., 2021; Mensah et al., 2021). Doghan et al. (2022) support this finding, suggesting that GHRM positively influences employees' green behaviors within Malaysian educational institutions. Furthermore, Shafaei et al. (2020) indicate that GHRM practices align with the core characteristics delineated by the job characteristics theory.

Nevertheless, the GHRM concept remains in its early stages (Muisyo et al., 2022). Previous literature on GHRM has mainly focused on Western perspectives (Kuan et al., 2022). However, studies on GHRM from an Asian perspective have emerged recently, although still limited (Suharti & Sugiarto, 2020). In Malaysia, GHRM-related research is generally scarce (Kuan et al., 2022). Nonetheless, the green movement in Malaysia has accelerated in recent years, driven by climate change. Consequently, the Malaysian government encourages firms to be mindful of their operations to protect the environment and address climate change (Islam et al., 2023).

Job satisfaction refers to a combination of psychological, physical, and environmental elements resulting in an individual's authentic contentment with their employment (Hoppock, 1935). It indicates the compatibility between individuals and their jobs, where job features that resonate with employees' values substantially influence their satisfaction levels (Shafaei et al., 2020). This observation matches the research that aligns with the job characteristics model introduced by Hackman and Oldham (1980) who stated that job satisfaction relies on multiple facets of work, such as challenges, autonomy, diversity of skills, and growth opportunities.

The pandemic has redefined the landscape of job satisfaction. The typical work arrangement among employees post-COVID-19 became a hybrid model (Hopkins & Bardoel, 2023). The prevalence of hybrid working models post-COVID-19 has enabled employees to enhance their job satisfaction and work-life balance levels (Hopkins & Bardoel, 2023). However, transitioning from traditional working practices to remote work arrangements, such as Work-From-Home (WFH), has presented challenges for firms, including heightened employee stress and dissatisfaction (Chanana, 2021). This hybrid working model engenders stress, impacting employee performance, commitment, and satisfaction levels (Joshua et al., 2021). Hence, understanding job satisfaction after the pandemic is imperative for firms aiming to enhance HRM practices.

Shafaei et al. (2020) highlight that GHRM significantly enhances employee outcomes, including job satisfaction. It represents an organizational approach aimed at sustainable human resource management and encompassing environmental considerations to safeguard the environment (Susanto, 2023). Implementing GHRM fosters a sense of purpose in the workplace, a main driver of employees' psychological state, leading to enhanced job satisfaction and other favourable outcomes such as occupational and organizational commitment (Benevene & Buonomo, 2020; Ercantan & Eyupoglu, 2022; Spreitzer, 1995). Tandon et al. (2023) support this assertion, suggesting that GHRM can augment job satisfaction by enabling employees to derive meaning from their roles. Specifically, GHRM enhances skill variety, task identity, and significance by aligning organizational and employee goals and offering environmental training to improve employees' ecological awareness (Shafaei et al., 2020). Thus, this research posits the following hypothesis:

H1: There is a positive and significant relationship between green human resource management and job satisfaction among working adults in Malaysia.

Job Satisfaction and Employee Retention

Employee retention refers to a company's ability to retain its workers and is essential as it allows firms to maintain talented human capital (Al-Hajri, 2020). According to the literature, entrusting individuals with high job demands and decision-making responsibilities enhances employee motivation and retention, drawing from Herzberg's Two-Factor Theory (Lee, 2015). Moreover, the research underscores the significance of fostering "caring climates" within organizations, characterized by supportive supervisors and empowered employees, as they contribute to lower turnover intentions and greater job satisfaction (Castle et al., 2007a, b; Kao et al., 2014; Zhang et al., 2014). Conversely, the absence of a sense of meaningfulness in the workplace leads to negative sentiments, diminished well-being, decreased job satisfaction, and an increased propensity to seek alternative employment opportunities.

The impact of the COVID-19 pandemic extends beyond its influence on job satisfaction. It has also exacerbated unemployment rates globally. Job satisfaction is pivotal in employees' decisions to remain with or depart from their organizations (Nguyen & Duong, 2020; Prajogo, 2019). Notably, scholars have highlighted that in the post-COVID-19 era, retaining skilled employees poses a significant challenge for firms (Deng et al., 2022). Recent studies suggest that the pandemic has strained the relationship between employees and organizations, potentially leading to heightened turnover intentions (Deng et al., 2022). Consequently, factors influencing job satisfaction and employee turnover intentions have significantly shifted after the COVID-19 pandemic.

The correlation between job satisfaction and employee retention is one of the most thoroughly studied domains in management. Research by Nguyen and Duong (2020) confirms that job satisfaction positively impacts employee retention. Similarly, Zamanan et al. (2020) identified a positive relationship between employee satisfaction and retention. Leveraging knowledge from adjacent disciplines, scholars in law enforcement have established a connection between job satisfaction and turnover intentions (Allisey et al., 2014). These findings contribute to the formulation of the following hypothesis:

> *H2: There is a positive and significant relationship between job satisfaction and employee retention among working adults in Malaysia.*

Job Satisfaction as a Mediator

Past studies have examined the influence of HRM practices on turnover intention, emphasizing an indirect connection mediated by factors like job satisfaction (Bibiana et al., 2023). For example, Aburumman et al. (2020) and Zopiatis et al. (2018) proposed that HRM activities could indirectly influence employee turnover intention, with job satisfaction as the mediator. Supporting this perspective, Al-Kurdi et al. (2021) indicated that job satisfaction partially mediates the correlation between HRM activities and employee retention.

Additionally, research suggests that job satisfaction serves as a partial mediator in the association between specific HRM practices such as talent retention and development, performance-based rewards, performance evaluation, and compensation, and employees' turnover intention (Bibiana et al., 2023; Jannat et al., 2020; Aburumman et al., 2020). However, despite these insights, the exact mediating function of job satisfaction within the link between HRM activities and turnover intention remains incompletely understood due to limited investigation in this area (Bibiana et al., 2023; Memon et al., 2020; Jannat et al., 2020).

Previous research has explored how HRM practices affect turnover intention (Bibiana et al., 2023). Aburumman et al. (2020) and Zopiatis et al. (2018) suggested that factors like job satisfaction might indirectly mediate the relationship between HRM practices and turnover intention. Al-Kurdi et al. (2021) found that job satisfaction partially mediates this relationship. Other studies also discovered that job satisfaction partially mediates the link between specific HRM practices—such as training, performance-based rewards, appraisals, and compensation—and turnover intention (Bibiana et al., 2023; Jannat et al., 2020; Aburumman et al., 2020). However, the exact role of job satisfaction as a mediator is still unclear

due to limited research (Bibiana et al., 2023; Memon et al., 2020; Jannat et al., 2020). Notably, there is a lack of studies on the mediating role of job satisfaction in the relationship between GHRM and employee retention, especially in Malaysia.

It is crucial to conduct further studies to delve into the mediating role of job satisfaction in the relationship between GHRM and employee retention, particularly in Malaysia. Therefore, this study formulates the following hypothesis:

> *H3: Job satisfaction mediates the relationship between green human resource management and employee retention.*

3.0   RESEARCH FRAMEWORK

Rungtusanatham et al. (2014) and Memon et al. (2020) developed the research hypotheses through a segmentation approach. The variables identified in this study were GHRM (Independent Variable), Employee Retention (Dependent Variable), and Job Satisfaction (Mediator). Figure 1 illustrates the research framework.
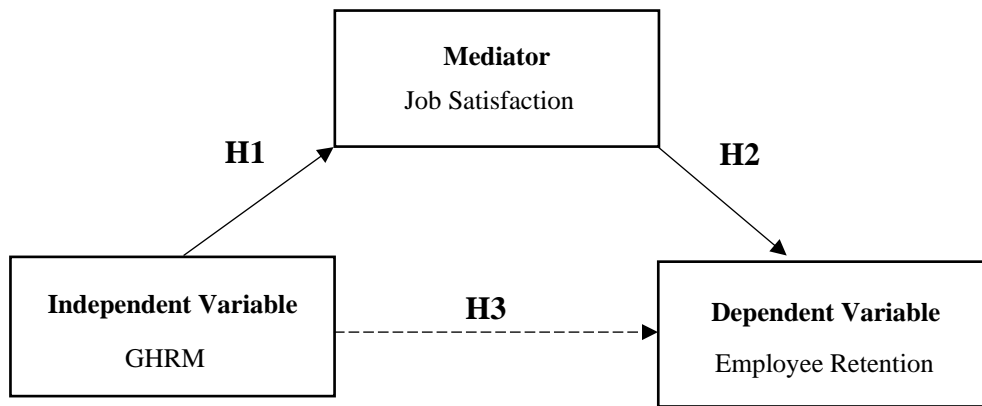

Fig 1. Framework of the study

4.0   METHODOLOGY

4.1   Research Design

This study utilized online surveys and quantitative research methods to investigate the relationship between the variables. Employing a quantitative research methodology was driven by its speed, reduced bias, and efficacy in decision-making, leveraging statistical data as a valuable tool to conserve time and resources (Daniel, 2016). The researchers disseminated the survey through various social media platforms to involve Malaysian working adults aged between 18-60 years old, irrespective of their level of education and line of employment. The researchers provided a Consent Information Statement to guarantee participant anonymity and privacy. This study employed convenience and snowball sampling methods for data collection. Initially, the questionnaire was distributed to the researcher's family and friends through social media platforms. The snowball sampling technique was also used to gather more responses, where the researcher asked peers to share the survey link with their contacts. To guarantee data accuracy and reliability, researchers performed a pre-test to identify and correct errors in the questionnaire's content, structure, and formatting. Additionally, the pre-test aimed to minimize measurement errors and improve data quality.

4.2 Sample Size and Sampling Technique

The participants in this research comprised 153 employed adults aged between 18 and 60, all holding jobs in Malaysia. To determine the sample size, the '10-times rule,' commonly applied in partial least squares structural equation modelling (PLS-SEM), was employed as the minimum estimation method, following the recommendations of Hair et al. (2011) and Rahi (2017). Consistent with Roscoe's guidelines for behavioural research, a sample size within the range of more than 30 to less than 500 was considered suitable (Aziz & Mahmood, 2011). This guideline is aligned with the suggestions of Cohen et al. (2007); a minimum sample size of 30 is generally accepted among researchers for statistical data analysis. This study opted for a non-probability purposive sampling approach for its appropriateness in conducting a questionnaire survey targeting employed adults in Malaysia aged 18 to 60.

4.3 Research Instrument

Participants completed an online survey consisting of four segments: Demographic Information of Respondents, Green Human Resource Management (GHRM) Practices Items, Minnesota Satisfaction Questionnaire (MSQ), and Turnover Intention Scale (TIS-15). The Demographic Information section (Section A) comprised eight questions. Section B focused on GHRM items and contained thirteen items adapted from Jabbour (2011), with a Cronbach Alpha value of 0.96, indicating respondents' satisfaction with their companies' GHRM practices. Section C, the Minnesota Satisfaction Questionnaire (MSQ), assessed job satisfaction with twenty items adapted from Weiss et al. (1967), showing a Cronbach Alpha value of 0.77 according to Gulsen and Ozman (2020). Section D, the Turnover Intention Scale (TIS-6) Questionnaire, included six items from Bothma and Roodt (2013), demonstrating a Cronbach Alpha value of 0.80 for evaluating employee retention. Data were collected using a seven-point Likert scale, ranging from 'Strongly Disagree' to 'Strongly Agree' for Sections B and D and from 'Strongly Dissatisfied' to 'Strongly Satisfied' for Section C.

4.4 Data Analysis

The data collected underwent analysis using Statistical Package for the Social Sciences (SPSS) version 20 and partial least squares structural equation modelling (PLS-SEM) via SmartPLS version 4.0 software. Initially, the researchers evaluated the reliability and validity of the instruments. Subsequently, SPSS was utilized to generate descriptive statistics, presenting the demographic profile of respondents, and indicating the levels of GHRM activities, employee job satisfaction, and turnover intention. This process included calculating means and standard deviations for the respective variables. Furthermore, PLS-SEM was employed to ascertain the Coefficient of Determination (R^2) and Predictive Relevance (Q^2) for the construct variables. Lastly, using the bootstrapping technique, SmartPLS 4.0 determined the significance of each construct's t-value, examining the relationships outlined in the three hypotheses.

4.5 Data Screening

Stringent data cleaning and screening procedures were employed to ensure that responses exclusively originated from Malaysian working adults, with no missing data or incomplete questionnaires falling below a 75% completion rate (Sekaran & Bougie, 2016). When participating in the questionnaire, the designated respondents were requested to answer all the questions in the online questionnaire. Participants were only permitted to advance to the subsequent section after addressing every item within a given section. Consequently, this research survey had complete and valid data. However, six samples that did not align with the specified characteristics of the study's target population, which are not working adults in Malaysia, were excluded from the dataset. We administered Harman's single-factor test to evaluate common method bias. According to Podsakoff et al. (2003), the total variance extracted by a single factor should ideally be under 50%. This study's primary factor accounted for 29.16% of the model variance, a satisfactory result falling below the recommended 50%. The researchers executed the Mahalanobis Distance test to identify multivariate outliers within this study dataset. Dashdondov and Kim (2023) set the threshold for outliers at

a significance level of p<0.001. After completing the Mahalanobis Distance test, a single sample was excluded from the analysis as it exhibited outlier status with a Mahalanobis Distance Probability of less than 0.001. As a result, the study encompassed a total of 153 samples.

4.6   Validity of the Instrument

Before data collection from the targeted participants, researchers subjected the research instrument of this study to pre-testing with five experts and non-experts to ensure face and content validity (Gillen, 2009). These individuals rigorously examined and refined questionnaire items based on their feedback. Fornell & Larcker (1981a) deem convergent validity satisfactory when the Average Variance Extracted (AVE) value exceeds 0.5. The results presented in Table 1 indicate that the AVE values for the GHRM and job satisfaction variables surpassed 0.5, affirming the attainment of convergent validity for these constructs. However, the Employee Retention variable fell below the 0.5 threshold regarding the AVE value. Nevertheless, as per Fornell & Larcker (1981b) and Kokkhangplu et al. (2023), a construct's Composite Reliability (CR) value exceeding 0.6 signifies acceptable convergent validity, even if the AVE value is below 0.5. In this case, employee retention demonstrated a CR value of 0.692, surpassing the recommended threshold of 0.6 and confirming its convergent validity.

Table 1. Reliability analyses results

Variable	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Green HRM	0.850	0.876	0.622
Job Satisfaction	0.951	0.956	0.536
Employee Retention	0.677	0.692	0.417

4.7   Reliability of the Instrument

The researchers analyzed Cronbach's alpha values to evaluate the internal consistency and reliability of the tested items. The instrument demonstrated satisfactory reliability, with overall alpha values ranging from 0.677 to 0.951. As recommended by Hair et al. (2019) and Rahimnia & Hassanzadeh (2013), alpha values of at least 0.60 or higher are considered reliable for research purposes. As depicted in Table 1, the composite reliability (CR) values fell from 0.692 to 0.956. This range indicates that all items possessed CR values well above the accepted threshold of 0.6, as suggested by Hair et al. (2019) and Kokkhangplu et al. (2023), affirming a satisfactory level of reliability.

Hulland (1999) assessed the reliability of indicators by examining the outer loadings, which varied from 0.545 to 0.845 in this study, denoting the minimum acceptable level for interpreting the structure. Hulland (1999) recommended discarding items with loadings below 0.5. Consequently, as demonstrated in Table 2, item JS2 in the Minnesota Satisfaction Questionnaire (MSQ) and item TI3 in the Turnover Intention Scale (TIS-6) Questionnaire were excluded, ensuring that all outer loading values were at least 0.5.

Subsequently, we computed cross-loadings and the Heterotrait-Monotrait correlation ratio (HTMT) to evaluate discriminant validity. The cross-loadings of each item associated with the respective construct were greater than those in other constructs, indicating the successful establishment of a discriminant validity model, as depicted in Table 3.

Table 4 demonstrates that the Heterotrait-Monotrait (HTMT) correlation ratio values were below 0.9, affirming the successful validation of discriminant validity among the reflective constructs (Hair et al., 2019).

The analyses showed that the constructs utilised in this study were valid and reliable.

Table 2. Outer loadings findings

Construct	Green HRM	Job Satisfaction	Employee Retention
Description of Job Position			
DJP1	0.724		
DJP2	0.738		
DJP3	0.779		
Recruitment & Selection			
RS1	0.668		
RS2	0.670		
Training & Development			
TD1	0.833		
TD2	0.830		
TD3	0.790		
Performance Evaluation			
PE1	0.729		
PE2	0.720		
PE3	0.577		
Remuneration & Rewards			
RR1	0.602		
RR2	0.701		
Job Satisfaction (JS)			
JS1		0.612	
JS3		0.636	
JS4		0.624	
JS5		0.826	
JS6		0.777	
JS7		0.664	
JS8		0.780	
JS9		0.691	
JS10		0.586	
JS11		0.691	
JS12		0.781	
JS13		0.719	
JS14		0.781	
JS15		0.739	
JS16		0.768	
JS17		0.845	
JS18		0.742	
JS19		0.819	
JS20		0.763	
Turnover Intention (TI)			
TI1			0.708
TI2			0.754
TI4			0.626
TI5			0.545
TI6			0.572

Table 3. Cross loadings result

Construct	Green HRM	Job Satisfaction	Employee Retention
DJP	**0.772**	0.471	0.432
RS	**0.781**	0.341	0.176
TD	**0.853**	0.558	0.390
PE	**0.771**	0.339	0.130
RR	**0.764**	0.358	0.194
JS1	0.394	**0.612**	0.374
JS3	0.405	**0.636**	0.364
JS4	0.382	**0.624**	0.358
JS5	0.478	**0.826**	0.546
JS6	0.406	**0.777**	0.482
JS7	0.308	**0.664**	0.395
JS8	0.334	**0.780**	0.512
JS9	0.366	**0.691**	0.346
JS10	0.314	**0.586**	0.277
JS11	0.280	**0.691**	0.346
JS12	0.504	**0.781**	0.447
JS13	0.382	**0.719**	0.441
JS14	0.424	**0.781**	0.486
JS15	0.387	**0.739**	0.402
JS16	0.432	**0.768**	0.362
JS17	0.483	**0.845**	0.589
JS18	0.345	**0.742**	0.330
JS19	0.459	**0.819**	0.434
JS20	0.396	**0.763**	0.387
ER1	0.073	0.303	**0.708**
ER2	0.364	0.545	**0.754**
ER4	0.125	0.265	**0.626**
ER5	0.002	0.224	**0.545**
ER6	0.412	0.377	**0.572**

Table 4. Heterotrait-Monotrait (HTMT) ratio findings

Construct	Green HRM	Job Satisfaction	Employee Retention
GHRM			
Job Satisfaction	0.576		
Employee Retention	0.428	0.628	

Note: HTMT values in parentheses represent the 2.5% and 97.5% confidence intervals.

5.0   FINDINGS

5.1   Characteristics of the Respondents

The demographic information gathered in Section A included the gender, age, nationality, highest educational attainment, city of residence, job position, and general work experience of each respondent. As outlined in Table 5, 69.3% of the participants were female, while 30.7% were male. Approximately fifty-

four per cent of the respondents were in the age range of 21 to 30, 19.0% were between 31 and 40, 15.7% were between 51 to 60, and 11.8% were in the 41 to 50 age group. Additionally, all respondents were Malaysian.

Furthermore, among the 153 targeted respondents, 60.8% possessed a bachelor's degree, while others held master's degrees (16.3%), diplomas (11.8%), or the Malaysian Certificate of Education (SPM) (3.9%). Individuals with Malaysian Higher School Certificates (STPM) and doctorate degrees constituted 2.6% of the sample, while those with foundations and other qualifications accounted for 0.7% and 1.3%, respectively. The focus of this study was on Malaysia, with the majority of respondents residing in Kuching (80.4%), followed by Kuala Lumpur (9.2%), Bintulu (5.2%), Miri (2.0%), Sibu (0.7%), or other cities (2.5%). Additionally, most targeted respondents had accumulated one to ten years of work experience (56.9%), followed by those with 21 to 30 years (15.0%), 11 to 20 years (13.7%), less than one year (9.2%), and more than 30 years (5.2%). Concerning participants' current job positions, the majority worked as junior workers (41.8%), followed by individuals in other job positions (19.6%), senior workers (18.3%), executive managers (8.5%), assistant managers (6.5%), and directors (5.3%).

Table 5. Demographic profile of respondents

Characteristics		Frequency	Percent (%)
Gender	Male	47	30.7
	Female	106	69.3
Age	21 to 30 years old	82	53.5
	31 to 40 years old	29	19.0
	41 to 50 years old	18	11.8
	51 to 60 years old	24	15.7
Nationality	Malaysian	153	100.0
	Non-Malaysian	0	0.0
Highest Education Attainment	Sijil Pelajaran Malaysia (SPM)	6	3.9
	Sijil Tinggi Persekolahan Malaysia (STPM)	4	2.6
	Diploma	18	11.8
	Foundation	1	0.7
	Bachelor's Degree	93	60.8
	Master's Degree	25	16.3
	Doctor's Degree	4	2.6
	Others	2	1.3
Current City of Residence	Kuching	123	80.4
	Miri	3	2.0
	Sibu	1	0.7
	Bintulu	8	5.2
	Kuala Lumpur	14	9.2
	Others	4	2.5
Working Experience	Less than 1 year	14	9.2
	1 to 10 years	87	56.9
	11 to 20 years	21	13.7
	21 to 30 years	23	15.0
	More than 30 years	8	5.2
Current Job Position	Junior Worker	64	41.8
	Senior Worker	28	18.3
	Assistant Manager	10	6.5
	Executive Manager	13	8.5
	Director	8	5.3
	Others	30	19.6

5.2 Means and Standard Deviations of the Variables

As depicted in Table 6, the comprehensive descriptive findings unveiled a heightened level of satisfaction with training and development among millennial employees in Malaysia (overall mean = 3.84, overall standard deviation = 0.74). Furthermore, the findings reported that the performance of millennial employees in Malaysia was at a moderate level (overall mean = 3.57, overall standard deviation = 0.51). The findings also showed that turnover intention among millennial employees in Malaysia was low (overall mean = 2.56, overall standard deviation = 0.49). This section effectively addressed and fulfilled the research objectives related to training and development satisfaction, employee performance, and employee retention levels.

Table 6. Descriptive results of GHRM, job satisfaction, and employee retention

Research Variables	Overall Mean	Std. Dev.
Training and Development	3.84	0.74
Employee Performance	3.57	0.51
Turnover Intention	2.56	0.49

5.3 Coefficients of Determination (R^2) and Predictive Relevance (Q^2)

The structural model's evaluation involved examining the Coefficients of Determination (R^2) and Predictive Relevance (Q^2) values. A value of R^2 equal to or exceeding 0.10, along with a Q^2 value greater than 0, indicates a relationship among the model's constructs (Hair et al., 2016; Falk & Miller, 1992). From the R^2 values presented in Table 7, it is evident that Green HRM impacts employee job satisfaction, explaining 29.6% of the variance in job satisfaction. Regarding the connection between Green HRM and employee retention, the R^2 value is 0.333, signifying that Green HRM accounts for 33.3% of the variance in employee retention. In Table 7, the Q^2 values for the two dependent variables, job satisfaction and employee retention, are 0.276 and 0.117, respectively. This finding indicates the structural model's predictive power, as both Q^2 values exceed 0.

Table 7. Coefficient of determination (R^2) and predictive relevance (Q^2) findings

Variables	R^2	Q^2
Job Satisfaction	0.296	0.276
Employee Retention	0.333	0.117

5.4 Hypotheses Testing

The PLS-SEM bootstrapping method was employed to evaluate the three hypotheses. Table 8 illustrates that Hypothesis 1 was supported (β-value = 0.544, standard deviation = 0.060, t-value = 9.137, p-value = 0.000). This finding indicates a significant positive correlation between Green HRM and job satisfaction among working adults in Malaysia. Hypothesis 2 was also supported (β-value = 0.577, standard deviation = 0.046, t-value = 12.425, p-value = 0.000), suggesting a significant positive association between Green HRM and employee retention among working adults in Malaysia. Regarding the mediating role of job satisfaction in the relationship between GHRM and employee retention (Post hoc analysis), the results indicate that job satisfaction indeed has a significant mediating effect between GHRM and employee retention (β=0.314, standard deviation = 0.049, t-value = 6.431, p-value = 0.000). Consequently, H_1, H_2, and H_3 are all supported, as evidenced by their p-values being less than 0.05 and their t-statistics exceeding 1.96 (Nuzzo, 2014).

Table 8. Summary of hypotheses testing results

Relationship	Direct Effect (β-Value)	Standard Deviation	t-value	p-value	Hypothesis
H_1: GHRM → Job Satisfaction	0.544	0.060	9.137	0.000	Supported
H_2: Job Satisfaction → Employee Retention	0.577	0.046	12.425	0.000	Supported
H_3: GHRM → Job Satisfaction → Employee Retention *Post hoc (Mediation) Analysis*	0.314	0.049	6.431	0.000	Supported

6.0 DISCUSSION

The study integrates Green Human Resource Management (GHRM) practices, including green job position and analysis, green recruitment and selection, green training and development, green performance evaluation, and green remuneration and rewards. According to the findings, training and development display the highest mean score at 5.29, while remuneration and rewards exhibit the lowest mean score at 4.25. Consequently, among the five GHRM practices, training and development emerge as the most robust indicator of GHRM, whereas remuneration and rewards are the least effective. The study's observation that training and development are the most significant GHRM measure aligns with the findings of Ramachandran and Kumar (2022), while the conclusion that remuneration and rewards are the weakest GHRM measure corresponds with the outcomes of Kuan et al. (2022).

The adoption of GHRM significantly and positively impacts the job satisfaction of employed adults in Malaysia after COVID-19. This discovery suggests that companies implementing GHRM practices in Malaysia can anticipate higher levels of job satisfaction among their employees. These results are aligned with studies conducted by Shafaei et al. (2020), Susanto (2023), Ramachandran and Kumar (2022), and Tandon et al. (2023), all of which concluded that GHRM has positively affected employees' job satisfaction. Furthermore, applying GHRM practices aligns with the fundamental principles outlined by the job characteristics theory (Shafaei et al., 2020). Specifically, GHRM enhances skill variety, task identity, and significance by fostering a shared environmental vision and goals between companies and their employees (Shafaei et al., 2020). Additionally, environmental training enables employees to enhance their environmental awareness, while environmental activities promote autonomy when companies encourage them to contribute voluntarily to achieve environmental objectives (Shafaei et al., 2020). Finally, green performance evaluations and remuneration and rewards allow employees to recognize the tangible impact of their environmental initiatives (Shafaei et al., 2020). Therefore, adopting GHRM, which includes describing job positions and analyzing them from a green perspective, green talent attraction and selection, green talent retention and development, green performance management, and green remuneration, assists companies in enhancing their employees' job satisfaction. The job characteristics theory emphasizes autonomy, feedback, skill variety, task identity, and task significance as primary factors influencing employees' psychological states (Hackman & Oldham, 1976; Shafaei et al., 2020). Consequently, when the workforce feels that their jobs embody these characteristics through implementing GHRM functions, they find their work meaningful, increasing job satisfaction (Hackman & Oldham, 1976; Shafaei et al., 2020).

Employee job satisfaction significantly and positively affects the retention of working adults in Malaysia following the COVID-19 pandemic. This discovery suggests that as employees' job satisfaction increases, firms are more likely to retain these employees. Moreover, the findings are supported by Nguyen and Duong (2020), who identified a positive correlation between job satisfaction and employee retention.

Also, the findings match those of Zamanan et al. (2020), who revealed that job satisfaction negatively correlated with turnover intention. However, they contradict the findings of Prajogo (2019), who concluded that job satisfaction has no relationship with turnover intention. Previous studies have shown that the motivation and hygiene factors proposed in Herzberg's Two-Factor Theory significantly influence job satisfaction (Lee et al., 2022; Alrawahi et al., 2020; Lo et al., 2016). Notably, employees who experience job satisfaction will stay in their respective firms, while dissatisfied workers will consider leaving (Chiaburu et al., 2022; Lee et al., 2022). Hence, it is evident that job satisfaction positively impacts employee retention, and the findings validate the applicability of Herzberg's Two-Factor Theory.

Job satisfaction might mediate the connection between GHRM and employee retention among working adults in Malaysia after the pandemic. These findings echo similar research by Al-Kurdi et al. (2021), Bibiana et al. (2023), Jannat et al. (2020), and Aburumman et al. (2020), who all noted that job satisfaction partially mediates the link between general HRM practices and turnover intention. Previous studies have hinted at an indirect association between HRM practices and turnover intention, potentially mediated by factors like job satisfaction (Aburumman et al., 2020; Zopiatis et al., 2018). However, this study specifically delved into a unique mediation scenario, particularly within the Malaysian context, focusing on the mediating role of job satisfaction in the nexus between GHRM and employee retention. This aspect of the study introduces fresh insights into the realm of HRM in Malaysia. Therefore, showcasing job satisfaction as a mediator in the connection between GHRM and employee retention among working adults in Malaysia post-COVID-19 holds significance. When scrutinized through the job characteristics theory, implementing GHRM aligns with the essential characteristics needed for employees to perceive their jobs as meaningful, ultimately fostering job satisfaction (Hackman & Oldham, 1976; Shafaei et al., 2020). Additionally, drawing on Herzberg's Two-Factor Theory, motivation and hygiene factors influence employees' job satisfaction (Lee et al., 2022; Alrawahi et al., 2020; Lo et al., 2016). Hence, researchers anticipate that employee retention will enhance because employees experiencing job satisfaction are more inclined to remain in their respective organizations (Chiaburu et al., 2022; Lee et al., 2022). Consequently, job satisfaction was anticipated as a mediator in the relationship between GHRM and employee retention, considering the positive impact of GHRM on job satisfaction, rooted in the job characteristics theory, and the favorable effect of job satisfaction on employee retention, as corroborated by Herzberg's Two-Factor Theory.

7.0   IMPLICATIONS

Most of the existing literature on Green Human Resource Management (GHRM) primarily focuses on Western countries, while there are emerging perspectives from Asian nations, including Malaysia. However, there needs to be more research on GHRM in Malaysia, particularly concerning its impact on employee outcomes such as job satisfaction among working adults. This study aims to address this gap by contributing to the GHRM literature, specifically by investigating its influence on job satisfaction within the Malaysian context. Additionally, the study emphasizes the importance of mediators, such as job satisfaction, in clarifying indirect relationships between GHRM and employee retention, thereby enhancing the extensive literature on the correlation between job satisfaction and employee retention. An essential aspect of this study is to explore the previously unexamined mediating role of job satisfaction in the relationship between GHRM and employee retention in Malaysia. Moreover, the study advocates for the segmentation approach Rungtusanatham et al. (2014) proposed in formulating hypotheses. It applies the job characteristics theory to the Malaysian context to scrutinize the link between GHRM and job satisfaction. Furthermore, Herzberg's Two-Factor Theory investigates the association between job satisfaction and employee retention.

The study's findings are significant for firms, managers, employers, and practitioners. The research highlights that GHRM substantially and positively impacts job satisfaction among working adults in Malaysia after the pandemic. This finding suggests an opportunity for companies currently relying on

traditional Human Resource Management (HRM) practices in Malaysia to consider integrating GHRM practices. Similarly, the study provides validation for those already implementing GHRM, affirming its positive influence on employees' job satisfaction. Moreover, the study demonstrates that job satisfaction positively contributes to employee retention among working adults in Malaysia post-pandemic. Companies facing challenges related to retention and high turnover rates in Malaysia should prioritize addressing their employees' job satisfaction to enhance retention prospects. Notably, the research reveals that job satisfaction can mediate the relationship between GHRM and employee retention among Malaysian working adults after the pandemic. Therefore, Malaysian firms should recognize that GHRM can indirectly impact employee retention, with job satisfaction significantly mediating this dynamic.

8.0   CONCLUSION AND RECOMMENDATION

This study uncovered a favorable impact of Green Human Resource Management (GHRM) on job satisfaction among employed adults in Malaysia following the COVID-19 pandemic. Furthermore, it confirmed that job satisfaction positively impacts employee retention in the Malaysian workforce post-pandemic. However, the most significant discovery of the study lies in identifying job satisfaction as a mediating factor in the relationship between GHRM and employee retention among working adults in Malaysia after COVID-19. As a result, all initially proposed hypotheses received support. This research has enriched the GHRM literature by deepening our understanding of the direct and indirect links between GHRM, job satisfaction, and employee retention among Malaysian working adults post-COVID-19.

One research limitation pertains to the diversity of the sample. The study focuses on working adults in Malaysia aged between 18 and 60, with many respondents residing in Kuching. Consequently, there might be an underrepresentation of specific demographics due to limited inclusion efforts, potentially limiting the understanding of how different samples may respond to the issue. Another limitation is the study's contextual scope, as it exclusively examines GHRM, job satisfaction, and employee retention within the context of working adults in Malaysia. This specificity may influence the generalizability of the results to a broader population.

Future research could address the highlighted limitations by making efforts to engage and involve a more significant number of respondents from West Malaysia. This approach aims to accurately represent working adults across Malaysia, strengthening the findings' validity and reliability. Consequently, this strategy would contribute to a more comprehensive and robust understanding of working adults in Malaysia. Additionally, to address the limitation related to the study's context, future research exploring the direct and indirect relationships between GHRM, job satisfaction, and employee retention could encompass working adults beyond the borders of Malaysia. By doing so, the study could offer a more universal and well-rounded outcome, considering the perspectives of working adults on a global scale.

It is recommended that policymakers implement national GHRM standards with certification systems, provide financial incentives like tax breaks and grants for green initiatives, and facilitate public-private partnerships to deliver GHRM training programs. Practitioners should incorporate green criteria into performance appraisals, establish a dedicated Green HR task force to oversee GHRM practices, and promote a culture of sustainability by engaging employees in green initiatives and activities.

9.0   CONTRIBUTION OF AUTHORS

The authors confirm the equal contribution in each part of this work. All authors reviewed and approved the final version of this work.

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11.0 CONFLICT OF INTEREST STATEMENT

All authors declare that they have no conflicts of interest.

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