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The Relationship Between Green HRM and Employee Green Creativity among Employees in Manufacturing Sector

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Abstract

There is less research conducted on how Green HRM can enhance green creativity in manufacturing sector. Therefore, this study aims to explore how employee green creativity can be enhanced by strengthening green human resource management. The objective of this study is to determine the level of Green HRM among employees in manufacturing sector, to determine the level of employee green creativity among employees in manufacturing sector, and to identify the relationship between Green HRM and employee green creativity among employees in manufacturing sector. This was a quantitative study by distributing an online survey to 384 employees in Selangor's manufacturing sector with a response rate of 39.58%. The study's data were analysed using both descriptive and correlation analysis with SPSS. The study found a significant positive relationship between Green HRM and employee green creativity, highlighting the potential for GHRM practices to drive sustainable innovation within employees of manufacturing sector.

1. Introduction

Green human resource management (GHRM) refers to a collection of techniques aimed at encouraging ecologically, socially, and resource-conscious conduct among employees in a corporation. A few examples of green HR efforts are green training, green rewards, and green performance appraisal (Shafaei & Nejati, 2024). Moreover, implementing green HR may help green firms in several ways, including higher employee confidence, engagement, and motivation. In addition to becoming more productive, workers are also probably going to become more devoted to the company. Organizations may improve their environmental performance by using Green HRM (Mousa & Othman, 2020).

Green creativity entails developing new concepts for environmentally friendly goods, services, processes, or behaviors that are both inventive and helpful (Chen & Chang, 2013). Furthermore, green innovation, which turns items into "sustainable green products" to lessen environmental harm and further businesses' green agendas, is proxied by green creativity. Because of the way the manufacturing industry operates, it uses a lot of resources, generates a lot of waste, and contaminates the air, water, and land with harmful substances (Farrukh *et al*., 2022). To reduce environmental pollution, manufacturing businesses are considering how to integrate Green HRM practices and foster green creativity within their organizations. The potential of green creativity to stimulate sustainable innovation and growth in businesses and sectors makes it significant. Green creativity not only tackles environmental issues but also supports social responsibility and long-term ecological balance. Organizations may

create cutting- edge goods, procedures, and services that have a minimal negative impact on the environment, use fewer resources, and support sustainable development by cultivating a culture of green creativity.

According to the natural resource-based paradigm, future businesses will rely largely on nature, and only those that prioritize environmental sustainability will prosper (Hart & Hart, 2013). Green creativity has been introduced in the manufacturing sector, as previously stated. Businesses greatly rely on the creative and environmentally conscious actions of their employees to advance environmentally sustainable growth (Malik *et al*., 2021). Green creativity is the process of creating useful and inventive ideas with environmentally sensitive inputs to produce goods, services, procedures, and practices for businesses (Zhang *et al*., 2020). Additionally, green creativity may provide businesses a competitive edge while also being essential for addressing ecologically sustainable improvements on a worldwide scale (Chen & Chang, 2013). However, producers still need to raise awareness among producers about the relevance and advantages of green creativity. Apart from that, there has not been any actual research done on how Green HRM improves green creativity in manufacturing sector (Joshi & Dhar, 2020). The gap emphasizes how urgently thorough study is needed to clarify how green training programs support manufacturing professionals' adoption of innovative and sustainable practices. Hence, there is a need to explore how to increase green creativity by enhancing Green HRM. The previous studies found that Green HRM could improve the innovative behavior of employees (Shafaei & Nejati, 2024). However, limited studies were found on the association between Green HRM and employee creative activity from a Malaysian perspective (Zihan *et al*., 2024). Thus, this study aims to identify the relationship between Green HRM and employee green creativity among employees in manufacturing sector in Malaysia.

Therefore, to achieve the research objectives the level of Green HRM and employee green creativity among employees in manufacturing sector are determined. Consequently, the relationship between Green HRM and employee green creativity among employees in manufacturing sector is identified.

2. Literature Review

2.1 Employee Green Creativity

The concept of green creativity emerged when corporations placed a greater emphasis on social responsibility and environmental sustainability. As a consequence of rapidly developing environmental concerns that jeopardize the lives of millions of people, many organizations have shifted their emphasis to the emerging trend of green innovation (Taha & Abbas, 2023). Green creativity is an important component in organizations and is closely tied to the organization's strategy. This is due to the concept's ability to generate something fresh of great value while also benefiting the surrounding environment. It describes a technique that reduces material density and has a negative influence on industrial operations while also adding value via continual improvement. Organizations are encouraged to shift their focus from traditional creativity to green innovation, which includes putting an environmental factor into goods and services. This includes attempts to protect or improve the natural environment by lowering energy use, decreasing resource utilization, and reducing waste and emissions (Hasnawi, 2021).

Green creativity is characterized by the development of concepts akin to environmental creativity and environmental efficiency (Yang *et al*., 2019). Green innovation aims to promote economic growth and development while protecting the sustainability of natural assets that supply environmental resources and services critical to human well-being. Furthermore, it also helps to minimize the cost of generated materials (Maitlo *et al*., 2022; Mcdonald, 2003). Green inventiveness serves as a bridge between environmental ethics and competitive rewards. It gives an excellent chance to satisfy client expectations while protecting the environment. Furthermore, it may enhance organizational performance, achieve efficiency in the use of resources and energy, and allow companies to cut expenses while increasing revenues (Taha & Abbas, 2023).

2.2 Theory of Employee Green Creativity

Using the 4Ps paradigm, there is a four-dimensional model of employee green creativity that defines four "bases" of green creativity, namely green creative motivation, thinking, behavior, and outcome (Jiang *et al*., 2021). Green creative motivation correlates to the "press" component, which refers to external influences that influence motivation. Green creative thinking correlates with the "individual" factor, emphasizing individual cognitive processes. Green creative behavior reflects the "process" component, which includes actions and behaviors. Finally, green creative outcome falls under the "product" category, which refers to the concrete outputs or effects of creative efforts. These four categories are fundamentally diverse because they reflect varying aspects of green creativity.

2.2.1 Green Creative Motivation

Green creative motivation is the intrinsic drive to create and develop green products that minimize pollution and promote sustainability. Such individuals inspire others in the organization to innovate (Taha & Abbas, 2023). This motivation enhances employees' creative self-efficacy, encouraging engagement in developing green goods (Prabhu *et al*., 2008). It helps them recognize the value of their creative actions (Auger & Woodman, 2016). Intrinsic drive boosts cognitive flexibility, leading to increased creativity (Shalley *et al*., 2004). Employees who are personally driven are therefore more likely to come up with creative concepts for eco-friendly products.

2.2.2 Green Creative Thinking

To engage in green creative thinking, one must possess the cognitive ability to recognize basic problems and devise original solutions, as well as the cognitive flexibility to create strategic plans and solutions for new issues. One must also gather ideas from colleagues and engage in thoughtful, flexible discussions to arrive at the main idea (Taha & Abbas, 2023). The green creative drive alone is insufficient to foster green creativity; personnel must also have creative thinking abilities such as cognitive style and flexibility. Personal creative thinking is at the center of the creative process, including issue-solving and solution implementation (Lonergan *et al*., 2004).

2.2.3 Green Creative Behavior

Green creative behavior involves individuals' ability to learn green behaviors and skills, communicate them flexibly, and develop them further to achieve green creative objectives in providing or developing green goods. They must collaborate, exchange knowledge, and gather information to generate unique and effective ideas for green products (Taha & Abbas, 2023). This behavior is crucial for translating creative ideas into tangible green products, requiring both static and dynamic capacities (Paulus, 2000).

2.2.4 Green Creative Outcome

Green creative outcome involves providing fresh concepts and recommendations for environmentally friendly goods, services, procedures, or methods that are acknowledged as unique, innovative, and eco- friendly. It aims to lessen harm to the environment caused by manufacturing processes, thus promoting environmental sustainability. It's crucial for workers in green businesses to deliver innovative results, including creating green services and goods. The last dimension, "green creative outcome," involves carrying out creative objectives by generating original and practical concepts for green goods. Employees must consider the amount, quality, value, and speed of innovative ideas when creating and executing eco-friendly products (Hsu *et al*., 2010). To preserve the stability of the green product development system, workers must provide not only time, labor, materials, and money but also produce innovative results (Horwitz & Horwitz, 2007).

2.3 Green HRM

The application of green management concepts to different HR tasks, such as job design, staffing, training and development, motivation, and human resource maintenance, is known as green human resource management, or GHRM. The objectives are to fulfill employee expectations, advance company objectives, and improve pro-environmental behavior among employees (Shah, 2019). Green HRM focuses on the organization's environmental management objectives and human resources (Jabbour & Renwick, 2018). Explicit frameworks are necessary for resource management and environmental damage prevention in organizations, requiring the implementation of monitoring techniques to evaluate sustainable operations (Chams & García-Blandón, 2019).

According to Wagner (2013), green HRM is a subset of sustainable HRM focused on environmental sustainability. It deals with corporate social responsibility issues. To foster employee engagement and develop corporate social responsibility, firms must implement green human resource management practices. It is imperative to implement green HRM policies to maximize employee experience with corporate social responsibility (Leidner *et al*., 2019). Workers should advocate for green HRM practices to provide dedication, feedback, and help address environmental issues by prioritizing environmental considerations in all parts of their work (Yusliza *et al*., 2017).

2.4 The Relationship between Green HRM and Employee Green Creativity

Previous study by Huo *et al*. (2020) on Chinese coal enterprises found that top management's commitment to human resource management promotes green creativity through Green Human Resource Management (GHRM). The results show that dedication to green human resource management has an indirect impact on the enterprise of green innovation. GHRM, as defined by Guerci & Carollo (2015) and Zibarras and Coan (2015), encompasses the whole employee work cycle, including incentives, education, and training. GHRM strategies like as green

Research in Management of Technology and Business Vol. 6 No. 1 (2025) p. 228-240

training, salary, and recruitment improve employees' environmental skills, motivation, and alignment with organizational ideals. Thus, GHRM promotes a culture of green innovation, which improves both environmental and organizational performance.

According to Malik *et al*. (2021), organizations foster green innovation among workers in order to reduce pollution and achieve sustainable growth. The purpose of this study is to investigate how Green HRM activities influence employee green innovation. For hypothesis testing, data were collected from 437 people working in a variety of Pakistani sectors. The results show that GHRM has a favorable and significant impact on green creativity. Green Human Resource Management (GHRM) combines environmental management and human resource practices to achieve strategic goals and improve performance (Ahmed, 2020) by encouraging green hiring, training, performance management, and rewards, cultivating a green culture, and aligning personal and organizational sustainability goals. (Roscoe, 2019; Tang *et al*., 2018; Chen & Boiral, 2013; Ghouri, 2020). This alignment allows individuals to connect their personal and organizational green aims, fostering green creativity.

The study by Munawar *et al*.(2022) goals is to look at the interaction between green human resource management (GHRM) and green innovation in the hotel sector, with a focus on the mediation of green human capital and environmental knowledge, as well as the moderation of managerial environmental concerns. The study, which included 209 participants from various occupational levels across several hotel chains in Pakistan, discovered that GHRM positively leads to organizational green creativity. Companies fostering environmental concern in their work culture, such as through Green HRM, create a positive image for employees and outsiders. Implementing Green HRM encourages green attitude behavior, increasing green creativity (Ahmad *et al*., 2022). Based on the above discussion, the following hypothesis is proposed.

H1: There is a relationship between Green HRM and employee green creativity.

2.5 Conceptual Framework

Fig. 1 shows the conceptual framework used in this study. The dependent variable is employee green creativity, and the independent variable is Green HRM.

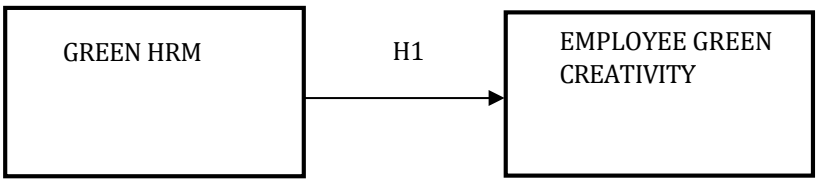

Fig. 1 *Conceptual Framework*

3. Research Methodology

3.1 Research Design

This section describes the research design, which employed a quantitative method. Quantitative methods are research strategies that include collecting numerical data and interpreting it statistically. It includes the use of a survey questionnaire to collect data on the relationship between Green HRM and employee green creativity from manufacturing sector employees. The questionnaire surveys quickly gathered and analyzed data from the target population. Descriptive research will aid in developing hypotheses and identifying research questions, while also clarifying the significant variables for statistical analysis. This approach aims to maximize responses from manufacturing sector employees in Selangor.

3.2 Research Population and Sample

A population is a large group of persons or items that serve as the primary focus of the scientific question. This study's target population is the employees of the manufacturing sector with an emphasis on Selangor. This area was chosen for this study because this area has a wide variety of manufacturing industries such as Proton Holdings Berhad, and Perodua Manufacturing Sdn. Bhd., Nestle (Malaysia) Bhd, and more. There are 14,912 manufacturing industries located in Selangor. Furthermore, the study's overall population consists of 960,000 employees.

3.3 Sampling Method

A sample is properly selected from the population to achieve the proper general conclusion. The sample is meant to allow the researcher to perform the study on members of the population so that the results may be utilized to derive conclusions that apply to the entire population. In this study, the non- probability sample approach, known as convenience sampling, will be utilized to gather data via an online questionnaire. The convenience sampling approach was utilized in this study because it is simple, economical, and quick to conduct research. Using the convenience sampling approach, the researcher emailed a link to an online questionnaire, a Google Forms, to people who work in the manufacturing industry in Selangor. According to Krejcie and Morgan (1970), The sample for this research is 384 employees.

3.4 Data Collection

This study used a quantitative method, namely a questionnaire survey. The research focuses on objective measurement through the statistical, mathematical, or numerical analysis of data collected from polls, questionnaires, and surveys, or by using computational techniques to manipulate existing statistical data. Data collection involves gathering both primary and secondary data and information. Primary data is data that researchers obtain directly from primary sources using methods such as interviews, questionnaires, and experiments. Primary data is often acquired from its source and is considered the best type of data in research. The primary data for this study was collected using an online questionnaire. Questionnaires were delivered to manufacturing employees in Selangor. The questionnaire was sent using an online survey via Google Forms. This method improved data collection as the population was concentrated in Selangor.

3.5 Pilot Study

A pilot study involves testing a questionnaire with a smaller sample than the intended sample size. During the review phase, questionnaires were distributed as a fraction of the overall sample population or as convenience samples. Apart from that, the pilot survey assessed the correctness of instructions by determining if all respondents followed them exactly. This will improve understanding of the most successful survey types for achieving the study's objectives. This study uses a pilot test to examine the reliability of the research instrument before collecting actual data. This research chose 30 employees in the manufacturing sector in Selangor to assess the reliability and validity of the questionnaire.

3.6 Research Instrument

Research instruments are the tools used to collect information from study participants on a topic of interest. These tools may include many forms, including questionnaires, surveys, interviews, checklists, and basic tests. In addition, research instruments should help answer research aims, objectives, and research questions, as well as test the study's hypothesis. This study utilised an online survey as its quantitative method. The researcher will provide respondents with Google Forms to complete, allowing for rapid and efficient data collection. This study's respondents are employees in the manufacturing sector in Selangor. Table 1 shows the research instrument used in the study.

Table 1 *Research instrument*

Section	Items	Source
A	Demographic	
B	Green HRM	Shafaei & Nejati (2024)
C	Employee Green Creativity	Jiang *et al*. (2021)

The response used the five-point Likert scale format, and the answers were categorised from "strongly disagree" (1) to "strongly agree" (5) as shown in Table 2.

Table 2 *Likert scale for green HRM and employee green creativity*

Scale	1	2	3	4	5
Description	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree

3.7 Data Analysis

The quantitative data collected throughout the investigation had been evaluated using statistical software. All questionnaires were verified for completeness before being loaded into SPSS for screening and data cleaning. Norusis (2006) claimed that the Statistical Process for Social Science (SPSS) is a statistical program that allows for easy creation of graphical presentations and analysis. The study employed SPSS version 27 for data collection, descriptive analysis, and correlation analysis.

3.7.1 Descriptive Analysis

Data analysis involves cleaning, transforming, and modelling data to support business decisions. Data analysis seeks to extract relevant information and make informed judgments. Furthermore, Data analysis is a tool that helps users analyse and modify data, evaluate relationships, and uncover patterns for interpretation.

3.7.2 Correlation Analysis

Correlation analysis is a statistical tool used to determine the existence and strength of relationships between variables. It analyses quantitative data, such as survey results, to identify significant patterns or trends. A positive correlation indicates that both variables increase together, while a negative correlation shows that one increases as the other decreases.

4. Results and Discussion

4.1 Response Rate

The respondents for this study consist of employees in the Selangor region's manufacturing sector. Table 3 shows that 384 questionnaires were sent out in all, and 152 sets of questionnaires were returned, yielding a 39.58% response rate.

Table 3 *Survey return rate*

Sample Size	Questionnaire Distribute	Questionnaire Returned	Percentage
384	384	152	39.58%

4.2 Reliability Analysis

4.2.1 Pilot Test

Table 4 shows the reliability of the pilot test for this study. Cronbach's Alpha value of Green HRM is 0.894, which is very good. The value of employee green creativity is 0.970, which is excellent. Thus, the result was reliable and can be accepted.

Table 4 *Pilot test*

Variable	Cronbach's Alpha	N-Items in Scale	N-Respondents
Green HRM	0.894	8	30
Employee Green Creativity	0.970	16	30

4.2.2 Reliability Test

Table 5 shows the actual reliability test of this study. The Cronbach's Alpha value for Green HRM is 0.883 while the Cronbach's Alpha value for employee green creativity is 0.935 which reflects acceptable reliability.

Table 5 *Reliability test*

Variable	Cronbach's Alpha	N-Items in Scale	N-Respondents
Green HRM	0.883	8	152
Employee Green Creativity	0.935	16	152
Total	1.818	24	152

4.3 Descriptive Analysis

Table 6 shows the summary of the demographic background analysis. Based on the table, there are five questions in demographic background, which are gender, age, education level, tenure in the current organisation, and current role. Overall, most of the respondents are female (56.6 %) and are 20-30 years old (47.4%). The majority of the respondents have a bachelor's degree (45.4%). In addition, most of the respondents have worked for their present company for up to 5 years (49.3%) and have a non-managerial role (55.9%).

Table 6 *Summary of demographic background*

Item	Frequency	Percentage (%)
Gender		
Male	66	43.4
Female	86	56.6
Total	**152**	**100.0**
Age		
20-30 years old	72	47.4
31-40 years old	60	39.5
41-50 years old	13	8.6
51 years old and above	7	4.6
Total	**152**	**100.0**
Education level		
SPM/STPM/Diploma	50	32.9
Bachelor's Degree	69	45.4
Master's Degree	14	9.2
Doctoral Degree	6	3.9
Other	13	8.6
Total	**152**	**100.0**
Tenure in the Current Organization		
Up to 5 years	75	49.3
6-10 years	64	42.1
More than 10 years	13	8.6
Total	**152**	**100.0**
Current Role		
Managerial	67	44.1
Non-Managerial	85	55.9
Total	**152**	**100.0**

4.4 Descriptive Analysis for Green HRM

Table 7 shows the level of Green HRM is high. The statement "My organization evaluates an employee's contributions to environmental management improvement" had the highest mean score, at 4.06 with a standard deviation of 1.063. On the other hand, the statement "My organization establishes environmental objectives that each employee must accomplish" got the lowest mean score of any of the statements, with a mean score of 3.91 and a standard deviation of 1.164. In conclusion, with a standard deviation of 1.1196, the total average mean score for Green HRM was 3.975, indicating it belongs to the high central tendency level. Thus, the level of Green HRM is high among employees in manufacturing sector.

Table 7 *Green HRM*

No.	Item/ Statement	Mean	Std. Deviation	Level
Green Training (GT)				
1.	My organization has a continuous environmental training program.	3.99	1.119	High

2.	Environmental training is a priority for my organization when compared to other types of training.	4.03	1.048	High
3.	In my organization, environmental training is viewed as an important investment.	3.93	1.140	High
Green Performance Appraisal (GPA)				
4.	My organization establishes environmental objectives that each employee must accomplish.	3.91	1.164	High
5.	My organization evaluates an employee's contributions to environmental management improvement.	4.06	1.063	High
6.	Employee environmental performance appraisals are recorded by the company.	3.99	1.113	High
Green Reward (GR)				
7.	Employees in my organization are financially rewarded for their performance in environmental management issues.	3.93	1.166	High
8.	Employees who contribute to environmental management improvements are publicly recognized by the company.	3.96	1.144	High

4.5 Descriptive Analysis for Employee Green Creativity

Table 8 indicates that the level of employee green creativity is high. The highest mean score is 4.06, and the standard deviation is 1.117. The statement "I can share green-related creative knowledge and skills with others" got the highest mean score. However, with a mean score of 3.88 and a standard deviation of 1.127, the statement "I can realize high-quantity novel and useful, green-related ideas" got the lowest mean score of all the statements. In conclusion, this question shows a high degree of agreement with the employee green creativity-related questions, suggesting that they belong to the high central tendency level, with a total average mean score of 3.98 and a standard deviation of 17.595. Thus, the level of employee green creativity is high among employees in the manufacturing sector.

Table 8 *Employee Green Creativity*

No.	Item/ Statement	Mean	Std. Deviation	Level
	Green Creative Motivation (GCM)			
1.	It makes me feel accomplished to engage in green-related creative works.	3.90	1.200	High
2.	It makes me feel satisfied to engage in green- related creative works.	3.97	1.085	High
3.	It is a great honor for me to engage in green- related creative works.	4.05	1.076	High
4.	I consider engaging in green-related creative works to be an important activity.	4.05	1.053	High
	Green Creative Thinking (GCT)			
5.	I can fluently think about green-related creative problems.	4.03	1.104	High
6.	I can flexibly think about green-related creative problems.	4.05	1.112	High
7.	I can elaborately think about green-related creative problems.	3.96	1.144	High
8.	I can lastingly think about green-related creative problems.	3.96	1.054	High
	Green Creative Behavior (GCB)			
9.	I can effectively cooperate with others for green-related creative works.	3.95	1.091	High
10.	**I can share green-related creative knowledge and skills with others.**	**4.06**	**1.117**	**High**
11.	I can arouse others' green-related creative enthusiasm.	3.89	1.105	High
12.	I can rapidly gain information on green- related creative works.	3.90	1.200	High
	Green Creative Outcome (GCO)			
13.	I can swiftly realize novel and useful green- related ideas.	3.99	1.073	High
14.	**I can realize high-quantity novel and useful green-related ideas.**	**3.88**	**1.127**	**High**
15.	I can realize high-quality novel and useful green-related ideas.	4.00	1.023	High
16.	I can realize green-related novel and useful ideas with great value.	4.04	1.067	High
	Total average score	**3.98**	**17.595**	**High**

4.6 Normality Test

Table 9 shows each variable's significance level under the Kolmogorov-Smirnov and Shapiro-Wilk tests. The data are not normally distributed, as seen by the significant values of $p < 0.05$ for the variables Green HRM and employee green creativity. To achieve the study's goals, the researcher had to apply Spearman's rho correlation test to both the independent and dependent variables.

Table 9 *Test of Normality*

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Green HRM	.332	15	.001	.769	15	.001
Employee Green Creativity	.297	15	.001	.822	15	.001

a. Lilliefors Significance Correction

4.7 Correlation Analysis

Table 10 represents the result of the correlation analysis between Green HRM and employee green creativity. Based on the analysis, the correlation coefficient is r = 0.716, with a significant value of p= 0.001, less than 0.01. This indicates a high and positive correlation between Green HRM and employee green creativity. Therefore, Green HRM is significantly associated with employee green creativity.

Table 10 *Correlation analysis between Green HRM and employee green creativity*

			Green HRM	Employee green creativity
Spearman's rho	Green HRM	Correlation Coefficient	1.000	.716**
		Sig. (2 tailed)	.	.001
		N	152	152
	Employee green creativity	Correlation Coefficient	.716**	1.000
		Sig. (2 tailed)	.001	.
		N	152	152

5. Conclusion

The first objective of this study is to determine the level of Green HRM among employees in manufacturing sector. The findings indicated a high level of Green HRM among employees in manufacturing sector, with a total average mean score of 3.975. The approaches of green training, green performance appraisals, and green reward systems were widely implemented. The findings are consistent with the study of Malik *et al*. (2021), who highlighted that structured HRM practices are vital in ensuring sustainability and employee engagement. Jabbour and Renwick (2018) also indicated the role of Green HRM in aligning strategies with environmental objectives. In this regard, the manufacturing firms in Selangor have given priority to Green HRM to enhance organizational performance and environmental sustainability. This finding further strengthens the increasing call for the integration of green initiatives within human resource policies.

The second objective of this study is to determine the level of employee green creativity among employees in manufacturing sector. The analysis showed a high level of employee green creativity, with a total average mean score of 3.98. Employees performed well on the dimensions of green creative motivation, green creative thinking, green creative behavior, and green creative outcomes. These findings support Maitlo *et al*. (2022) mentioned that supportive organizational environments also help in empowering employees for the purposes of eco-innovation,

hence connecting their intrinsic motivation to generating effective solutions. Taha and Abbas (2023) further maintained that green creativity serves as a bridge to connect environmental ethics with competitive rewards within organizations. It will not only encourage the culture of innovation but also enhance the performance of organizations with their resource efficiency for overall sustainability. The high levels of creativity manifested by the employees show the effectiveness of organizational practices in supporting eco- innovation for better sustainability outcomes in the manufacturing sector.

The third objective of this study is to identify the relationship between Green HRM and employee green creativity among employees in manufacturing sector. The correlation analysis showed a high and positive correlation between Green HRM and employee green creativity. These results supported that the implementation of Green HRM, such as green training and green reward, is significantly related to developing a creative green sustainable workforce. This finding is consistent with Huo *et al*. (2020) on Chinese coal enterprises found that top management's commitment to human resource management promotes green creativity through Green Human Resource Management (GHRM). According to social information processing theory, GHRM fosters a green environment by encouraging green knowledge and creative behaviors (Song, 2021). Green Human Resource Management (GHRM) combines environmental management and human resource practices to achieve strategic goals and improve performance by encouraging green hiring, training, performance management, and rewards, cultivating a green culture, and aligning personal and organizational sustainability goals (Roscoe, 2019; Tang *et al*., 2018; Chen & Boiral, 2013; Ghouri, 2020).

These findings combined reveal that Green HRM significantly contributes to increasing employee green creativity. The fact that the results are aligned with those from previous studies reassures their reliability, and the localized insights offer relevance to the Malaysian manufacturing context (Munawar *et al*., 2022; Ahmad *et al*., 2022). By demonstrating the critical link between Green HRM and employee green creativity, this research study contributes to the broader understanding of how human resource strategies may be leveraged by organizations to meet both environmental and innovation goals.

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Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

Author Contribution

The authors confirm contribution to the paper as follows: ***study conception and design:*** *Wong Mei Jia and Eta Wahab;* ***data collection:*** *Wong Mei Jia and Eta Wahab;* ***analysis and interpretation of results:*** *Wong Mei Jia and Eta Wahab;* ***draft manuscript preparation:*** *Wong Mei Jia and Eta Wahab and R.C. All authors reviewed the results and approved the final version of the manuscript.*

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