Proceedings on Engineering Sciences

GREEN HUMAN RESOURCE MANAGEMENT AND SUSTAINABLE ENVIRONMENTAL PERFORMANCE: ASSESSING THE MEDIATING ROLE OF ENVIRONMENTAL KNOWLEDGE AND CORPORATE SOCIAL RESPONSIBILITY

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A B S T R A C T

The main purpose of this study was to investigate the impact of using green human resource management on sustainable environmental performance with respect to the mediating role of environmental knowledge and corporate social responsibility in the Iranian automotive industry. The present study was based on the purpose of an applied research and in terms of method was a descriptive-survey study. A questionnaire was used to collect research data. The statistical population of this study consisted of senior human resource managers of companies active in the automotive industry in Iran. The initial estimate showed that the total number of members of the statistical population is 143 people. After collecting data through a questionnaire, data analysis was performed using structural equation modeling. The results showed that the use of green human resource management methods has a positive and significant effect on the sustainable environmental performance of the companies under study. In addition, the sustainable environmental performance of the companies under study plays an effective mediating role. Therefore, it can be said that organizations can take steps to continuously and sustainable improvement of their environmental performance and increase the profitability of the organization by strengthening the strategies of green human resource management and paying special attention to the components of environmental knowledge and corporate social responsibility.

1. INTRODUCTION

Today, there are many concerns in the discussion of sustainable environmental performance in many industries, and the elimination of pollution and waste is proposed as a solution to improve the efficiency and effectiveness of processes (Antoni et al., 2020). For this reason, many governments, companies and heavy industries have been forced to submit environmental reports, which have a significant impact on improving the

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environmental performance of these industries (Lin & Chen, 2020). Organizational initiatives are an important factor in environmental performance to coordinate the environmental effects of organizational processes and organizational products and resources in line with environmental legal requirements (Singh et al., 2020). Climate change has led many modern studies to consider environmental performance as one of the main subfields of corporate social responsibility (Velte, 2021). On the other hand, environmental knowledge means awareness of environmental problems and solutions to solve those (Amoah & Addoah, 2021). The high level of environmental knowledge in the organization leads to a better understanding of employees of the decisions and thinking of leaders in the field of environmental issues (Su et al., 2020). In fact, environmental knowledge issues are critical to the development of organizational social responsibility (Lu & Castka, 2009). On the other hand, human resource managers who are responsible for recruiting staff and monitoring work performance are looking for new and innovative solutions to problems in the field of environmental issues (Azizi et al., 2021). Green human resource management is a new idea about employee performance that integrates all initiatives in the environmental field towards improving environmental performance and achieving sustainable performance (Yong et al., 2019). Accordingly, it can be said that human resource management plays an important role in improving environmental knowledge (Fawehinmi et al, 2020). In principle, green human resource management comes from organizations that are in favor of environmental protection, and in these organizations, the role of employees in creating a green space in the organization with appropriate environmental behaviors has been approved (Saeed et al., 2019). Thus, green human resource management enables the organization to provide a management framework so that corporate social responsibility strategies in the company become practical management measures (Úbeda-García et al., 2021). Green human resource management measures through the development of human capital, help organizations to achieve sustainable organizational development and optimal environmental management, therefore, attention to environmental management through green human resource management is increasing day by day. Is (Jaramillo et al., 2018). Green human resource management measures can increase the green behaviors of employees voluntarily and improve the company's performance in the field of environmental management (Pham et al., 2019). Past studies show that environmental knowledge affects employees' green behavior and their participation in environmental activities (Angelovska et al., 2012; Pan et al., 2018). Creating and expanding environmental knowledge and awareness is one of the best ways to overcome environmental challenges and achieve sustainable environmental development (Guzman et al., 2020). Social responsibility is recognized as one of the most important elements of the philosophy of organizations, so that the importance of its observance by organizations

strengthens the satisfaction of stakeholders outside the organization to legitimize the organization (Wu et al., 2015). Organizations also face a challenge called legitimacy in a dynamic and unpredictable environment on the path to sustainable performance, which they can strive for through corporate social responsibility (Asrar wt al., 2017). Iran is a developing country, is in the process of industrialization, and in recent decades has faced many problems, including problems related to industrial pollutants (Bazrkar & Moshirpour, 2021). The rapid growth of industry and industrial development has put the country's natural environment at risk. The severity of environmental pollution caused by waste materials in cities and industrial centers is such that it has attracted the attention of scientific and executive resources for proper disposal or principled recycling of these materials. Due to the increase in environmental problems and issues in developing countries such as Iran, the concerns and environmental awareness of people in the community and, of course, the staff of various companies such as companies active in the automotive industry has increased. Considering the importance of the impact of implementing green human resource management measures, as well as the need to improve employees 'environmental knowledge and companies' increasing attention to their social responsibilities that can affect the environmental behavior of individuals and the sustainability of environmental performance of manufacturing companies The present study seeks to answer the question of what effect the measures of green human resource management through environmental knowledge and organizational social responsibility on the sustainable environmental performance of companies operating in the automotive industry in Iran. Despite studies on the relationship between human resource management and environmental performance of companies, as well as components such as environmental knowledge and corporate social responsibility, few studies on green human resource management measures, environmental knowledge, corporate social responsibility and sustainable environmental performance has been achieved. Manufacturing companies to sustainable environmental performance need to study the relationship between green human resource management measures, environmental knowledge, corporate social responsibility and sustainable environmental performance.

2. THEORETICAL FRAMEWORK AND DEVELOPMENT OF HYPOTHESES

2.1 Green human resource management and sustainable environmental performance

Green human resource management as one of the main dimensions of green management can lead to sustainable performance of organizations (Rayner & Morgan, 2018). Previous research has shown that green human resource management through measures such as green recruitment and employment Green education and development and

green rewards affect the sustainable performance of the organization (Ziad et al, 2018). Human resource managers can increase the awareness of employees about environmental issues by choosing appropriate programs for training employees, and this awareness can improve the performance of the organization in the field of environmental issues (Egri & Herman, 2000). Employees' involvement and activity in environmental management leads to the improvement of environmental management systems, the use of efficient resources, and the reduction of waste pollution in the workplace. To implement green empowerment, all employees, regardless of their position, as this increases their interest in environmental issues (Ahmad, 2015), should welcome environmentally friendly ideas. Kim et al. (2019) examined the impact of green human resource management on environmentally friendly behaviours among hotel staff. The results showed that green human resource management increases organizational commitment, strengthens environmentally friendly behaviours among employees and improves the organization's environmental performance. Accordingly, the first hypothesis of the research is defined as follows:

H1: Green human resource management has a positive and significant effect on the sustainable environmental performance of the automotive industry.

2.2 Green human resource management and environmental knowledge

Officer et al. (2016) found that employees' environmental knowledge affects their behaviour and performance in relation to environmental issues. They also found that the interaction of environmental knowledge and green human resource management practices would lead to improved performance of individuals and ultimately the organization in relation to environmental issues. When employees are aware of environmental issues and problems, they are more likely to exhibit environmental behaviours (Saeed et al., 2019). The implementation of green human resource management measures in a way shows the level of understanding and awareness of employees of the organization on environmental issues, and the more employees' knowledge of environmental issues improves, the more likely employees are to engage with environmental issues and in order to achieve Environmental goals, try harder (Bazrkar & Moshirpour, 2021) A review of previous studies shows that if employees have more knowledge of environmental issues and solutions, they can perform better in relation to environmental issues. (Cheng&Wu, 2015). Accordingly, the second hypothesis of the research is defined as follows:

H2: Green human resource management has a positive and significant effect on the environmental knowledge of the automotive industry.

2.3 Green human resource management and corporate social responsibility

Social responsibility is a type of management according to which organizations perform activities that have a positive effect on society. In fact, social responsibility seeks to eliminate the negative effects of the organization on society (Deshwal et al., 2015). Paying attention to green human resource management and greening human resource activities is a step towards increasing corporate social responsibility (Opatha & Arulrajah, 2014). One of the social responsibilities defined for organizations is to pay attention to environmental issues (Newman et al., 2020). Corporate social responsibility allows the organization to survive in a situation where the organization follows the current trend but continuously improves its level of social responsibility (Velte., 2021). The results of many researches in the last decade have shown that the activities of organizations in the field of green human resource management will increase the quality of corporate social responsibility (Roscoe et al., 2018). This requires companies to provide special conditions and take action in this regard, some of these conditions and actions within the organization through green human resource management activities to inform and empower employees about environmental issues. Environmentally done (Masri & Jaroon, 2017). Accordingly, the third hypothesis of the research is defined as follows:

H3: Green human resource management has a positive and significant effect on corporate social responsibility of the automotive industry.

2.4 Environmental knowledge and sustainable environmental performance

One of the important variables for predicting human behavior in the field of environmental issues is one's knowledge about environmental issues. Knowledge is considered as a necessity for successful environmental activities (Anwar et al., 2020). In fact, knowledge is used as a tool to overcome psychological barriers such as ignorance or misinformation. Although knowledge does not always have a direct effect on behavior, it does reinforce other mechanisms that facilitate change in environmental behavior (Singh et al., 2020). Numerous studies have examined the effect of environmental knowledge on their environmental behavior, in most of these studies; lack of knowledge is mentioned as a major barrier to positive environmental behaviors (Gilal et al., 2019). Cognitively influencing the individual, knowledge is considered as one of the important components that shape people's attitudes toward environmentally friendly behaviors (Zhao et al., 2014). Having environmental knowledge among the employees of an organization helps them to have a more complete understanding of environmental issues and, in turn, to have higher levels of control beliefs (Amoah & Addoah, 2021). Studies also show that employees with higher environmental knowledge make more efforts to produce green products.

Accordingly, the fourth hypothesis of the research is defined as follows:

H4: Environmental knowledge has a positive and significant effect on the sustainable environmental performance of the automotive industry.

2.5 Corporate social responsibility and sustainable environmental performance

Improving environmental performance for organizations has many positive effects such as compliance with government environmental regulations and standards, positively increasing organizational credibility and organizational competitive position, as well as creating new business opportunities (Antoni & Jie, 2012). As a result, environmental performance for the whole organization is an important issue to increase the competitive advantage of the organization that can be considered an important strategic perspective for the organization. (Dangelico & Pujari, 2010) On the other hand, paying attention to corporate social responsibility enables them to invest in quality and various social aspects. Moreover, the environment to develop human capital and achieve green performance goals while maintaining its social and cultural aspect and environmental economy. (Abbas, 2020) Therefore, corporate social responsibility is a strategic basis for any organization that It has a positive effect on organizational performance and employee performance and leads to sustainable development in the organization (John et al., 2019). In a 2021 study, Awawdeh et al. Sought to estimate the relationship between technological innovation and corporate environmental performance. They found that corporate social responsibility plays a major role in the sustainable environmental performance of the companies under study. Accordingly, the fifth hypothesis of the research is defined as follows:

H5: Corporate social responsibility has a positive and significant effect on the sustainable environmental performance of the automotive industry.

2.6 The mediating role of environmental knowledge and corporate social responsibility

Environmental knowledge refers to the level of knowledge and awareness of environmental issues and solutions (Zsóka et al., 2013). Environmental awareness is the knowledge and understanding of people about their environment as well as the conscious, voluntary, committed presence of individuals and organizations to preserve and maintain the environment (Portney, 2016). Green human resource management measures in greenery The organization can pave the way for the creation of sustainable environmental performance of the

organization for the organization, in this regard, what encourages organizations to take green measures to achieve sustainable performance, corporate social responsibility that helps in the process of promoting environmental attitudes , Organizations lose part of their profits due to the cost of environmental safety practices and social responsibility (Bangwal & Tiwari, 2015). Hillestad and colleagues in 2010 examined how environmental knowledge and awareness work as a corporate social responsibility activity, they focused on the company's brand. The results showed that the two factors of innovation and awareness of environmental issues through the two factors of external reputation and green innovation have a positive effect on the company's environmental performance. Research is defined as follows:

H6: Green human resource management through environmental knowledge has a positive and significant effect on the sustainable environmental performance of the automotive industry.

H7: Green human resource management through corporate social responsibility has a positive and significant effect on the sustainable environmental performance of the automotive industry.

2.7 Conceptual models

According to the theoretical foundations of the research, purpose and hypotheses, the conceptual model of this research is shown in Figure 1.

3. METHODOLOGY

Given that the present study examines the relationship between the implementation of green human resource management and sustainable environmental performance of companies, operating in the automotive industry in Iran with respect to the mediating role of environmental knowledge and corporate social responsibility, in terms of the purpose of a study it is a practical and methodical descriptive-survey study. The statistical population of this study consisted of senior human resource managers of companies active in the automotive industry in Iran. The initial estimate showed that the total number of members of the statistical population is 143 people. After identifying these individuals, the questionnaire was distributed electronically among them and after four weeks from the delivery of the questionnaire, 143 completed questionnaires were collected. In the research questionnaire, in addition to the items related to the studied variables, demographic questions were asked regarding the three characteristics of gender, level of education and related work experience. The results of the analysis of the collected data in relation to demographic characteristics are presented in Table 1.
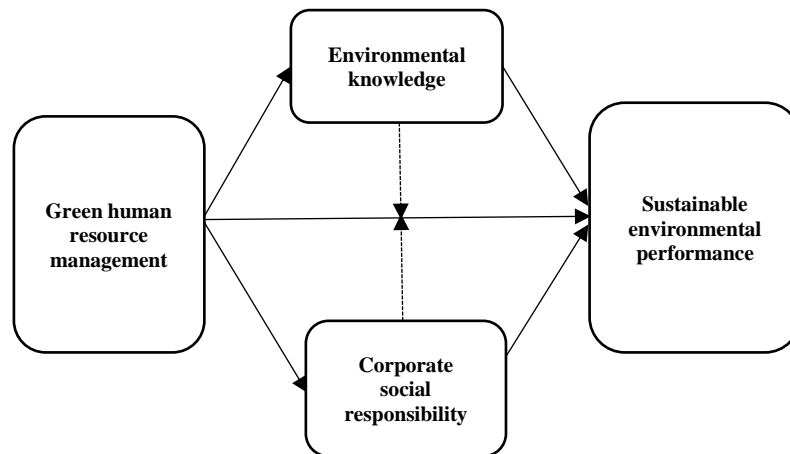
Figure 1. Conceptual models

Table1. Sample characteristics

Classification		Frequency (people)	Composition ratio (%)
Gender	Male	114	80%
	Female	29	20%
Level of Education	Bachelor	52	36%
	Masters	76	53%
	Ph.D.	15	11%
Work experience	5 to 10 years	18	12%
	10 to 15 years	39	27%
	15 to 20 years	55	39%
	Over 20 years	31	22%
Total number of respondents		143	100%

In this study, a questionnaire was used to collect research data. All questions of the questionnaire were evaluated based on the five Likert scales, the values of which were defined from one (very weak) to five (very strong). Based on the conceptual model of the research, which shows that the model has an independent variable, namely green human resource management, to measure this variable from 8 items, based on four components: green recruitment and employment, green pay and reward, development and green education And green performance management was adapted from the questionnaires used in the research of Zaid et al. (2018) and Saeed et al. (2018). In order to collect data in relation to the mediating variables of the research, which are the two variables of environmental knowledge and corporate social responsibility. 8 items used in Saeed et al.'s (2018) research for environmental knowledge variable and 8 items used in Jeon et al.'s (2020) research for corporate social responsibility variable were also used to measure the research dependent variable, ie performance variable. Sustainable environment was adapted from five items used in the study of Paillé et al. (2014). In this study, in order to more accurately evaluate the validity of the questionnaire, the content validity ratio was used. Considering that the opinions of 20 experts were used to examine this ratio, the acceptable value of this ratio was determined to be 0.37 based on 20 experts according to the minimum CVR

index. The results of this ratio in relation to 29 items of the research questionnaire showed that the obtained values are all more than the standard value of 0.37. As a result, it can be said that the content validity of the questionnaire items is confirmed. In this study, Cronbach's alpha test was used to measure the reliability of the variables. The results of this test showed that the values obtained for the variables of green human resource management, sustainable environmental performance, and environmental knowledge and corporate social responsibility were 0.87, 0.85, 0.80 and 0.91 were obtained and according to the value of criterion 0.7, it can be said that the reliability of the research variables is confirmed.

In this study, descriptive statistics and inferential statistics approaches were used to analyse the collected data. The main method for conducting the research was structural equation modelling and each of the research hypotheses was tested through path analysis. The software used in this study was SPSS 22 and Smart PLS.3 in situations where the aim of the study is to analyse the causal and predictive relationships, the PLS path modelling method is preferred to covariance-based techniques such as LISREL (Hair et al, 2014). PLS modelling has many applications in various fields including management sciences. LISREL's approach focuses on covariance prediction and PLS modelling on variance maximization. PLS is a variance-based approach that requires fewer conditions than similar techniques of structural equations such as Liserl and Aimos (Liljander et al, 2009).

4. RESULTS

In the present study, a descriptive study of the statistical sample consisted of two parts: analysis of demographic variables and descriptive statistics of research variables.

4.1 Descriptive statistics of research Constructs and indicator

In this part of descriptive statistics, mean, standard deviation, minimum, maximum, the respondents have examined skewness, and kurtosis related to each constructs an indicator. The results are reported in Table 2.

Table 2. Results of descriptive statistics of research Constructs and indicator

Component	Item	Mean	Stdv	Min	Max	Skewness	Kurtosis
Sustainable environmental performance	Creating environmental standards at the organization level	3.67	0.268	3	5	0.775	-0.085
	Avoid continuous use of products that are harmful to the environment.	3.87	0.354	3	5	-0.157	-0.011
	Adopt laws to prohibit the use of environmentally harmful equipment	4.10	0.321	2	5	0.287	-0.777
	Implement the principles of environmental standards such as ISO 14001	3.99	0.228	3	5	0.811	0.632
	Implement the principles of waste management at the company level	3.97	0.294	1	5	0.863	0.412
Green human resource management	Ask environmental questions in the interview process	4.16	0.420	3	5	-0.044	-0.832
	Selection of applicants who have had environmental activities	4.19	0.367	1	5	-0.081	-0.697
	Predicting the number and type of manpower to implement environmental measures	4.58	0.286	3	5	0.022	0.398
	Assess and determine educational needs in environmental issues	4.41	0.178	2	5	0.111	-0.555
	Add environmental requirements in the job description	3.60	0.455	2	5	-0.443	-0.011
	Designing a company-level environmental performance evaluation system	3.75	0.438	1	5	0.109	-0.701
	Allocate rewards for environmental actions	3.59	0.444	1	5	0.200	-0.610
	Provide periodic feedback to achieve environmental goals	3.41	0.448	1	5	1.010	-0.429
Environmental knowledge	Employee level of awareness of chemical and non-chemical pollution at the company level	4.20	0.694	1	5	0.332	-0.087
	Provide necessary information about pollutants to employees of different parts of the company	4.57	0.557	1	5	-0.228	-0.027
	The level of awareness of employees about changes in environmental laws at the company level	4.45	0.662	1	5	0.338	-0.019
	Level of knowledge and awareness of people about clean energy	4.29	0.587	1	5	-0.038	-0.110
	Level of knowledge and awareness of people about waste management in different sectors	4.00	0.430	1	5	0.331	0.554
	Level of knowledge and awareness of people about sustainable and unsustainable consumption of organizational resources	4.37	0.437	1	5	0.519	0.881
	Level of knowledge and awareness of people about environmentally friendly behaviors	4.52	0.502	1	5	-0.099	0.490
	The level of knowledge and awareness of people about environmental degradation at the company level and ways to prevent it	4.60	0.611	1	5	0.851	0.332
Corporate social responsibility	Company tries to sponsor pro-environmental programs.	3.82	0.489	2	5	-0.554	-0.019
	Company tries to protect the environment	4.28	0.399	1	5	-0.328	0.397
	Company tries to carry out programs to reduce pollution by controlling emissions.	3.58	0.271	1	4	-0.028	0.030
	I think Company tries to encourage their drivers to use only necessary natural resources (clean gas, etc.)	3.99	0.229	1	5	-0.011	0.551
	Company contributes to improve the transportation industry	3.70	0.327	2	5	0.207	-0.639
	Company has established ethical guidelines for business activities.	3.64	0.510	1	5	0.771	0.330
	Company strives to root out irregularities.	3.80	0.597	1	5	0.641	0.203
	Company helps generate employment opportunities	4.18	0.492	2	5	0.840	0.210

4.2 Findings of inferential research statistics

In this part of the analysis of research data collected before using the structural equation modelling method to measure the conceptual model of the research, first Kolmogorov-Smirnov test is used to test the normality of data collection.

4.2.1 Kolmogorov–Smirnov test

Since in this research, to test the hypotheses, the method of structural equations based on partial least squares is used in Smart PLS software, so it is necessary to examine the normality of the distribution of collected data. Kolmogorov-Smirnov (KS) test was used to check the normality of the data. The results of them, which were calculated using SPSS software, are reported in Table 3.

Table 3. Kolmogorov-Smirnov test results.

Component	Significance level
Sustainable environmental performance	0.186
Green human resource management	0.202
Environmental knowledge	0.197
Corporate social responsibility	0.116

Kolmogorov-Smirnov test was tested with an error level of 5%. In this case, it can be said that if the significance level in this test is more than 5%, the data can be assumed normal. Otherwise, the distribution of data cannot be said to be normal. According to the above table and the values of the significance level, the assumption of normality of the research variables was confirmed.

To test the research conceptual model and also to test the research hypotheses in the model analysis algorithm in the structural equation modeling method in Smart PLS software, the necessary analyzes were performed in three parts: 1) measurement model fit, 2) structural model fit. In this way, first, the accuracy of the relationships in the measurement models was ensured using reliability and validity criteria, and then the relationships in the structural part were examined and interpreted.

4.2.2 Fitting measurement models

According to the model analysis algorithm in PLS-SEM method, three criteria of reliability, convergent validity and divergent validity have been used to evaluate the fit of measurement models and the following results have been obtained.

- Reliability: This index is tested and measured using three criteria of factor load coefficients, Cronbach's alpha and combined reliability:
- Factor loading measurement: In confirmatory factor analyzes values higher than 0.5 indicate a strong level of significance and high correlation between observation and
- Factor variables and indicate that the structure is well defined. The results of this measurement in Table 4.
- Cronbach's alpha: Cronbach's alpha value above 0.7 is an acceptable final indicator. However, Hair et al. (2014) for variables with a small number of questions introduced the value of 0.6 as the limit of Cronbach's alpha coefficient. The results of this test are presented in Table 4 (Appendix).
- Combined reliability: Because in calculating the Cronbach's alpha coefficient for each structure,

all indices are entered in the calculations with equal importance, while for calculating CR, the indices with higher factor loads are more important. The CR values of the structures are more realistic and accurate than their Cronbach's alpha. The results of this test are presented in Table 4.

- Convergent validity: Convergent validity is the second criterion used to fit measurement models in the partial least squares method. Indicators show that the higher this correlation, the greater the fit. The AVE (Average Variance Extracted) method was used to test this criterion. The results of this test are reported in Table 4.
- Discriminant validity: In this study, HTMT test was used. Heterotrait-Tonotrait (HTMT) correlation value less than 0.90 (Fornell-Larker criterion has been proven not to evaluate segregation validity well, especially if all indices are loaded. It is in the narrow range of values (0.65-0.85). (Henseler et al., 2015) The PLS-SEM algorithm in Smart PLS.3 software was used to perform this test. based on the results obtained from this test, it can be noted that the Discriminant validity of the studied components is confirmed. The result of this test is presented in Table 5.

Table 5. Discriminant validity test (HTMT results)

	SUEP	GHRM	ENK	CSR
SUEP				
GHRM	0.801			
ENK	0.820	0.717		
CSR	0.810	0.818	0.824	

After obtaining the results of the values of factor loads and Cronbach's alpha coefficients, the combined reliability and validity of the partner and the analysis of software outputs, and since the values of each of the above criteria for each of the latent variables are defined above the quorum and threshold, The suitability of the convergent reliability and validity of the research model can be confirmed.

4.2.3 Fitting structural research model

After fitting the measurement models, we will fit the structural model (conceptual model) of the research and then we will test the research hypotheses. In order to fit the conceptual model of the research, t-values, R^2, Q^2 were used.

R^2: This criterion is the necessary criterion to examine the fit of the conceptual model of research. Regarding the acceptable value of this criterion, three values are introduced. These three values are 0.19, 0.33 and 0.67, which indicate the weak, medium and strong criteria of R^2 criterion. The results obtained from this criterion are presented in Figure 2.
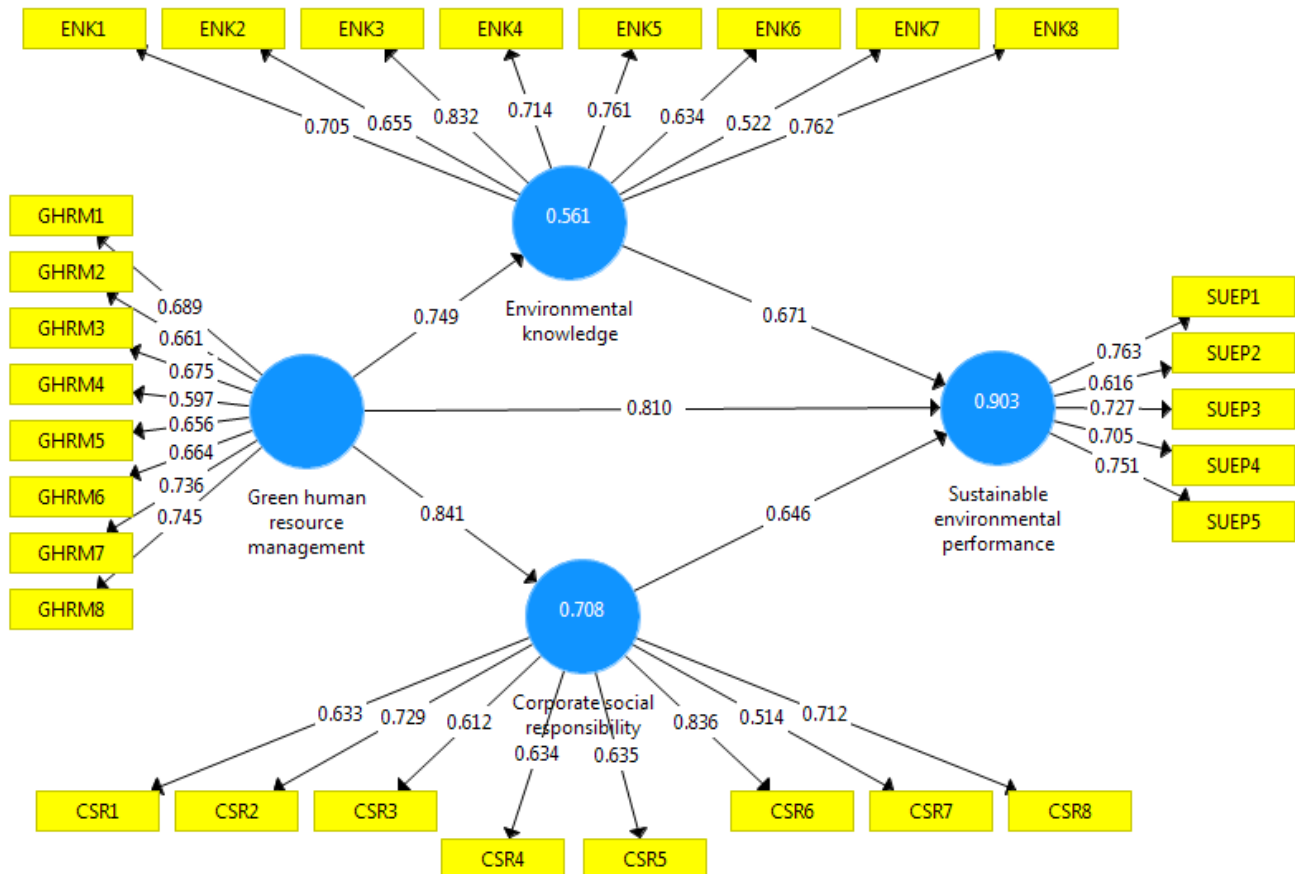

Figure 2. R2, path coefficients and factor loading

In general, the study of coefficients of determination is related to the endogenous (dependent) variable of the model. It should be noted that the values of R^2 are shown within the circles of the research model and are calculated only for endogenous structures of the model, and in the case of exogenous structures, the value of this criterion is zero. According to the value obtained for the endogenous variables of the research in relation to the R^2, it can be concluded that because the values of 0.561, 0.708 and 0.903 are more than the values of 0.19, 0.33 and 0.67, the structural model of the research can be fitted. It is acceptable.

T-values: In the partial least squares method, various criteria are used to evaluate the report of the structural model of the research, the most important criterion being the significance coefficient t. If the value of t-statistic is more than 1.96 at the level of 5% error indicates the correctness of the relationship between the research structures and thus confirms the research hypotheses. To calculate this statistic in Smart PLS software, Bootstrapping command is used. The results of this test are shown in Figure 3.

Q^2: This criterion determines the predictive power of the model. Henseler et al. (2009) on the intensity of the model's predictive power for endogenous structures, three values of 0.02, 0.15 and 0.35, which indicate the weak, medium and strong predictive power of the structure or structure, respectively. Has exogenous properties, introduced. Since the value of (1-SSE / SSO), the endogenous structures of the model, Sustainable environmental performance, Environmental knowledge and corporate social responsibility are 0.362, 0.287 and 0.223, respectively, it can be said that this result indicates acceptable predictive power.
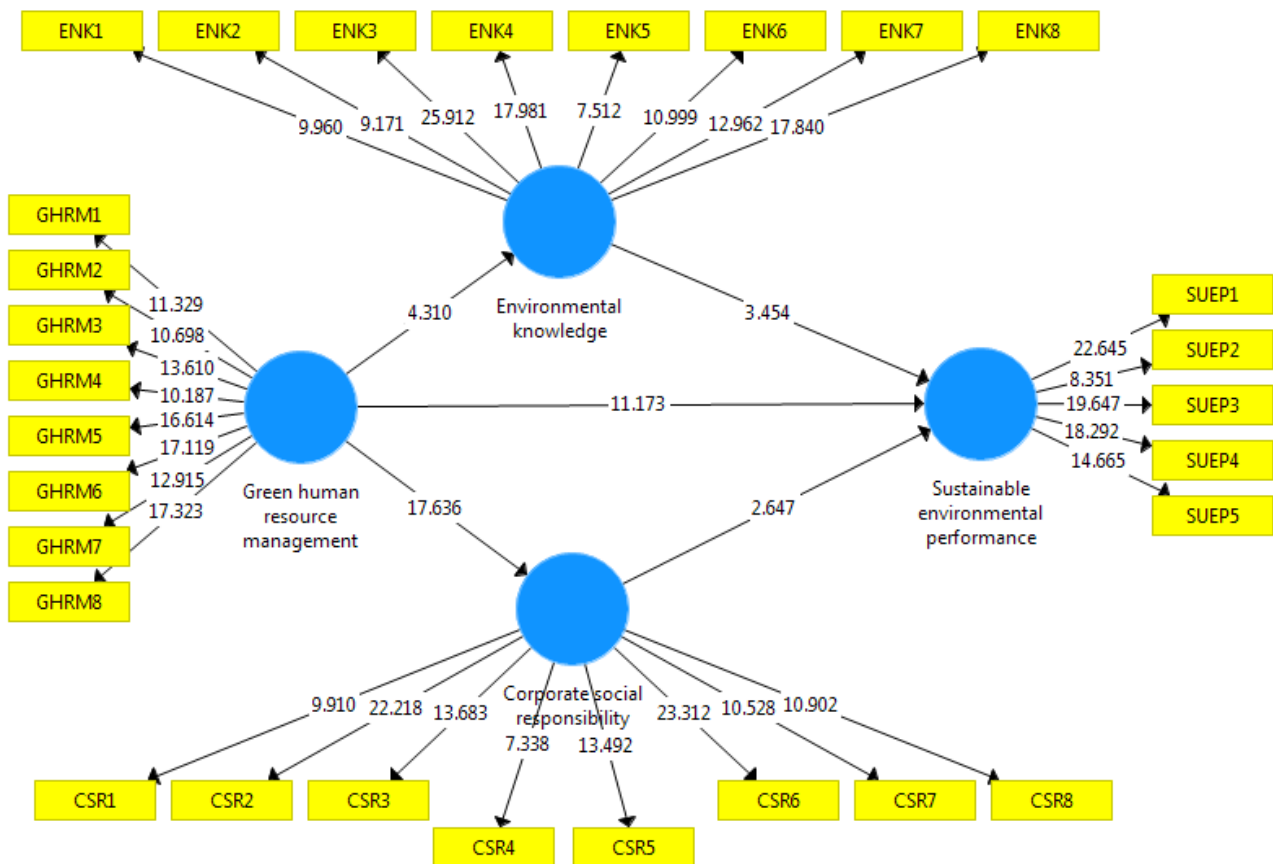
Figure 3. T-values

4.3 Hypothesis test results

Based on the research data analysis algorithm using the partial least squares method, at this stage, according to the results obtained from the t-Value, p-Value and path coefficients, the research hypotheses are tested. If the value of the significance coefficient of each path is more than 1.96, the relevant path is significant at the 95% confidence level and the related hypothesis is confirmed. The results of the research hypotheses test are reported in Table 6.

Table 6. Hypothesis test results

Hypotheses	T-value	P-value	Path	Result
GHRM → SUEP	11.17	0.000	0.810	support
GHRM → ENK	4.310	0.000	0.749	support
GHRM → CSR	17.63	0.000	0.841	support
ENK → SUEP	3.454	0.000	0.671	support
CSR → SUEP	2.647	0.000	0.646	support
GHRM → ENK → SUEP	2.349	0.001	0.502	support
GHRM → CSR → SUEP	4.438	0.000	0.543	support

The results obtained from Table 6.Shows that the implementation of green human resource management practices has a positive and significant effect on the sustainable environmental performance of the studied companies in the Iranian automotive industry. Also, in the relationship between green human resource management and sustainable environmental performance, environmental knowledge variables And corporate social responsibility play an influential mediating role.

5. CONCLUSION

Today, the result of environmental performance in achieving sustainable environmental performance for all organizations is an important issue to increase the competitive advantage of the organization that can be considered an important strategic vision for the organization. Green human resource management, as a powerful tool that guides human factors, can help organizations to fulfill their social responsibilities in order to protect the environment and move towards sustainable development. The results of studies show that organizations on the way to becoming a green organization can use green human resource management activities to motivate their employees. Among the role of employees' environmental knowledge and their awareness of environmental issues is very decisive and effective. Green resource management means

implementing strategies to make employees and managers aware of green practices to promote and pursue environmental sustainability activities that help organizations create a green organization. The main purpose of this study was to investigate the effect of using green human resource management methods on sustainable environmental performance of companies operating in the Iranian automotive industry with respect to the mediating role of environmental knowledge and corporate social responsibility. Based on the results, it can be said that the companies under study can have a positive impact on improving environmental performance and environmental performance of the organization by selecting and applying effective methods of green human resource management such as green employment, green education and green performance management. In the following, we analyze the results of research hypotheses.

The results of the first hypothesis test showed that green human resource management has a positive and significant effect on sustainable environmental performance and the green human resource management variable 0.810 directly explains the changes related to the sustainable environmental performance variable. He said that companies active in the Iranian car industry can improve environmental performance and take steps towards sustainability by implementing methods such as attracting and hiring green. Studies show that the results of testing this hypothesis were consistent with the results of the research of Roscoe et al. (2018), Yusoff et al. (2020) and Mills et al. (2021). The results of the second hypothesis test showed that green human resource management has a positive and significant effect on environmental knowledge and the green human resource management variable directly explains 0.749 of the changes related to the environmental knowledge variable. Accordingly, it can be said that companies active in the Iranian automotive industry can improve the individual and organizational environmental performance by implementing methods such as training and green development of their employees and move towards achieving sustainable environmental performance. Studies show that the results of testing this hypothesis were consistent with the results of research by Saeed et al. (2019) and Fawehinmi et al. (2020). The results of the third hypothesis test showed that green human resource management has a positive and significant effect on corporate social responsibility and the green human resource management variable directly explains 0.841 of the changes related to corporate social responsibility variable. Accordingly, it can be said that companies active in the Iranian automotive industry can improve environmental performance by implementing methods such as green performance management and take a step towards sustainability. Studies show that the results of testing this hypothesis were consistent with the results of research by Sahut et al. (2019), Yong et al. (2020) and de Souza Freitas et al. (2020).The results of testing the fourth hypothesis showed that environmental

knowledge has a positive and significant effect on sustainable environmental performance and the environmental knowledge variable directly explains 0.671 of the changes related to the sustainable environmental performance variable. Accordingly, it can be said that companies active in the Iranian automotive industry can transfer environmental knowledge to their employees, promote environmental commitment and increase green behaviors of employees and on the way to achieving sustainable environmental performance with the cooperation of employees with Achieve this at a lower cost. Studies show that the results of testing this hypothesis were consistent with the results of research by Geiger et al. (2019) and Rausch & Kopllin (2020). The results of testing the fifth hypothesis showed that corporate social responsibility has a positive and significant effect on sustainable environmental performance and the environmental knowledge variable 0.646 directly explains the changes related to the sustainable environmental performance variable. The test result of this hypothesis showed that attention to social responsibility enables companies to invest in quality and various social and environmental aspects in order to develop human capital while maintaining its social and cultural aspect and environmental economy. Achieve green performance goals. Studies show that the results of testing this hypothesis are consistent with the results of research by John et al. (2019) and Awawdeh et al. (2021).The results of the sixth hypothesis test showed that green human resource management through environmental knowledge has a positive and significant effect on sustainable environmental performance and the green human resource management variable 0.502 indirectly explains the changes related to the sustainable environmental performance variable. Accordingly, it is suggested that the managers of the studied companies, in order to achieve sustainable environmental performance, by developing the necessary processes in the field of teaching the concepts of green human resource management, developing green culture in the organization and also receiving comments and suggestions from employees. Environmental issues encourage employees to be more involved in green behaviors. Studies show that the results of testing this hypothesis were consistent with the results of research by Rawashdeh (2018), Saeed et al. (2019) and Soares et al. (2021). The results of the seventh hypothesis test showed that green human resource management through corporate social responsibility has a positive and significant effect on sustainable environmental performance and the green human resource management variable 0.543 indirectly explains the changes related to the sustainable environmental performance variable. Given that corporate social responsibility includes a set of measures that enable the organization to fulfill its legal obligations and invest in green human resources and strengthen environmentally friendly behaviors, it is recommended that company managers Focusing on green human capital and developing programs to support employees' environmental behaviors, along with

developing a culture of ethical responsibility among organizational stakeholders, to take steps towards achieving sustainable environmental performance. The observations show that the results obtained from testing this hypothesis are consistent with the results obtained from the research of Al Kerdawy (2019) and Newman et al. (2020).

5.1 Limitations and suggestions for future research

The present study, like other research in the field, faced limitations. Since the present study is an exploratory study, the research findings are limited to the sample size and if the sample size is changed, the results may change. Also, different opinions about the research topic among members of the statistical community can affect the research results to some extent. Affect. The study population in the present study consisted of companies active in the Iranian automotive industry, therefore, the results are specific to these companies and specifically to the automotive industry and can be generalized to all organizations and companies in other It is not industry, it

is suggested that researchers in future research, the subject of this study in other organizations and manufacturing and service industries inside and outside Iran, and compare the results with the present study. Considering that in this study, the effect of using four methods (green recruitment and employment, green pay and reward, green development and education and green performance management) of green human resources on sustainable environmental performance was investigated. The importance of individual and organizational productivity as well as achieving a competitive advantage in the automotive industry, researchers in future research to examine the impact of other green human resource management practices such as green human resource planning and green safety management on the structure of sustainable environmental performance. Also in this study, environmental knowledge and corporate social responsibility were considered as mediating variables, therefore, it is suggested that researchers in future research to mediate the role of other variables such as employee commitment and organizational culture as mediating variable.

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Appendix:

Table 4. Fitting results of measurement models

component	Item	Factor Loading	Cronbach's Alpha	Combined Reliability	Convergent Validity
Sustainable environmental performance	Creating environmental standards at the organization level	0.763	0.837	0.838	0.610
	Avoid continuous use of products that are harmful to the environment.	0.616			
	Adopt laws to prohibit the use of environmentally harmful equipment	0.727			
	Implement the principles of environmental standards such as ISO 14001	0.705			
	Implement the principles of waste management at the company level	0.751			
Green human resource management	Ask environmental questions in the interview process	0.689	0.860	0.858	0.533
	Selection of applicants who have had environmental activities	0.661			
	Predicting the number and type of manpower to implement environmental measures	0.675			
	Assess and determine educational needs in environmental issues	0.597			
	Add environmental requirements in the job description	0.656			
	Designing a company-level environmental performance evaluation system	0.664			
	Allocate rewards for environmental actions	0.736			
	Provide periodic feedback to achieve environmental goals	0.745			
Environmental knowledge	Employee level of awareness of chemical and non-chemical pollution at the company level	0.705	0.863	0.857	0.639
	Provide necessary information about pollutants to employees of different parts of the company	0.655			
	The level of awareness of employees about changes in environmental laws at the company level	0.832			
	Level of knowledge and awareness of people about clean energy	0.714			
	Level of knowledge and awareness of people about waste management in different sectors	0.761			
	Level of knowledge and awareness of people about sustainable and unsustainable consumption of organizational resources	0.634			
	Level of knowledge and awareness of people about environmentally friendly behaviors	0.522			
	The level of knowledge and awareness of people about environmental degradation at the company level and ways to prevent it	0.762			
Corporate social responsibility	Company tries to sponsor pro-environmental programs.	0.633	0.855	0.849	0.521
	Company tries to protect the environment	0.729			
	Company tries to carry out programs to reduce pollution by controlling emissions.	0.612			
	I think Company tries to encourage their drivers to use only necessary natural resources (clean gas, etc.)	0.634			
	Company contributes to improve the transportation industry	0.635			
	Company has established ethical guidelines for business activities.	0.836			
	Company strives to root out irregularities.	0.514			
	Company helps generate employment opportunities	0.712			