International Journal of Research in Human Resource Management

E-ISSN: 2663-3361
P-ISSN: 2663-3213
IJRHRM 2024; 6(2): 108-119
www.humanresourcejournal.com
Received: 22-07-2024
Accepted: 05-08-2024

Ali Saud Bisheen
Department of Business Administration, College of Administration and Economics, Al-Muthanna University, Samawah, Iraq

Corresponding Author:
Ali Saud Bisheen
Department of Business Administration, College of Administration and Economics, Al-Muthanna University, Samawah, Iraq

Green human resources management practices and its role in achieving competitive excellence through mediating role of environmental innovation

Ali Saud Bisheen

DOI: https://doi.org/10.33545/26633213.2024.v6.i2b.205

Abstract
The current study aimed to examine the relationship of association and influence between green human resource management practices and competitive excellence through the mediating role of the environmental innovation variable. The green human resource management practices variable was measured in light of the dimensions (green recruitment and selection, green training and development, green compensation management, green health and safety, green job design, green labor relations, green performance management), and the environmental innovation variable with its dimensions (environmental product innovation and environmental process innovation), while the competitive excellence variable was one-dimensional. The sample was selected randomly if the sample number reached (811) individuals working in the manufacturing sector in Al Muthanna-Iraq. To achieve the study objectives, the researcher designed a questionnaire for data collection. The ready-made statistical programs were used to analyze the questionnaire, namely (Spss, Amos and Excel). The study adopted the descriptive approach to answer the main question of the research, which states (the role of green human resource management practices in achieving competitive excellence through environmental innovation?). The researcher reached a set of conclusions, the most important of which is that there is an indirect impact relationship between human resource management practices and competitive excellence through environmental innovation, in addition to presenting a set of recommendations, the most important of which is calling on the management of the factories under study to design environmentally friendly jobs, attract and test their employees, train them to preserve the environment, and enhance the role of environmental responsibility.

Keywords: Green human resource management practices, Competitive excellence, Environmental innovation, manufacturing sector in Iraq

1. Introduction
Organizations, with their diverse activities, structures, and characteristics, must strive for competitive excellence in the goods or services they offer. In today's rapidly evolving and uncertain business landscape, it is crucial for organizations to adapt, expand, and reach their objectives. A successful strategy needs a unique, sustainable competitive edge that sets it apart from competitors. This competitive excellence can stem from specific organizational practices, cost-effective high-quality production, or capturing a significant market share. And embracing green HRM practices has become essential for organizations, aligning with the global shift towards environmental conservation. Also Researchers and scientists worldwide advocate for innovation that prioritizes environmental sustainability, eco-friendly product development, and compliance with stringent environmental regulations to minimize pollution levels.
Based on the above, the problem of the current research to examine the impact of (GHRMP) on attaining competitive excellence via environmental innovation. The study comprised four main sections: the first outlined the research methodology, the second delved into the theoretical framework of the variables, the third focused on the research implementation and statistical analyses, and the final section presented conclusions, recommendations, and references.

Research problem
The manufacturing sector is one of the most crucial economic sectors that countries,

including Iraq, rely on. However, this sector significantly contributes to environmental changes and pollution through factory operations. Therefore, the primary focus of this research is to investigate the role of green human resource management practices in achieving competitive excellence through environmental innovation. This research will address the following sub-questions:

1. Do human resource management practices influence the attainment of competitive excellence?
2. Are human resource management practices indirectly impacting the achievement of competitive excellence via environmental innovation?
3. Do employees possess an environmental mindset that empowers them to recognize sources of pollution and environmental alterations?

Significance of research

1. Green human resource management practices have received insufficient research. Attention lately many global organizations are increasingly inclined towards these practices that prioritize environmental considerations.
2. Aiding in clarifying the connection between green human resource management practices and competitive advantage, as well as the correlation between environmental innovation and competitive success.
3. Enlightening stakeholders on the significance of present research variables and the contemporary administrative approaches embraced by international organizations to achieve a competitive edge.

Research objectives

1. Establish the correlation and impact among the variables examined in the sampled organizations.
2. Discover recent research findings related to the variables under investigation.
3. Assess the extent of availability of research variables within the organizations studied.

Research hypotheses

1. Correlation hypotheses

A. (Statistically significant correlation exists between green human resources management practices and competitive excellence).
B. (Statistically significant correlation exists between human resources management practices and environmental innovation).
C. (Statistically significant correlation exists between environmental innovation and competitive excellence).

2. Impact hypotheses

A. Statistically significant effect exists between green human resources management practices and competitive excellence.
B. Statistically significant effect exists between green human resources management and environmental innovation.
C. An indirect statistically significant effect exists between green human resource management practices and competitive excellence through environmental innovation.

Research Plan Hypothetical

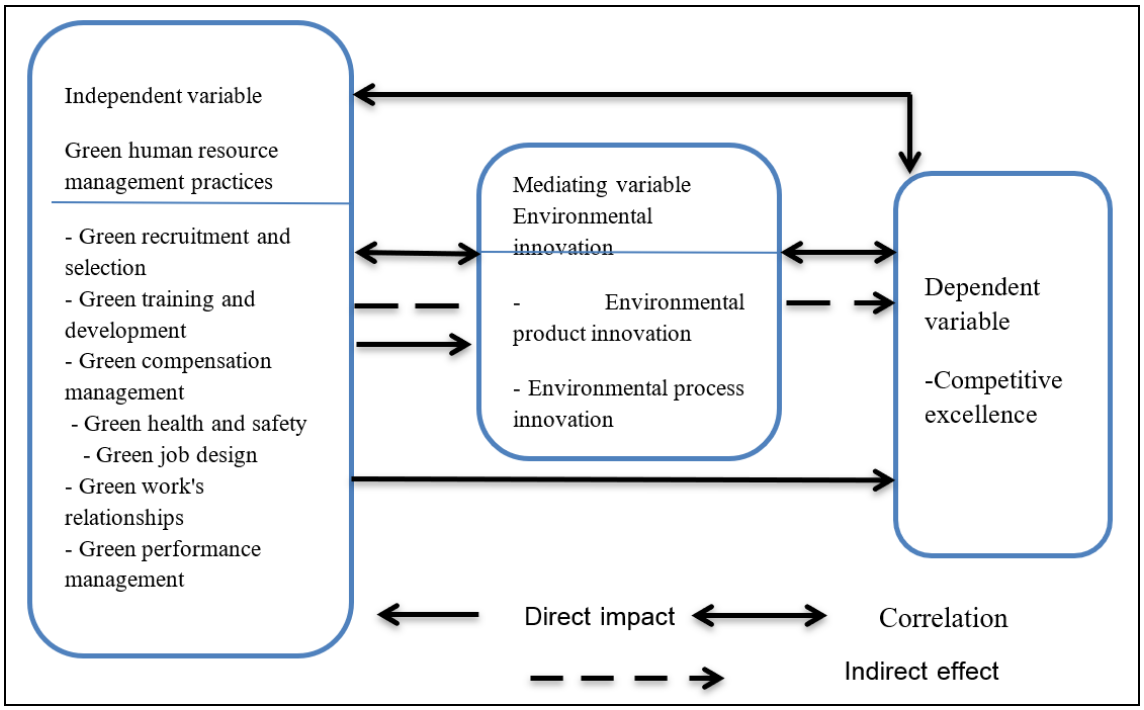

Fig 1: Hypothetical diagram of the research

Research population and sample

The research community was represented by a group of factories that work in the transformational industries in Al-Muthanna Governorate and from the public and private sectors, namely (Arab Integration Factory, Al-Muthanna Cement Factory, and the National Asphalt Production Factory). The size of the community was 170 working individuals, and the research sample was chosen randomly and numbered 118 individuals. A factor based on what was mentioned by researchers (Krejcie & Morgan, 1970:608) [16].

The concept of green human resources management

Numerous organizations globally implement green human resources management practices. These practices significantly contribute both academically and practically to the field of human resources management. Green human resources management has emerged as a research area in organizational studies since the 1990s. According to (Arulrajah *et al*. 2015: 2) [8] and (Arulrajah *et al*., 2016:155) [7], the essence of green human resources management lies in the environmental (green) orientation of all human resources management (HRM) functions and practices at all organizational levels. This concept involves reevaluating the fundamental principles of managing human resources, aligning their objectives, functions, operations, activities, and strategies in an eco-friendly manner to promote environmental sustainability. The goal is to foster environmentally responsible individuals in the organization for the benefit of themselves, society, the environment, and the business. Highlights (Mishra 2017:763) [20] that green human resources management is part of the green management philosophy, investigating human behavior's role in environmental management. This involves establishing green policies, practices, and organizational systems to motivate employees to work in ways that benefit individuals, society, the environment, and businesses.

Green human resources management is one of the various tools adopted by contemporary organizations to proactively address environmental issues, as it is considered one of the most important necessities for the successful implementation of green strategies and environmental management practices. The concept of human resources management is evolving alongside the broader literature related to sustainable development, and recent studies have linked Human resources management with different aspects of environmental management and environmental performance (Ren *et al*., 2018:774) [24]. (Shahriari *et al.*, 2019:177) [28] pointed out that green management's focus on protecting the environment in light of preserving water, air, and soil, and using clean energies and renewable natural resources, will create great opportunities to achieve savings in the costs of goods and services and reduce negative and destructive impacts on the environment. Also, individuals tend to work in such organizations and feel happy because they are environmentalists. Moreover, organizational strategies for environmental management and sustainable development will succeed when they are well aligned with human resources practices. (Yong *et al.,* 2004:2020) [30] added that the process of integrating human resources management with green practices has a major role in enhancing the sustainability of the organization, as it is considered one of the important strategies that can reduce the potential environmental impacts of the organization and make the business more sustainable.

Dimensions of (GHRM)

The dimensions of green human resources management mentioned by the researcher (Shah, 2019:778) [27] were relied upon, which are (green recruitment and selection, green training and development, green compensation management, green health and safety, green job design, green work relations, green performance management).

1. Green Recruitment and Selection: Green Recruitment and Selection (GRS) is viewed as an important component of green human resources practices, as the green awareness of candidates is the fundamental aspect of green recruitment and selection, and involves personal factors that enable the achievement of organizational environmental goals, such as green awareness, and conscientiousness, acceptance of candidates (Mwita & Kinemo, 2018:38) [21].
2. Green training and development: Green training and development practices are considered an economical and environmentally friendly approach to enhancing green value. stated (Andjarwati *et al.,* 2019:95) [5] green training and development practices are an important element in green human resources management, which is the process of designing education, creating awareness among employees, and integrating goals and environmental sustainability goals in the organization's broader agenda
3. Green compensation management: Green compensation is a form of financial and non-financial compensation for green environmental behavior carried out by working individuals (Silvester *et al.,* 2019:5). (Ardiza *et al.,* 2021:15) pointed out that green compensation and rewards are a system of financial and non-financial rewards that aims to attract, retain and motivate employees to contribute to achieving green environmental goals.
4. Green health and safety: Green health and safety, is expected to lead to environmental, economic and social outcomes, has been a topical issue in organizations (Onubi *et al.,* 2020:640). (Onubi *et al.,* 2020:735) defined green health and safety as a practice or process characterized by continuous changes that aim to improve and protect the natural environment, or the general health and well-being of working individuals through efficient use of resources.
5. Green job design: Since the complexity of job design motivates individuals towards achieving higher goals, what if they were reached using environmentally friendly methods embedded in green HR practices (Ihsan *et al.,* 2021:22) [13]. (Opatha *et al.,* 2023:5) [22] Added that organizations are making efforts to be socially appreciated in order to attract and retain potential investors, which requires improving the organization's structure to align it with the strategic green vision.
6. Green work relations: This is the process by which working individuals participate in improving the quality of work life and solving environmental problems (Abd-elmonem *et al.,* 2022:115) [1]. (Seyedein & Mesbahi, 2020:190) [26]. Emphasized that the relationships that are established at work between individuals are necessary in implementing the organization's environmental management plans and programs, as such relationships may support the green activities proposed by the administration.
7. Green performance management: Green performance management is of great importance as working individuals are punished and rewarded based on their commitment to environmental values (Martins *et al.,* 2021:55) [19] and (Jamal *et al.,* 2021:32) [15] indicated that organizations conduct evaluations Based on commitment to green standards and practices that lead to survival and sustainability and also create a positive image for organizations to obtain more sustainable performance by repeating the knowledge of working

individuals about green environmental aspects.

The concept of competitive excellence

Competitive excellence has a direct, significant and positive impact on the organization's performance, as the competitive excellence that the organization has in light of providing a variety of high-quality, low-cost products enables the organization to survive in the highly competitive labor market and continue to grow and achieve profits (Palandeng *et al.*, 2016: 1175) [23]. (Darmanto *et al.*, 2017:41) [10] added that an organization's marketing performance is affected by the extent to which it possesses the organization's competitive distinction in the labor market, as the high or low level of marketing performance is determined by the strong or weak level of competitive distinction, and this competitive distinction affects the overall performance of organizations. (Santos *et al.*, 2018:349) [25] pointed out that today's global market is characterized by customer demands, increased competitiveness, and environmental and social responsibility challenges that organizations need to address. The "Deming Cycle" represents a tool for excellence with the aim of reducing errors, improving quality, and reducing costs. Quality standards and competitive excellence that helped to establish Achieving changing market and customer requirements.

In their work, organizations often seek to obtain competitive distinction in order to control and achieve goals by competing with other organizations, especially in global markets that witness a very complex and changing competitive environment (Al-Ebrahemy, 2019:15) [4]. (Johnson, 2020:205) [14] stressed that organizations can Achieving competitive excellence through the organization's reputation and achieving customer satisfaction and organizational commitment, which contributes positively to financial performance. (Herianti *et al.*, 2021:175) [12] added that achieving vertical or horizontal integration in supply chains can have a significant impact on the organization obtaining a sustainable competitive excellence that helps it increase market access and achieve long-term strategic goals. (Mahendra, 2023:512) [18] added that technological complexity can be optimally exploited to achieve significant superiority for the organization over other organizations through technological innovation, which contributes significantly to reducing costs, increasing quality, and reducing time and effort.

The concept of environmental innovation

Multiple studies in the fields of organizational theory, strategic management, and marketing have shown that innovation is the primary factor that leads to organizational growth. Innovation is seen as a way for organizations to leverage their core competencies and convert them into performance outcomes that are crucial for achieving success (Doran & Ryan, 2016:103) [11]. According to Barbieri *et al.* (2016: 599) [9], the innovation process is widely recognized as a crucial factor for competitiveness and is deeply embedded in an organization's structures, processes, products, and services. Conversely, Liao (2018:1111) [17] stated that the likelihood of encountering risks in innovation rises in the presence of environmental issues such as high energy consumption, environmental pollution, severe air pollution, soil pollution, water pollution, desertification, resource depletion, and environmental imbalance.

Eco-innovation is a form of innovation that takes into account both external influences, aiming to enhance the competitive advantage of enterprises while simultaneously mitigating negative impacts on the environment. Therefore, it is crucial for all enterprises to expedite the progress of eco-innovation, as stated by Andries and Stephan (2019:38) [6]. Aldieri *et al.* (2020: 495) [3] asserted that numerous prior studies have examined the factors that drive environmental innovation in organizations. These factors can be categorized into two groups: external factors, which consist of various actors that can influence organizational innovation, such as environmental policies, emissions trading, stakeholders, customer demands, and market requirements. The second group comprises internal elements that primarily encompass the fundamental prerequisites and attributes of the company, such as human resources management, organizational governance, and the technological trajectory or the technology employed by the firm.

As for the dimensions of environmental innovation, (Skordoulis *et al.*, 2020:203) [29] pointed to two dimensions that are most famous among researchers and most widely used: innovation of environmental products and innovation of environmental processes. Product innovation means the process of producing products that are less polluting to the environment on the one hand, and on the other hand have better performance, higher quality, safer, and lower costs. (Aibar-Guzmán et, 2021:5) added that process innovation is the process of organizing production processes that leads to reducing environmental impact and pollution, as well as increasing resource productivity such as increasing process productivity, reducing downtime through more precise monitoring and maintenance, and saving materials. , better use of by-products, lower energy consumption during the production process, reduced material storage and processing costs, conversion of waste into valuable forms, and reduced waste disposal costs.

Descriptive Statistics and Graphical Analysis

1. Research scale, statistical coding, and reliability testing

Table (1) shows the research variables, their sub-dimensions, the number of items, and the sources approved for the measure for each variable, as well as the Cronach alpha coefficient, which is one of the most important and famous measures used in measuring the stability of questionnaires in human and social research, as stability is considered acceptable if its value exceeds (70%), and it is considered a percentage Stability is good if it reaches (80%) or more.

Table 1: Measures the variables, their dimensions, and the reliability coefficient

Variables	Dimensions	Number of items	Statistical code	Source	Cronbach's alpha coefficient
Independent variable GHRSM	Green job design	4	GJD	(Shah, 2019:778) [27]	0.924
	Green recruitment and selection	3	GSR		
	Green training and development	4	GDT		

	Green performance management	6	GPAM		
	Green compensation management	5	GCR		
	Green safety and health	3	GSHM		
	Green work's relationships	3	GWR		
Mediating variable (environmental innovation XY)	Environmental product innovation	9	X	(Skordoulis *et al.*, 2020:203) [29]	0.862
	Environmental process innovation	6	Y		
The dependent variable is competitive excellence (CE)	single item	3	CE	(Zardini *et al.*, 2016:1750) [31]	0.710

2. Honesty tests (Virtual and Confirmatory)

To ensure the apparent validity and content validity of the questionnaire, the researcher turned to a group of specialized experts to present the questionnaire in its initial form to them, and to determine the extent to which the sub-dimensions represent the main variables, the extent to which the measurement items represent the dimensions, and the clarity of each paragraph in terms of intellectual content and wording, and to correct the statements that should be corrected. The researcher made the necessary amendments and changed some of the wording paragraphs that the arbitrators saw as necessary to reformulate to be more clear and consistent with the nature and environment of the application.

As for confirmatory validity, the researcher tended to use confirmatory factor analysis, which is a type of structural equation modeling that enables the researcher to verify the validity of the structure of the internal factors of the approved measurement scales. Two indicators are considered to ensure confirmatory validity. The first is the extent of saturation of the dimensions on its items, which must be that equals (0.40). The second is the conformity quality indicators (CMIN/DF, CFI, IFI, RMSEA), which the closer its value is to (1), the better.

Figure (2) shows the confirmatory factor analysis of the human resources management practices variable, as the (GHRSM) scale includes (7) sub-dimensions: (green job design, 4 items, green recruitment and selection, 3 items, green training and development, 4 items, green performance management and evaluation, 6 items ,Green Rewards and Compensation 3 items, Green Health and Safety Management 3 items, Green Work Relations 3 items) and that the parameter estimates have exceeded (0.40) and are all significant as evidenced by the fact that the Critical Ratio (C.R.) shown in the table (2) is all significant at the level of (0.01). This validates the confirmatory validity of the variable, indicating that the hypothesized structural model aligns well. The (GHRSM) variable is measured across seven dimensions with a total of 28 items.

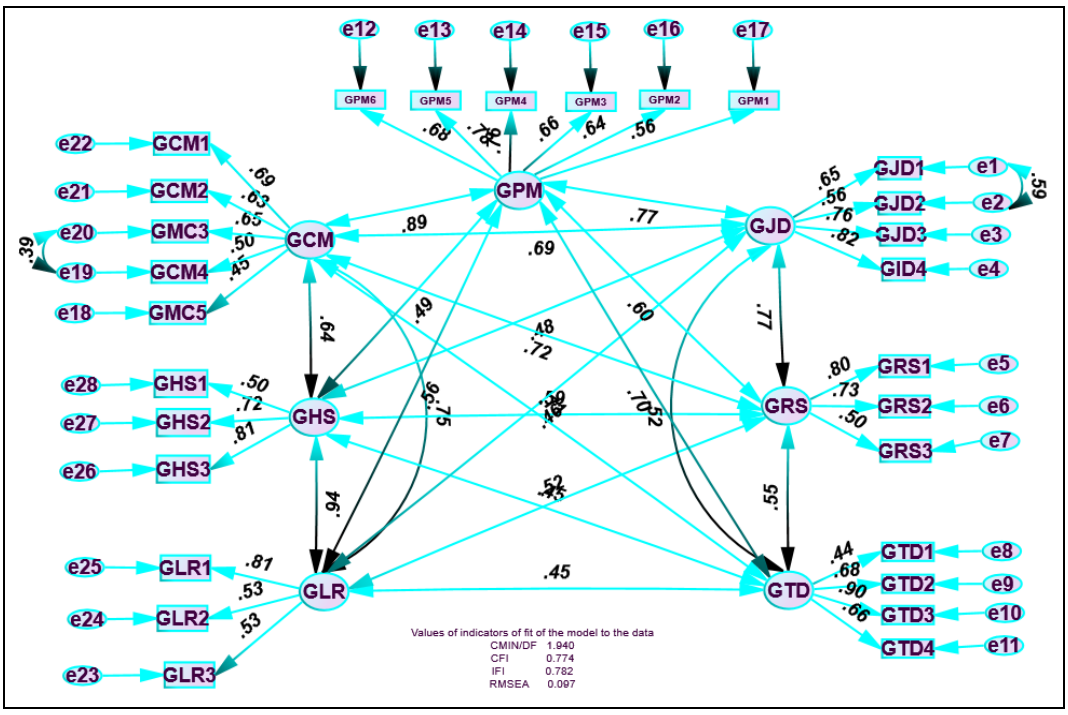

Fig 2: Confirmatory factor analysis of the variable (GHRSE)

Table 2: Confirmatory structural validity parameters for the GHRSE scale

PATH			Estimate	S.E.	C.R.	P
GJD1	<---	GJD	1.000			
GJD2	<---	GJD	.781	.105	7.451	***
GJD3	<---	GJD	1.016	.165	6.164	***
GID4	<---	GJD	1.230	.189	6.500	***
GRS1	<---	GRS	1.000			
GRS2	<---	GRS	.827	.121	6.821	***

GRS3	<---	GRS	.602	.129	4.669	***
GTD1	<---	GTD	1.000			
GTD2	<---	GTD	1.586	.398	3.983	***
GTD3	<---	GTD	2.166	.508	4.267	***
GTD4	<---	GTD	1.555	.394	3.943	***
GPM6	<---	GPM	1.000			
GPM5	<---	GPM	1.199	.173	6.920	***
GPM4	<---	GPM	1.007	.148	6.792	***
GPM3	<---	GPM	1.052	.176	5.967	***
GPM2	<---	GPM	.979	.169	5.802	***
GPM1	<---	GPM	.857	.168	5.097	***
GMC5	<---	GCM	1.000			
GCM4	<---	GCM	1.176	.334	3.520	***
GMC3	<---	GCM	1.611	.398	4.044	***
GCM2	<---	GCM	1.503	.378	3.977	***
GCM1	<---	GCM	1.875	.452	4.145	***
GLR3	<---	GLR	1.000			
GLR2	<---	GLR	1.009	.251	4.023	***
GLR1	<---	GLR	1.350	.266	5.086	***
GHS3	<---	GHS	1.000			
GHS2	<---	GHS	.809	.113	7.130	***
GHS1	<---	GHS	.575	.121	4.739	***

Figure (3) shows the confirmatory factor analysis of the environmental innovation variable, as it includes a measure of environmental innovation with two sub-dimensions (innovation of environmental products, 9 items, and innovation of environmental processes, 6 items), and the parameter estimates exceeded (0.40) except for the items (X9, Y4, Y5, Y6) has been deleted, and this indicates its weak representation of the dimension to which it belongs, which necessitates deleting them all from the scale. These estimates are all significant, as evidenced by the fact that the critical ratio (C.R.) shown in the table (3) is all a significant value at the level of (0.01). This confirms the confirmatory validity of the variable, and thus The assumed structural model has achieved a high level of conformity, which confirms that the environmental innovation variable is measured in two dimensions and with 11 items.

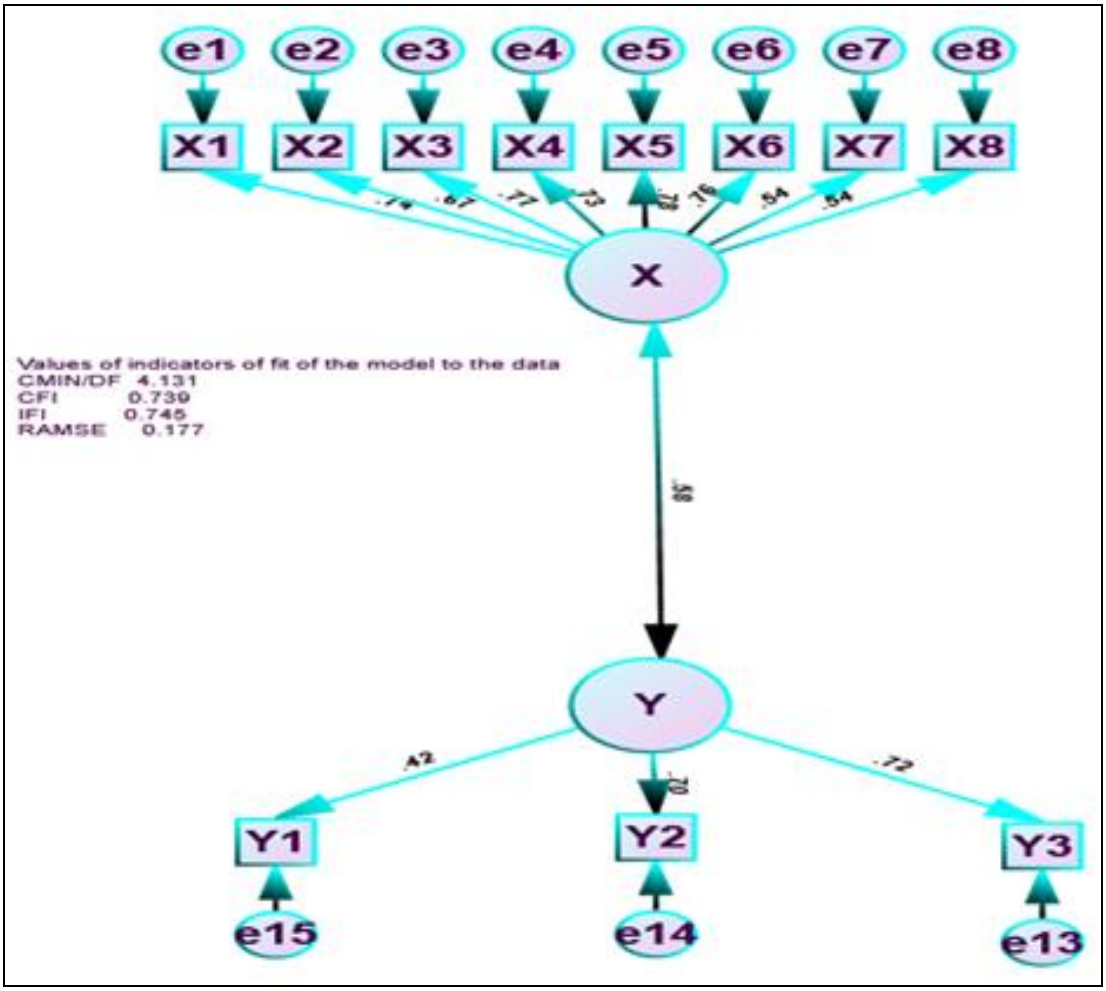

Fig 3: Confirmatory factor analysis of the environmental innovation variable

Table 3: Confirmatory structural validity parameters for the environmental innovation variable scale

PATH			Estimate	S.E.	C.R.	P
X1	<---	X	1.000			
X2	<---	X	.911	.140	6.517	***
X3	<---	X	1.115	.149	7.501	***
X4	<---	X	1.034	.144	7.169	***
X5	<---	X	1.037	.136	7.607	***
X6	<---	X	1.061	.143	7.414	***
X7	<---	X	.625	.121	5.163	***
X8	<---	X	.712	.137	5.199	***
Y1	<---	Y	.609	.183	3.328	***
Y3	<---	Y	1.103	.250	4.411	***
Y2	<---	Y	1.000			

Figure (4) shows the confirmatory factor analysis of the competitive excellence variable, as it includes a one-dimensional measure of competitive excellence with a number of items of 3 items, and the parameter estimates have exceeded (0.40), and they are all significant, as evidenced by the fact that the critical ratio (C.R.) shown in the table (4) is all a significant value at the level (0.01) This confirms the confirmatory validity of the variable, and thus the assumed structural model has achieved a high level of conformity, which confirms that the competitive excellence variable is unidimensional and has 3 items.

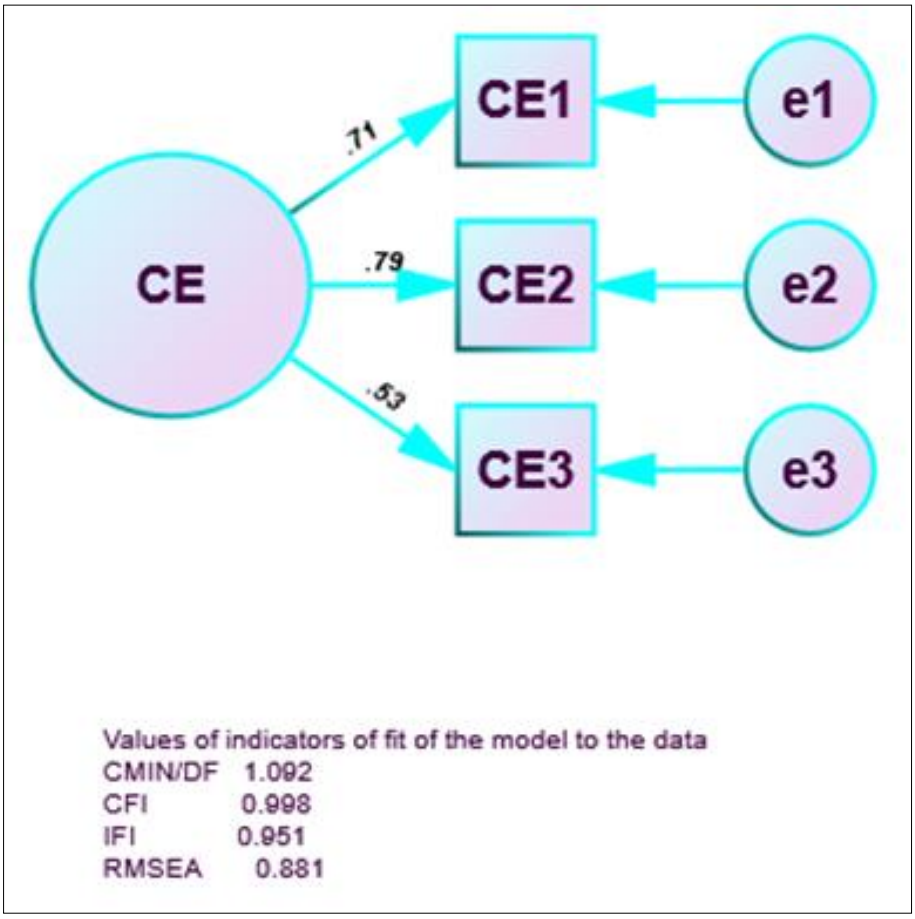

Fig 4: Confirmatory factor analysis of the competitive excellence variable

Table 4: Confirmatory structural validity parameters for the competitive excellence variable scale

PATH			Estimate	S.E.	C.R.	P
CE1	<---	CE	1.000			
CE2	<---	CE	1.192	.283	4.210	***
CE3	<---	CE	.820	.195	4.193	***

3. Descriptive analysis of research variables

A. Descriptive analysis of the GRAM variable

Table (5) presents the descriptive statistics and the overall structure of the dimensions of the green human resources management practices variable in practice. It indicates the level of interest of the participants in the researched sample in these dimensions, listed in the following order: GTD, GLR, GHS, GRS, GMC, GJD, and GPM.

The main GHRSM variable had a general weighted arithmetic mean of 2.14 and a standard deviation value of 0.529, indicating the dispersion of the sample's answers from its arithmetic mean. The relative coefficient of variation was 24.70%, and the achieved response intensity was 42.79%. Therefore, it obtained a "low" level of response, indicating that this variable had a low degree of

significance based on the responses of the sample participants.

Table 5: Descriptive statistics for the GHRSM variable

Variable	N	Mean	Std. Deviation	Response intensity	Coefficient of variation
GJD	101	2.09	0.778	41.78	37.25
GRS	101	2.12	0.725	42.44	34.18
GTD	101	2.27	0.753	45.50	33.10
GPM	101	2.08	0.649	41.52	31.27
GMC	101	2.10	0.633	42.10	30.09
GHS	101	2.16	0.719	43.17	33.31
GLR	101	2.21	0.751	44.22	33.96
GHRSM	101	2.14	0.529	42.79	24.70

B. Descriptive analysis of the environmental innovation variable

Table (6) presents the descriptive statistics and the overall organization of the dimensions of the environmental innovation variable in practice. It displays the level of interest of the participants in the studied sample in these dimensions, listed in the following order: dimension Y, dimension X.

The main environmental innovation variable had a weighted arithmetic mean of 2.26 and a standard deviation of 0.561, indicating the spread of the sample's responses from the mean. The relative coefficient of variation was 24.76%, and the response intensity was 45.28%. Therefore, it obtained a "low" level of response, indicating that this variable had a low degree of significance based on the responses of the sample participants.

Table 6: Descriptive statistics for the environmental innovation variable

Variable	N	Mean	Std. Deviation	Response intensity	Coefficient of variation
X	101	2.22	0.661	44.42	29.77
Y	101	2.33	0.589	46.57	25.30
XY	101	2.26	0.561	45.28	24.76

C. Descriptive analysis of the competitive excellence variable

The primary indicator of competitive excellence was assessed using three items and obtained a weighted arithmetic mean of 2.23. The standard deviation value of 0.735 indicates the spread of the sample's responses from the mean, while the relative coefficient of variation of 32.98% represents the variability relative to the mean. The response intensity attained was 44.55%. Therefore, it obtained a "weak" level of response, indicating that this variable had a low degree of relevance based on the responses of the sample participants, as seen in Table (7).

Table 7: Descriptive statistics for the competitive excellence variable

Variable	N	Mean	Std. Deviation	response intensity	Coefficient of variation
CE1	101	2.14	0.872	42.77	40.78
CE2	101	2.30	0.933	45.94	40.63
CE3	101	2.25	0.963	44.95	42.86
CE	101	2.23	0.735	44.55	32.98

4. Hypothesis testing

A. Testing correlation hypotheses

The correlation relationship explains to us the correlation of the appearance of the independent variable with the dependent variable, knowing that its value statistically is limited to between 1+ to 1- . The sign that appears with the value of the correlation determines the direction of the correlation, whether it is a positive correlation or a negative correlation.

1. It is clear to us from the table (8) that there is a strong correlation with a value of (0.637), which is statistically significant. This result explains that the availability of a level of the GHRSM variable in the sample under study will inevitably lead to a good percentage of competitive excellence. The direction of this relationship is a positive direction, meaning that the emergence of the GHRSM variable requires the emergence of the competitive excellence variable. The correlation value is considered significant according to the (Sig.) indicator, which was within a significance level of (1%) as it reached (0.000), Specifically, the outcome is accompanied with a high level of confidence (99%).
   The data above confirm the first primary hypothesis, which states that there is a statistically significant association between GHRSM and competitive excellence. Within the confines of the research sample.

Table 8: Of the correlation between GHRSM and competitive excellence

		GHRSM	CE
GHRSM	Pearson Correlation	1	0.637
	Sig. (1-tailed)		0.000
	N	101	101

2. It is clear to us from the table (8) that there is a strong correlation with a value of (0.731), which is statistically significant. This result explains that the availability of a level of the GHRSM variable in the sample under study will inevitably lead to a good percentage of environmental innovation**.** The direction of this relationship is a positive direction, meaning that the appearance of the GHRSM variable requires the appearance of the environmental innovation variable. The correlation value is considered significant according to the (Sig.) indicator, which was within the (1%) level of significance as it reached (0.000), Specifically, the outcome is accompanied with a high level of confidence (99%). The data above confirm the first primary premise, which states that there is a statistically significant association between human resources management techniques and environmental innovation. Within the confines of the research sample.

Table 9: Of the correlation between GHRSM and environmental innovation

		GHRSM	XY
GHRSM	Pearson Correlation	1	0.731
	Sig. (1-tailed)		0.000
	N	101	101

3. It is clear to us from the table (9) that there is a strong correlation with a value of (0.805), which is statistically significant. This result explains that the availability of a level of environmental innovation variable in the sample under study will inevitably lead to a good percentage of competitive excellence**.**

The direction of this relationship is a positive direction, meaning that the emergence of the environmental innovation variable requires the emergence of the competitive excellence variable. The correlation value is considered significant according to the (Sig.) indicator, which was within the (1%) level of significance, reaching (0.000), Specifically, the outcome is accompanied with a high level of confidence (99%). The data shown above offer evidence for accepting the verification of the initial primary hypothesis examined, which states that there is a statistically significant association between environmental innovation and competitive excellence within the research sample.

Table 10: of the correlation between environmental innovation and competitive excellence

		XY	CE
XY	Pearson Correlation	1	0.805
	Sig. (1-tailed)		0.000
	N	101	101

B. Testing impact hypotheses

1. The structural modeling approach was used to test the direct effect relationship, which states (Statistically significant effect exists between green human resources management practices and competitive excellence). Figure (5) and table (10) were designed to determine the influence relationships and their significance between variables, The collection of data pertaining to assessing the direct impact of GHRSM on competitive excellence is illustrated by table (10) and figure (5).
   The value of the effect tested with (Beta Standardized) reached (ß = 0.64, p< .01), The value demonstrates a positive correlation between the GHRSM variable and competitive excellence, as shown by the marginal slope coefficient.
   Whenever the level of GHRSM increases by one unit, competitive excellence will increase by 64%. These values are morally significant because the critical value (C.R.) in the table (10) is 8.257, which is a significant value at p<.001. Additionally, the coefficient of determination (R2) for the variable GHRSM and Distinction was interpreted. Competitive (0.41). The GHRSM accounts for 41% of the variations seen in competitive excellence, with the other 59% attributed to unexamined factors in the research's statistical model. This confirms the acceptance of the hypothesis proposing the presence of a substantial causal link. Within the realm of GHRSM lies the pursuit of competitive excellence. According to the data provided, there is evidence supporting the acceptance of the direct effect hypothesis, which suggests a relationship between the independent variable and the dependent variable.

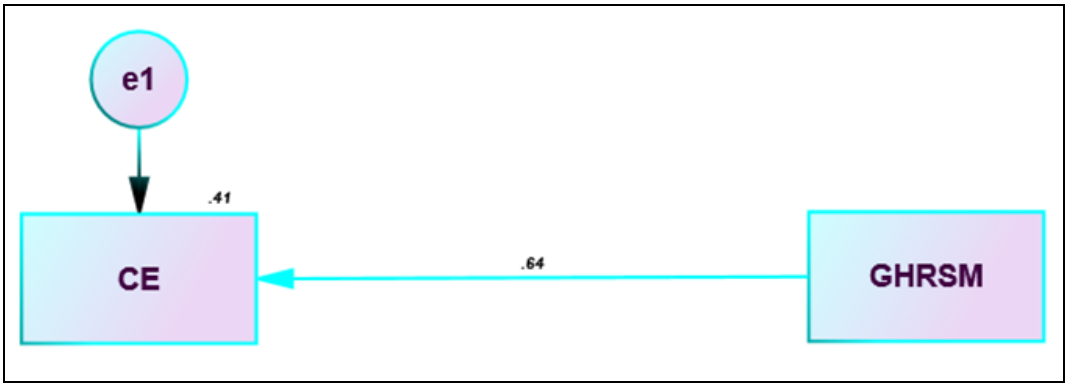

Fig 5: The direct influence relationship between green HR practices and competitive excellence

Table 11: Regression weights to test hypotheses of the direct effect of green human resource management practices on competitive excellence

Path			Estimate	S.E.	C.R.	P
CE	<---	GHRSM	.885	.107	8.257	***

2. In order to test the direct effect relationship, which states] (Statistically significant effect exists between green human resources management and environmental innovation).The figure (6) and table (11) were designed to determine the influence relationships and their significance between the variables**.**
   The table (11) and figure (6) display the results of testing the direct impact of GHRSM on environmental innovation. The effect tested, measured by the standardized beta coefficient (ß= 0.73, p< .01), indicates a positive relationship between the GHRSM variable and environmental innovation. This means that for every one unit increase in the availability of freelancers (GHRSM), there is a corresponding 73% increase in environmental innovation. The values are deemed ethically important due to the critical value (C.R.) of 10.716, as indicated in table 11, which is statistically significant at a significance level of p< .001. The coefficient of determination (R2) for the variable (GHRSM) and environmental innovation is 0.53. This means that GHRSM accounts for 53% of the changes observed in environmental innovation, while the remaining 47% is attributed to other variables not included in the statistical model of the research. This signifies the acknowledgment of the hypothesis proposing the presence of a substantial causal link. Regarding the relationship between GHRSM and environmental innovation. According to the data mentioned above, there is evidence supporting the acceptance of the direct impact hypothesis, which suggests a relationship between the independent variable and the dependent variable.

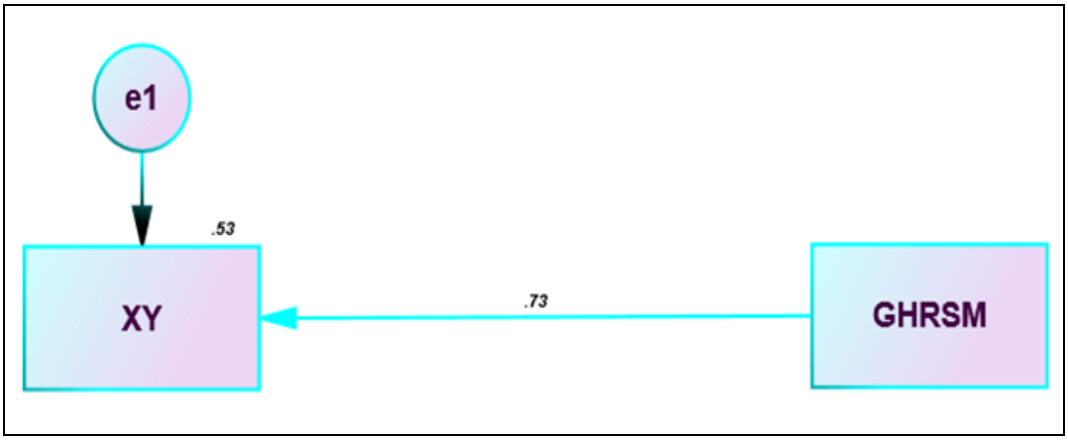

Fig 6: The direct influence relationship between green HR practices and competitive excellence

Table 12: Regression weights for testing hypotheses of the direct effect of green human resource management practices on environmental innovation

Path			Estimate	S.E.	C.R.	P
XY	<---	GHRSM	.775	.072	10.716	***

3. To examine the indirect link, this study investigates the existence of a statistically significant influence between green human resource management practices and competitive excellence through environmental innovation. Figure 7 and table 12 were created to analyze the connections between GHRSM and competitive excellence through environmental innovation. The direct effect of GHRSM on competitive excellence was found to be 0.104. The indirect effect, as measured by the Beta Standardized coefficient (ß = 0.533, p< .01), indicates a positive relationship between the GHRSM variable and competitive excellence through environmental innovation. Specifically, for every one unit increase in the availability of freelancers (GHRSM), there is a 53% increase in environmental innovation. The GHRSM table demonstrates a total effect (including both direct and indirect effects) of 0.729 on competitive excellence via environmental innovation. This value suggests that the hypothesis has been accepted. The coefficient of determination (R2) for the variable (GHRSM) and competitive excellence via environmental innovation was 0.65. The GHRSM accounts for 65% of the variations seen in competitive excellence resulting from environmental innovation. The remaining 35% can be attributed to other factors that were not included in the statistical model of the research. According to the aforementioned findings, there is evidence to support the acceptance of the indirect impact hypothesis. This hypothesis suggests that the independent variable (GHRSM) influences the dependent variable (competitive excellence) through the mediating variable of environmental innovation.

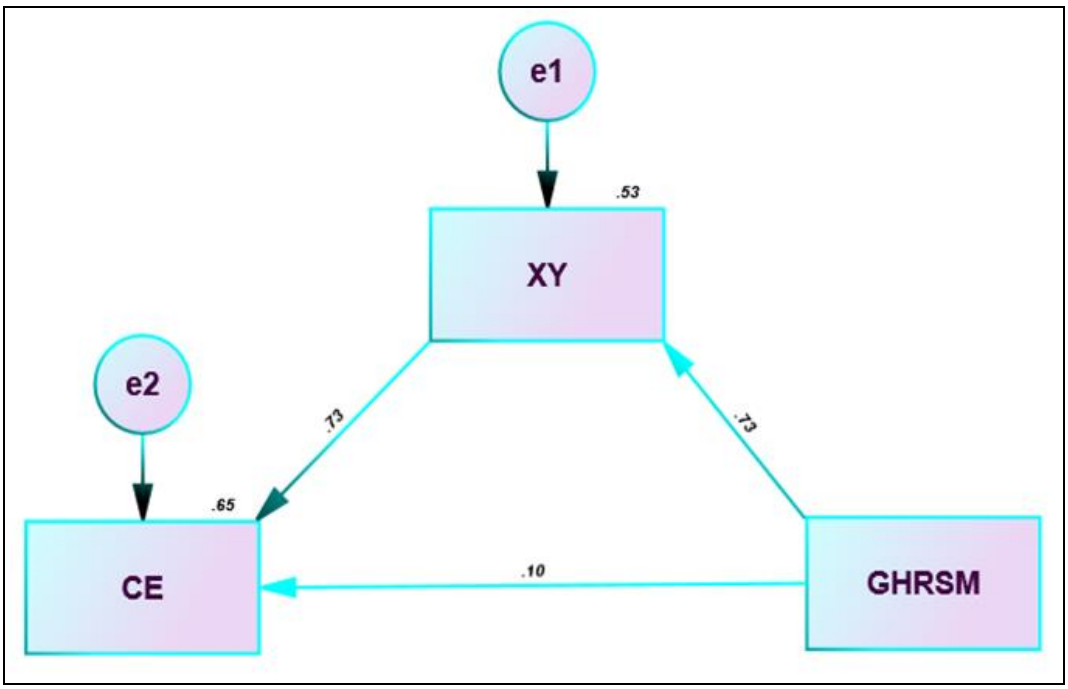

Fig 7: The indirect influence relationship between green human resources practices and competitive excellence through environmental innovation

Table 13: of direct and indirect effects between the researches variables

Paths	Direct effect	Indirect effect	Total effect	R^2
CE <--- GHRSM	0.104	0.533	0.729	0.65
CE<---XY<---GHRSM				

Conclusions

1. Based on the results of statistical analyses, the researcher concluded that there is a strong correlation between (GHRMP) and competitive excellence. It is also clear that there is a strong positive correlation between environmental innovation and competitive excellence, in addition to the existence of a correlation between human resources management practices and environmental innovation**.**
2. It became clear to the researcher that there is a direct influence relationship between the variable of human resources management practices in competitive excellence, and the existence of a direct relationship to human resources management practices in environmental innovation. In addition, the researcher concluded that there is an indirect influence relationship between human resources management practices in competitive excellence through. Environmental innovation.
3. The importance of the variable of (GHRMP) for the individuals in the research sample was weak, and this indicates that the senior management in the factories under study cares and strives to adopt and enhance this concept and attract and select working individuals who have a sense of environmental responsibility but below the level of ambitions.
4. The senior management of the factories under study supports innovations that contribute to environmental preservation by producing environmentally friendly products, as well as adopting production processes that have less environmental impact, but they did not reach what was required of them.
5. The management of the factories under study seeks to excel in its products by producing products of high quality and low cost in order to achieve sustainable competitive excellence and increase its market share, but it did not reach the required and planned level.

Recommendations

1. The management of the factories under study must design environmentally friendly jobs, attract and test their working members, train them in environmental preservation, and enhance the role of environmental responsibility through holding workshops and cooperating with universities and researchers interested in the environmental field.
2. Encouraging individuals working in the factories under research to innovate the environment by supporting new ideas that contribute to the use of raw materials in manufacturing that have a lower environmental impact and are recyclablet.
3. Calling on factory management to pay great attention to the products they provide by clarifying the importance of these products, improving and developing their quality, and spreading the culture of comprehensive quality management.
4. The researcher recommends applying the research in other service sectors, such as the health sector.
5. We recommend that factory management make greater efforts to provide support for environmentally friendly industries. Its members urged workers to take care of the environment by reducing waste and making optimal use of factory resources.

References

1. Abd-elmonem AM, Rashed SE, Hasanin AG. The relation between green human resource management strategies and organizational innovativeness among head nurses. Assiut Scientific Nursing Journal. 2022;10(32):113-125.
2. Aibar-Guzmán C, Somohano-Rodríguez FM. Do consumers value environmental innovation in product? Administrative Sciences. 2021;11(1):11-15.
3. Aldieri L, Kotsemir M, Vinci CP. The role of environmental innovation through the technological proximity in the implementation of the sustainable development. Business Strategy and the Environment. 2020;29(2):493-502.
4. Al-Ebrahemy EAA. Green human resources management and its role in achieving competitive excellence: Field study at Prince and Ghadir National Hospital in Najaf Governorate. Kufa Journal of Arts. 2019;1(39):25-35.
5. Andjarwati T, Budiarti E, Audah AK, Khouri S, Rębilas R. The impact of green human resource management to gain enterprise sustainability. Polish Journal of Management Studies. 2019;20(2):93-103.
6. Andries P, Stephan U. Environmental innovation and firm performance: How firm size and motives matter. Sustainability. 2019;11(13):35-85.
7. Arulrajah AA, Opatha HH, D. N. P. Analytical and theoretical perspectives on green human resource management: A simplified underpinning. International Business Research. 2016;9(12):153-164.
8. Arulrajah AA, Opatha HH, Nawaratne NNJ. Green human resource management practices: A review. Sri Lankan Journal of Human Resource Management. 2015;5(1):11-16.
9. Barbieri N, Ghisetti C, Gilli M, Marin G, Nicolli F. A survey of the literature on environmental innovation based on main path analysis. Journal of Economic Surveys. 2016;30(3):596-623.
10. Darmanto, Choerudin A, Rahayu BS, Wardaya S. The role of organizational change and competitive excellence in optimizing the performance with the mixture of strategy based on demography. Polish Journal of Management Studies. 2017;15(1):37-47.
11. Doran J, Ryan G. The importance of the diverse drivers and types of environmental innovation for firm performance. Business Strategy and the Environment. 2016;25(2):102-119.
12. Herianti E, Suryani A, Marundha A. Managerial ability and future banking performance: The role of book-tax differences as moderator. Journal of Accounting and Investment. 2021;22(1):173-191.
13. Ihsan H, Jamshaid F, Ramirez-Asis EDWIN, Sáenz-Rodríguez ROLANDO, Guerra-Muñoz ME, Perez-Falcon JULIANA. Nexus between green HRM

practices towards fostering green individual values. Journal of Jilin University (Engineering and Technology Edition). 2021;40(5):19-35.
14. Johnson DM. Three kinds of competitive excellence. Journal of the Philosophy of Sport. 2020;47(2):200-216.
15. Jamal T, Zahid M, Martins JM, Mata MN, Rahman HU, Mata PN. Perceived green human resource management practices and corporate sustainability: Multigroup analysis and major industries perspectives. Sustainability. 2021;13(6):30-45.
16. Krejcie RV, Morgan DW. Determining sample size for research activities. Educational and Psychological Measurement. 1970;30(3):607-610.
17. Liao Z. Environmental policy instruments, environmental innovation and the reputation of enterprises. Journal of Cleaner Production. 2018;17(1):1111-1117.
18. Mahendra MR. Effect of corporate competitive excellence, employee performance and inventory information on the resource information system (literature review). Dinasti International Journal of Management Science. 2023;4(3):509-520.
19. Martins JM, Aftab H, Mata MN, Majeed MU, Aslam S, Correia AB, Mata PN. Assessing the impact of green hiring on sustainable performance: Mediating role of green performance management and compensation. International Journal of Environmental Research and Public Health. 2021;18(11):54-74.
20. Mishra P. Green human resource management: A framework for sustainable organizational development in an emerging economy. International Journal of Organizational Analysis. 2017;25(5):762-788.
21. Mwita KM, Kinemo SM. The role of green recruitment and selection on performance of processing industries in Tanzania: A case of Tanzania Tobacco Processors Limited (TTPL). International Journal of Human Resource Studies. 2018;8(4):35-46.
22. Opatha HH, Kottawatta SP. Green HRM and green work behaviour of employees: An empirical study in a Sri Lankan tiles manufacturing company. GSJ. 2023;11(7):1-18.
23. Palandeng ID, Kindangen P, Tumbel AL, Massie JD. The effect of supply chain management on competitive advantage and firm performance. Journal of Business and Social Review in Emerging Economies. 2016;7(4):1170-1185.
24. Ren S, Tang G, Jackson SE. Green human resource management research in emergence: A review and future directions. Asia Pacific Journal of Management. 2018;35(6):769-803.
25. Santos MB, Monteiro PRR, Gonçalves MA, Camilo RD. Reference models and competitiveness: An empirical test of the management excellence model (MEG) in Brazilian companies. Total Quality Management & Business Excellence. 2018;29(3-4):346-364.
26. Seyedein S, Mesbahi M. Nurses' lived experience of green human resource management: A qualitative study. Journal of Qualitative Research in Health Sciences. 2020;9(3):188-199.
27. Shah M. Green human resource management: Development of a valid measurement scale. Business Strategy and the Environment. 2019;28(5):771-785.
28. Shahriari B, Hassanpoor A, Navehebrahim A, Jafarinia S. A systematic review of green human resource management. Environmental Protection. 2019;6(2):177-189.
29. Skordoulis M, Ntanos S, Kyriakopoulos GL, Arabatzis G, Galatsidas S, Chalikias M. Environmental innovation, open innovation dynamics and competitive advantage of medium and large-sized firms. Journal of Open Innovation: Technology, Market, and Complexity. 2020;6(4):195-224.
30. Yong JY, Yusliza MY, Fawehinmi OO. Green human resource management: A systematic literature review from 2007 to 2019. Benchmarking: An International Journal. 2020;27(7):2005-2027.
31. Zardini A, Rossignoli C, Ricciardi F. A bottom-up path for IT management success: From infrastructure quality to competitive excellence. Journal of Business Research. 2016;69(5):1747-1752.