

Realization of Sustainable Organizational Performance Using New Technologies and Green Human Resource Management Practices

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Abstract

The introduction of a culture of environmental responsibility is becoming not just a branding tool, but also an important factor in business development. This article explores the possibility of increasing the environmental performance of companies through green methods of personnel management using the example of Iranian car manufacturers. The study combines survey and correlation-analytical methods.

The study reveals that the improvement of green methods of human resource management, covering such aspects as recruitment, training, and performance management, has a positive and significant impact upon

the environmental performance of companies. The effectiveness of these activities increases with the use of new technologies such as learning management systems (LMS), cloud computing, and artificial intelligence. The application of green methods in personnel management stimulates the implementation of a corporate strategy of sustainable development and opens new career opportunities for employees. The benefits for the companies lie in the improvement of corporate image, the growing demand for their products, the improvement of production safety, and, consequently, that of the internal organizational climate.

Keywords: sustainable organizational performance; new technologies; green human resource management practices; automotive industry

Citation: Shayegan S., Bazrkar A., Yadegari R. (2023) Realization of Sustainable Organizational Performance Using New Technologies and Green Human Resource Management Practices. *Foresight and STI Governance*, 17(2), 95–105. DOI: 10.17323/2500-2597.2023.2.95.105

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Introduction

Today, the importance of sustainability has made organizations focus on achieving sustainable performance. An organization that moves in the direction of sustainability is an organization that has developed its performance and activities over time through the management of economic, social and environmental dimensions (Ibrahim et al., 2019). One of the issues that companies are facing today is how to improve performance according to new environmental laws. In order to improve their environmental performance, companies must implement environmental principles and laws in the entire supply chain and all units of the company, including human resources, which leads to the emergence of green human resource management (Norton et al., 2017). Improving the performance of employees will increase their productivity and help the organization reach its goals and ease access to these goals.

In addition, companies seek to use different tools to gain a competitive advantage, and paying attention to technology strategy is one of the most important tools that can bring a competitive advantage to companies (Yusoff et al., 2015). In the meantime, technological issues are considered important categories in terms of influencing the lives of future generations, and the issue of technology sustainability has become the focus of attention of leading organizations on the path to achieving sustainable performance (Erkmen et al., 2020). Over the past decade, human resource researchers have increasingly paid attention to the challenge of developing sustainable human resource management systems to enhance human sustainability, as well as human resource management systems that support business organizations in achieving their sustainability goals (Lee et al., 2019). Research shows that human resource management, like modern technologies, plays a vital role in the sustainable performance of companies (Alraja et al., 2022).

Applying green human resource management practices can be a suitable stimulus for realizing sustainable development and realizing sustainability strategy, it can also improve new career paths with an emphasis on sustainability for current employees and the new generation so that they can ensure a better future. (Li et al., 2019). Creating and expanding environmental knowledge and awareness is considered one of the desirable solutions to overcome environmental challenges and achieve sustainable development of the environment (Amini et al., 2018). Since the use of new technologies affects a person's cognitive processing, the existence of necessary infrastructures for the use of new technologies helps an organization to have a more complete understanding of environmental issues and, in turn, beliefs have a higher level of control. In addition, the results of the studies show that organizations that have new tools and a higher understanding of environmen-

tal issues make more efforts to produce green products and take steps towards improving environmental performance.

Iran is a developing country, and is going through its industrialization stages, and in the last few decades, it has faced many problems, including problems related to industrial pollutants. The rapid growth of industry and industrial development has exposed the natural environment of this country to pressure and danger. The severity of environmental pollution resulting from waste materials in cities and centers of industrial concentration is such that it has attracted the attention of scientific and executive resources for proper disposal or basic recycling of these materials. Due to the increase in environmental problems and issues in developing countries such as Iran, the environmental concerns and awareness of the people of the society and of course the employees of different companies such as the companies active in the automobile industry have increased. Since the automotive industry is the largest in Iran after the oil industry and as a leading industry includes many companies and small sectors, it is clear that this industry is known as the mother industry due to its dependence on various industries and its influence. And the impact on employment plays a significant role in improving the economic conditions of a country or region. Some estimates indicate that two jobs will be created for each vehicle produced, 17% of which will be direct employment (car manufacturing and parts manufacturing) and 83% of which will be indirect employment (upstream industries and car service activities). Surveys show that automobile companies, considering their strategic position in the country if they pay attention to new technologies and apply green human resource management methods, they can provide the necessary grounds to strengthen and improve their performance. Increase the fulfillment of their obligations in the form of paying attention to social responsibilities in society.

This issue will undoubtedly create a positive image of the brand of automobile companies in the market and provide the basis for the company to achieve sustainable performance. Studies show that the companies active in Iran's automotive industry in the last decade have been able to experience more stable organizational performance by empowering their human resources through the use of methods such as environmental education, establishing a green payment system and green performance management of employees. Strengthening employees' awareness of environmental challenges, and improving methods through the use of new technologies, such as the use of cloud computing in automotive companies, has resulted in higher efficiency and cost reduction at the individual, organizational and environmental levels. Since the application of green human resource management methods

¹ <https://www.mordorintelligence.com/industry-reports/analysis-of-automobile-industry-in-iran>, accessed 14.09.2022.

through the development of human capital help organizations in optimal environmental management, for this reason among the automotive companies active in Iran despite the existence of many problems such as low level of knowledge and awareness. There are people from environmental issues and lack of technical knowledge in the implementation of these methods, but attention to environmental management through green human resource management is increasing day by day.

The importance of addressing this area increases when today's companies realize that developing a strong social conscience and green sense through green human resource management practices is not only a branding tool but an essential factor for business development. In recent years, Iranian automotive companies have been working towards realizing the vision of the Iranian automotive industry, which is to achieve the first place in the automotive industry in West Asia, are facing two important challenges of sustainability and digital transformation, despite the existence of weaknesses and strengths of Iranian automobile companies in using Green human resource management practices and new technologies. So far the study on the topic of using new technologies and Green human resource management practices has not been done in order to achieve the sustainability of organizational performance. Addressing this issue can help Iranian automobile companies to face the existing challenges as best as possible.

Considering the issues raised and the existing research gap in Iran's automotive industry regarding the use of new technologies and green human resource management methods, we seek to answer the question, How to achieve sustainable organizational performance in Iran's automotive industry through the use of new technologies and green human resource management practices.

Theoretical literature and development of hypotheses

New technologies and sustainable organizational performance

If new technologies are used correctly at the organizational level, it is possible to create a new level of progress and development in the organization (Lin, Ho, 2011). Studies show that by using new technologies, benefits such as increasing efficiency, increasing service speed and improving performance are created for the organization (Rahman et al., 2018). The use of technology has always been related to the progress of the organization (Thomas et al., 2016). Accordingly, to achieve sustainable performance, organizations become more and more dependent on new technologies and their effects, and perhaps this is the most important reason that many companies develop at an extraordinary speed (Rahman, Aydin, 2019). The existence of relevant and compatible technological factors not only increases

the speed and efficiency of the process but also often minimizes the cost and improves productivity (Marler, Fisher, 2013).

New technologies are related to the development of organizational infrastructures such as hardware, software, and technological equipment, and hence affect the performance of the organization (Rahman et al., 2018). Technological technologies have tremendous effects on all dimensions and aspects of organizations, and managers of organizations are required to pay attention to issues related to technology to run the organization efficiently and effectively (Yang et al., 2018). Benefiting from new technological technologies, it must be acknowledged that these technologies bring with them countless opportunities and threats, but it must be accepted that the people of the organization, as an element of societies and organizations, are strongly influenced by technology, and this influence can lead to achieving sustainable performance. Accordingly, the first research hypothesis is proposed as follows:

H1: The use of new technologies has a significant relationship with sustainable organizational performance.

New technologies and green human resource management

Studies show that the adoption of management practices, such as green human resource management and green innovation, largely depends on technological factors (Zhu et al., 2019). The value of technological factors depends on their compatibility with other technologies needed to implement green practices (Kumar, 2015). Costs related to energy consumption are one of the main reasons for companies to move towards the development of new technologies as well as green human resource management, and this issue has gained great importance in recent years (Jenkin et al., 2011). With the explosion of the use of information systems and technologies, reducing their negative environmental effects to reduce environmental destruction and successful implementation of green human resource management practices such as hiring and green training of employees, the use of new technologies such as cloud computing and artificial intelligence is very effective (Zhang et al., 2019). New technologies increase the possibility of effective implementation of green human resource management practices by replacing new processes and services with costly and capital-intensive tasks (Ojo et al., 2022). Accordingly, the second research hypothesis is proposed as follows:

H2: The use of new technologies has a significant relationship with green human resource management practices.

Green human resource management practices and sustainable organizational performance

Today, the increasing destruction of the environment and natural resources is considered a major challenge in human life. These challenges have brought consequences and results in different dimensions and areas

of human life. Increasing concerns about the environment and following it, the emergence of international environmental standards forced organizations to adopt green strategies and it has continued to apply green management, including green human resources management, in all organizational matters (Lewandowski, 2016). A review of previous research has shown that green human resource management through measures such as green recruitment and hiring, green training and development, and green reward has an impact on the sustainable performance of the organization (Ziad et al., 2018).

Human resource managers can improve the awareness of employees about environmental issues by choosing appropriate programs in the field of training employees of the organization, and this awareness can improve the performance of the organization in the field of environmental issues (Bazrkar, Moshiripour, 2021). The study shows that the use of green human resource management practices will increase organizational commitment, strengthen environmentally friendly behaviors among employees, improve the organization's environmental performance, and will ultimately lead to sustainable performance for companies (Mousa, Othman, 2020). Accordingly, the third research hypothesis is proposed as follows:

H3: The implementation of green human resource management practices has a significant relationship with sustainable organizational performance.

Mediating the role of green human resource management practices

Today, new technologies and the innovations created in these technologies are integral sources of sustainable green developments (Yahya et al., 2014). Advances in technological technologies have led to improved environmental performance and sustainable green practices, including green human resource management (Wang et al., 2021).

Organizational sustainability and favorable environmental management help, for this reason, attention to environmental management through green human resource management is increasing day by day (Jaramillo et al., 2018). The review of studies shows that there is a strong positive relationship between technological factors and green human resource management practices and that benefiting from this positive relationship can lead companies to achieve sustainable performance (Alraja et al., 2022). Accordingly, the fourth research hypothesis is proposed as follows:

H4: New technologies have a significant relationship with sustainable organizational performance through green human resource management practices.

Conceptual model of the study is represented at Figure 1.

Methodology

The current research is applied based on its purpose and descriptive survey in terms of method. The statistical

population of this study consists of senior and middle managers of 21 companies active in Iran's automotive industry with at least 5 years of work experience. These companies are in order: Iran Khodro, Saipa, Bahman Khodro, Kerman Motor, Negin Khodro, Azim Khodro, Shahab Khodro, Ocean Motor, Atlas Khodro, Irtoya, Arin Motor Poya, Media Motors, Madireh Khodro, Persia Khodro, Setare Iran, Jileran Khodro, Ramek Khodro, Diyar Khodro, Aframotor, Golrang Motor Family, Alfa Motor. The initial estimate showed that the number of members of the statistical community is equal to 520 people.

Due to a large number of members of the statistical population, sampling was done using a simple random sampling method. Considering that the research was a survey, the simple random sampling method was the best. The number of sample members based on Cochran's formula was 221 people at a confidence level of 95%. The main condition for the selection of the members of the society and the statistical sample was to have at least five years of work experience. Considering that, the members of the statistical sample were identified using a random method and with the help of Cochran's formula, the examination of this number (221 people) showed that this people had a very suitable work experience (77 people with at least 10 years of experience) and education level (147 people with a master's degree). Based on this, it can be said that these sample members are a suitable and sufficient representative for the statistical population under study.

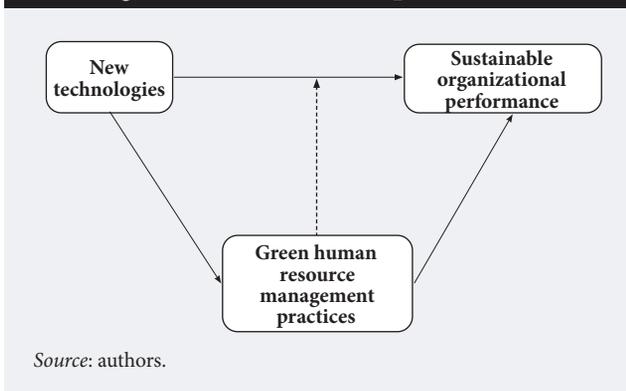
After identifying these people, the questionnaire was distributed among them electronically, and after six weeks of delivery of the questionnaire, 221 completed questionnaires were collected. In the research questionnaire, in addition to the items related to the investigated variables, demographic questions related to the three characteristics of gender, education level and the amount of related work experience were also raised. The results of the analysis of the collected data about the demographic characteristics are presented in table number one.

Data collection

In this research, library resources were used to examine the history of the research and a questionnaire was used to examine the variables of the research. The research data collection tool in this research, was designed in the form of a questionnaire. The Likert scale was used in the questionnaire and the 5-point spectrum was used: very high, high, medium, low and very low.

It is worth mentioning that the current research questionnaire was compiled based on research literature and questionnaires related to new technologies, green human resource management practices and sustainable performance. In line with the compilation of the research questionnaire, from the 6 items used in the research of Alraja et al. (2022) for the variable of sustainable organizational performance based on the

Figure 1. Research conceptual model



following components: reducing paper consumption, reducing waste, reducing gasoline consumption, creating partnerships with green organizations and suppliers, improving compliance with the environment, the use of environmentally friendly materials. From the 9 items used in the research of (Alraja et al., 2022; Chege, Wang, 2020) for the variable of new technologies based on the components of the production of quality products with the help of new technologies, providing services using new technologies, using new technologies in marketing new products, increasing the company's market share using new technologies, using technology to customize products, integrating existing work with web-based services. Also to measure the variable of green human resources management practices from 6 items used in the research of Guerci et al. (2016) based on the following components: selecting employees based on environmental criteria, attracting employees through environmental commitment, providing environmental training to employees, green performance management, green job description and employee par-

ticipation in environmental issues were used. The validity of the questionnaire items was checked.

At first, to check the face validity, the questionnaire was given to 20 experts and they were asked to give their opinion on each question regarding the evaluation of the related goal. Minor modifications of the questionnaire were approved. In addition, to check the validity of the questionnaire more accurately, the content validity ratio was also used. Considering that the opinions of 20 experts were used to check this ratio, the acceptable value of this ratio was determined as 0.42 according to the minimum value for the CVR index, based on 20 experts. The results of examining this ratio about 21 items of the research questionnaire showed that the obtained values are all higher than the standard value of 0.42. As a result, it can be said that the content validity of the questionnaire items is confirmed. Cronbach's alpha method was also used in the present study to determine the reliability of the measurement tool. For this purpose, the reliability of the questionnaire was measured using SPSS software version 23 and Cronbach's alpha method. The obtained results showed that the value of this coefficient for each of the research constructs is as follows: new technologies: 0.88, Sustainable organizational performance: 0.81 and green human resource management practices: 0.87. Considering that these values are higher than the minimum value of 0.7, it can be concluded that the used questionnaire has high reliability.

Data analysis method

The main method for conducting the research was structural equation modeling and each of the research hypotheses was tested through path analysis. The software used in this study were SPSS 22 and Smart PLS.3.

The results of some studies show that the PLS method is used to estimate models in which only structures exist as common factors. But also when CB-SEM is followed to estimate models in which the structures are hybrid (Marin-Garcia, Alfalla-Luque, 2019). Therefore, it is necessary to choose the most desirable method from PLS-SEM or other methods such as CBS-SEM.

Since there was not much transparency in the present study regarding the nature of the structures, the PLS method was chosen. Of course, other reasons such as the complexity of the research model, predicting the effects with models that arise from the data instead of previous theories, and also estimating the relative importance of indicators and not just structures were effective in choosing the PLS-SEM. PLS allows weights based on correlations or regressions to be estimated, or correct with PLSc (consistent PLS) the correlations of those constructs are specified as common factors to make the results consistent with that measurement model (Dijkstra, Henseler, 2015). This provides versatility when analyzing mixed models where the constructs that are present are composites.

Table 1. Sample characteristics

Classification	Frequency (people)	Composition ratio (%)
<i>Gender</i>		
Male	169	0.76
Female	52	0.24
<i>Level of Education</i>		
Bachelor	48	0.22
Masters	147	0.67
Ph.D.	26	0.12
<i>Work Experience</i>		
5 to 10 years	38	0.17
10 to 15 years	77	0.35
15 to 20 years	67	0.30
Over 20 years	39	0.18
Total number of respondents	221	100%

Source: authors.

Table 2. Statistical description of research variables

Component	Mean	Standard deviation	Skewness	Kurtosis
New technologies	4.75	0.397	-1.118	0.367
Sustainable organizational performance	4.58	0.484	-1.756	0.462
Green human resource management practices	4.23	0.502	-1.489	0.398

Source: authors.

Table 3. KMO and Bartlett test results

KMO Index	0.968
Bartlett test	8621.1397
df	220
Significance level	0.000

Source: authors.

Descriptive statistics results

In the descriptive statistics section, each of the research constructs were analyzed by mean, standard deviation, skewness and kurtosis indicators and based on the five-choice Likert scale, the results of this study are shown in Table 2.

According to the results obtained from the values of the skewness and kurtosis indices, considering that these values are in the range of -2 to +2, it can be concluded that the collected data related to the studied components follow the normal distribution.

Results of inferential statistics

KMO Test

In the present study, before applying the structural equation modeling method in Smart PLS software, KMO and Bartlett tests were used to ensure sufficient sample size. In performing factor analysis, one must first make sure that the available data can be used for analysis or not. This test is used for this purpose. If the value obtained for the KMO index is higher than 0.7 and close to one, the desired data (sample size) is suitable for factor analysis, otherwise (less than 0.7) the results of factor analysis for the case data. In addition, if the significance level of Bartlett test is less than 5%, it indicates that factor analysis is appropriate to identify the factor model. The results of this test are presented in Table 3.

Structural Equation Modeling Results

The results of fitting the measurement model. According to the PLS-SEM algorithm, in the first stage, the measurement models were evaluated. Results of evaluation

of reliability criteria (Cronbach's alpha and combined reliability), Convergent Validity and the results of measuring the factor loads of research variables in Tables 4 and 5. It shows that the values obtained for factor loads are higher than 0.5, Cronbach's alpha is higher than 0.7 and the combined reliability is higher than the set criterion, i.e. 0.7. In addition, the result obtained from the convergent validity criterion shows that the convergent validity values of all research structures are higher than the standard value of 0.5. The Heterotrait-Monotrait Ratio (HTMT) index was used to assess the divergent validity of the research structures. Hensler et al. (2016) introduced this index. The HTMT index replaces the old Fornell-Larker method. HTMT standard limit is 0.85 to 0.9. Divergent validity is acceptable if the values of this criterion are less than 0.9. The test results of this index are presented in Table 6.

After obtaining the results of the values of factor loading 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.

The results of Fitness of the model. Upon fitting the measurement models, we shall fit the structural model (conceptual model) and subsequently test the research hypotheses. However, P-value, t-value, R2, and Q2 indices were utilized to fit the research conceptual model.

R2 is an essential criterion for checking the fit of the research conceptual model. Three values are introduced as the acceptable value, namely 0.19, 0.33, and 0.67, which show the weak, medium, and strong criteria of the R2 criterion, respectively. The results of this test are presented in Figure 2.

The results obtained from the test of this index showed that the structural model of the research has an acceptable fit.

T-value: In the partial least squares method, various indices are applied to evaluate the structural model; one of the most important indices is the T-value index. If the value of the t statistic is greater than 1.96, at the 5% error level, it indicates the correctness of the relationship between the studied structures. The results are presented in Figure 3.

P-Value is for measuring the appropriateness of the model to evaluate whether the test results are random or not. However, the value merely determines a cut-off point based on which we claim that the findings are statistically significant. Regarding the acceptable level of this index, many researchers state that the threshold should be less than 0.05. The results of the index are presented in Figure 4.

Q2: The index was first introduced by Stone (1974) and determines the predictive power of the model. However, Hensler et al. (2016) introduced three values of 0.02, 0.15, and 0.35, which indicate the weak, medium, and

Table 4. Model fitting results: factor loadings

Item	Factor loading
<i>New technologies</i>	
Our company invested in R&D to produce quality products	0.637
Our company used new technology in the production process	0.735
Our company used new methods/procedures in production and service delivery	0.616
Our company used new technology in marketing new products	0.655
Our company market share has increased due to the use of the new technology in marketing	0.729
Using technology, we pay only for what we use	0.837
Customization using technology is easy	0.887
When we use technology, we find it difficult to integrate the existing work with the web based services	0.821
When we perform many tasks together, using technology, it takes up too much of my time	0.759
<i>Sustainable organizational performance</i>	
Our company adhering to reduce paper use	0.805
Our company adhering to reduce hazardous waste/scrap	0.813
Our company adhering to reduce in consumption of gasoline/fuel	0.832
Our company adhering to build partnership with green organizations and suppliers	0.680
Our company adhering to improve of environmental compliance	0.713
Our company adhering to use environmental friendly material	0.641
<i>Green human resource management practices</i>	
Our company adhering to select employees based on environmental criteria	0.768
Our company adhering to attract employees through environmental commitment	0.553
Our company adhering to provide environmental training to the employees	0.811
Our company adhering to provide environmental training to the managers	0.881
Job description in our company includes environmental responsibilities	0.669
Our company adhering to involve its employees in environmental issues	0.709

Source: authors.

Table 5. Model fitting results - Cronbach's Alpha, Combined Reliability, Convergent Validity

Component	Cronbach's Alpha	Combined Reliability	Convergent Validity
New technologies	0.908	0.918	0.585
Sustainable organizational performance	0.745	0.827	0.545
Green human resource management practices	0.766	0.841	0.569

Source: authors.

Table 6. Discriminant validity

	I	II	III
I			
II	0.640		
III	0.581	0.873	

Note: I — New technologies; II — Sustainable organizational performance; III — Green human resource management practices.

Source: authors.

strong predictive power of the structure, respectively. The results are reported in Table 7.

The results of Table 7 show that the fit of the model is good and the model has good predictive power.

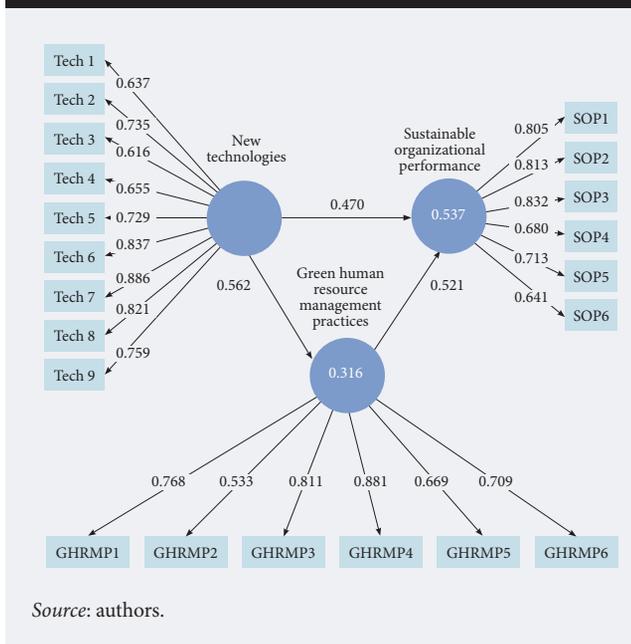
Hypothesis test results

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 significant coefficient in the t-value index for each path is more than 1.96 and the P-value is less than 0.05, the corresponding path is confirmed at the 95% confidence level and the related hypothesis is confirmed. The results are reported in Table 8.

Discussion and conclusion

Sustainability and sustainable performance is the main issue of organizations in the 21st century (Zhao et al., 2021). On the other hand, the use of new technologies in various fields, including technology and digitalization in their nature, has caused a very dynamic environment with many changes to lead organizations to

Figure 2. R² values



achieve continuous improvement (Vidmar et al., 2021). In a situation where digitalization has affected all sectors of society, organizations in various industries, including the automotive industry, have the opportunity to use new digital technologies such as the Internet of Things and artificial intelligence to put their companies on a sustainable path. (Ziyadin et al., 2019).

The dynamism and developments of the new era originate from two important factors, the movement toward sustainability and the use of new technologies. In this, the role of human resources is very important and decisive (Martins et al., 2021). Studies show that one of the most important reasons for the failure of

human resource management in the field of sustainability is the lack of use of the approach of implementing green human resource management practices in various organizations, including production organizations. Therefore, human resource specialists and managers can make a great contribution to the sustainability of the organization by implementing green human resource management practices, including hiring and training green employees (Hossain, 2021).

The purpose of the current study was to investigate the role of new technologies and the implementation of green human resource management practices in the achievement of sustainable organizational performance by Iranian automotive industry companies. The results of the hypotheses test showed that the use of new technologies in the field of technology by the studied companies will be very effective in achieving the sustainable organizational performance of this company, and the implementation of green human resource management practices can be effective.

Analysis of hypothesis test results

The results of the first hypothesis test showed that new technologies directly predict and explain 0.470 of the changes related to sustainable organizational performance. The investigation shows that the obtained results were consistent with the research results of (Alraja et al., 2022; Di Vaio, Varriale, 2020). This result further supports the idea that automobile companies in Iran can move in the direction of development and sustainable organizational performance by benefiting from new technologies such as the Internet of Things and Blockchain in various sectors, including the supply chain sector. Today, when many companies, including car manufacturers, are facing the challenge of destroying the environment through production technologies, Iranian car companies can reduce the harmful effects by taking measures such as optimizing car engines and using suitable fuels.

The results of second hypothesis test showed that new technologies directly predict 0.562 of the changes related to the implementation of green human resource management practices. The review shows that the obtained results were consistent with the research results of Zhao et al. (2021) and Ojo et al. (2022). This result supports the idea that automobile companies in Iran can move towards the effective implementation of green human resource management practices by benefiting from new technologies such as artificial intelligence, learning management systems (LMS), and cloud computing.

The implementation of green human resource management practices through the existing infrastructure in modern technologies can bring benefits such as facilitating trust in the organization's management, improving safety and as a result a better organizational atmosphere and fewer accidents at the workplace, preventing more pollution, saving costs. The organization

Figure 3. T-Values

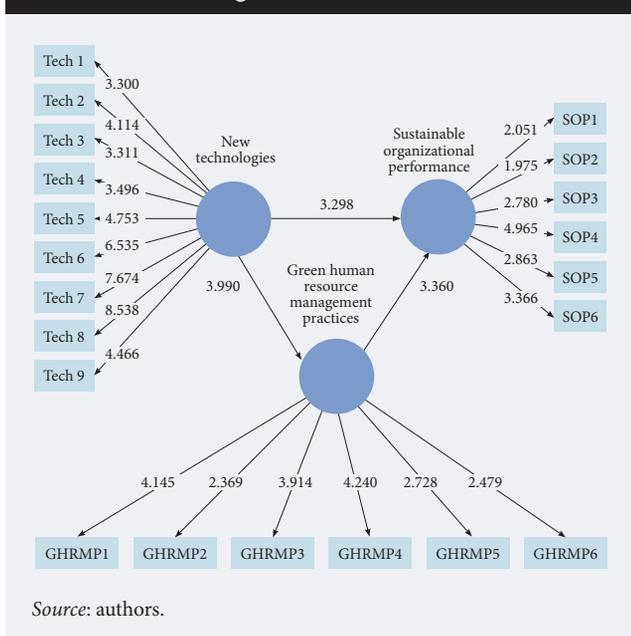
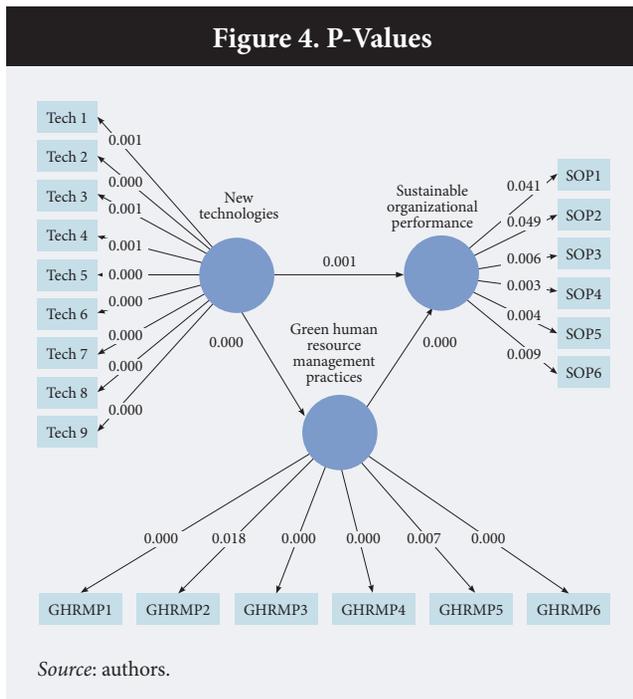


Figure 4. P-Values



should improve the environmental performance of the organization and increase the sale of green products to customers who want to buy green products for Iranian automobile companies.

The results of third hypothesis test showed that the implementation of green human resource management practices has a positive effect on the sustainable organizational performance of the studied companies, and green human resource management practices directly predict 0.521 of the changes related to sustainable organizational performance. The investigation shows that the obtained results were consistent with the research results of (Zaid et al., 2018; Mousa, Othman, 2020; Bazrkar, Moshiripour, 2021).

This result further supports the idea that automobile companies in Iran can strengthen their employees’ environmentally friendly behavior by applying green human resource management practices, including green recruitment and selection, green training, and green performance management. Achieving sustainable organizational performance is based on the awareness of human resources regarding their position in the organization and the position of other physical and non-physical resources in the organization, and demands a sustainable performance style for all parts of the organization and is against excessive consumption, waste of resources and Attention to environmental issues. One of the most important approaches in strategies related to the improvement of sustainable organizational performance among Iranian small-scale manufacturing companies is the wise use of resources. As a result, the managers of these companies can step in the path of sustainability by strengthening this thinking and creating a green corporate culture.

The results of the fourth hypothesis test showed that

new technologies indirectly predict 0.295 of the changes related to sustainable performance, and in this, the mediating role of green human resource management practices is confirmed. The investigation shows that the obtained results are consistent with the research results of Wang et al. (2021) and Alraja et al. (2022). This result shows that automobile companies in Iran can invest in modern technologies and green human resource management practices to produce products with less environmental pollution, strengthen knowledge and increase awareness and improve employees’ attitudes towards Promoting environmentally friendly behaviors. The results of this study provide clear evidence that the use of new technologies as one of the vital inputs of the organization provides better conditions for companies active in the automotive industry to achieve sustainable performance.

Examining the results of path coefficients shows that there is a strong relationship between new technologies and green human resource management practices. Active companies can use this strong relationship to achieve sustainable performance and green human resource management practices. Implementation of methods such as selection and green hiring and green training in the context of new technologies will bring many benefits such as reducing costs and strengthening the organizational green culture.

It is very important to understand that the managers of automobile companies in Iran should keep in mind that when the company’s performance is developed and improved through the provision of new technology infrastructure as well as the application of green human resource management practices, the market share would increase. In addition, the delays caused by the lack of trust of the customers will be reduced, and as a result, more opportunities will be created for these companies in the domestic and foreign markets. In addition, by reducing energy consumption that is obtained using new technologies, it will reduce production costs and thus increase profitability.

Practical and Academic Implications

The results of this study motivate the managers of the company’s active in Iran’s automotive industry and the policy makers of this industry to focus on one of the most important internal factors, i.e. technology factors,

Table 7. Q² results

	SSO	SSE	Q ²
New technologies	270.000	270.000	
Sustainable organizational performance	180.000	155.732	0.132
Green human resource management practices	180.000	157.332	0.126

Note: Q²=(1-SSE/SSO)
Source: authors.

Table 8. Hypothesis test results

Hypotheses	β	T-Value	P- Value	Result
Tech \rightarrow SP	0.470	3.298	0.001	Support
Tech \rightarrow GHRMP	0.562	3.990	0.000	Support
GHRMP \rightarrow SP	0.521	3.360	0.000	Support
Tech \rightarrow GHRMP \rightarrow SP	0.295	2.365	0.006	Support

Source: authors.

compared to external environmental factors. In addition, encourage an environmentally friendly culture through the implementation of green human resource management practices, in which various internal and external stakeholders adopt more environmental policies and regulations.

Company managers can use the findings of this study to actively develop sustainable performance strategies in response to environmental constraints. Accordingly, managers and decision makers of this industry are advised to take actions such as: 1) Using new technologies such as artificial intelligence, Internet of Things, and cloud computing in all departments of the organization, including the company's production department. 2) Benefiting from new technologies such as the electronic learning system in the field of teaching the principles and concepts of green management to employees. 3) Plan and implement green human resource management practices, including green hiring, green

training, green employee performance management, and green reward management in order to strengthen environmentally friendly behavior among the company's employees.

Limitations and Future Research

This study has limitations that may require more research in the future. First, the model developed in this study is based on the direct relationship between new technologies and sustainable organizational performance and an indirect relationship emphasizing the mediating role of green human resource management practices. Therefore, it is suggested that researchers use other effective components such as organizational culture and employee satisfaction in future research. Secondly, since the current study was exploratory, the findings of the research are limited to the size of the statistical population under study, i.e. companies active in the Iranian automotive industry, and if the size and location of the statistical population change. The results may change, therefore it is suggested to implement the subject of this study in other industries and compare the results with the results of the present study to develop knowledge related to sustainable organizational performance. Thirdly, the existence of different opinions regarding the questionnaire items among the members of the statistical sample can affect the results of the research to some extent, on this basis, it is suggested that the researchers in future research, in addition to this, identify other factors and control variables and consider their effect.

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