

Meta-analysis of the relationship between green human resource management and green sustainable performance

Leili Naderi¹, Amirali Foukerdi², Rasoul Sanavifard³, Hamidreza Yazdani⁴

1. Department of management, Qom Branch, Islamic Azad University, Qom, Iran
naderyen@gmail.com

2. Department of Management, Faculty of Management and Economics, University of Qom, Qom, Iran
E-Mail: r.foukerdi@qom.ac.ir

3. Department of management, Qom Branch, Islamic Azad University, Qom, Iran
dr.sanavifard@gmail.com

4. Department of Business, Farabi collage, University of Tehran, Iran
hryzdani@ut.ac.ir

*Corresponding Author Email (r.foukerdi@qom.ac.ir),
ORCID: 0000-0002-9260-923X

Abstract

BACKGROUND AND OBJECTIVES: The role of green human resource management is the foremost part of the green management, since the most basic mission of green human resource management is to utilize green measures to improve the economic, social, operational and environmental circumstance of the organization. Given the importance and necessity of this, with the studies conducted on national and international research, it can be pointed out that so far no systematic and classified review of the results obtained from research related to the subject has been performed. In fact, among the existing meta-analytic researches, no research has studied the relationship between green human resource management and sustainable green performance; therefore, the current study can create a new topic of research and by performing a meta-analysis on scientific findings related to this field can provide an integrated model of green human resources and sustainable green performance. This model can also help to better understanding the factors that lead to the development of the sustainable performance of organizational processes and give managers the opportunity to identify and implement important techniques in the process of improving the sustainable green performance in the human resource sector.

METHODS: The present study aims to quantitatively combine the results of researches conducted in the field of green human resource management using meta-analysis method. The statistical population of this research includes 62 valid scientific articles that have been published in the years 2005 to 2020 using quantitative methods on the subject of green human resource management and sustainable green performance. Out of these studies, 42 articles were selected for statistical sampling and analyzed using CMA2 software.

FINDINGS: After calculating the effect size of fixed and random combinations related to each of the variables, it was found that 5 components of recruitment and employment, training and development of human resources, performance appraisal, reward, employee participation and teamwork as the most important and effective components of green human resource management variables. Among these, the highest frequency was related to the variable of human resource development and training with the frequency of 31 and the effect size of 0.298 and the lowest frequency was related to the employee participation and teamwork variable with the frequency of 11 with the effect size is 0.306. Also, among the components of sustainable green

performance (environmental, economic, operational and social performance), only 1 component of environmental performance with a frequency of 10 and an effect size of 0.262 is the most effective component of sustainable green performance.

CONCLUSION: the findings showed that after determining the relationship between the component of green human resource management as an independent variable and the variable of sustainable green performance as a dependent variable; the characteristics of each variable were identified and finally an integrated model of green human resource management and sustainable green performance was extracted.

Keywords: Integrated model; Green HRM; Meta-analysis; Sustainable green performance

INTRODUCTION

In recent years, the rapid economic growth associated with environmental problems such as ozone depletion, rapid deforestation, climate pollution, global warming, acid rain, etc. has become a threat to human quality of life. In the face of this trend, some organizations have tried to improve their environmental performance and gain a competitive advantage by complying with environmental laws and standards, increasing customer knowledge and reducing the negative environmental effects of products and services (Seuring and Müller 2008). Having a competitive advantage in the organization makes it more sustainable, and sustainability means the ability to do business in the long run with the aim of maintaining economic, environmental and community welfare (Daily *et al.*, 2012). Researchers believe that the four dimensions of economic, social, operational and environmental performance are among the goals of any company to achieve a sustainable competitive advantage (Zhu *et al.*, 2013). According to researchers, environmental disturbances in organizations are often caused by human activities. Therefore, one of the basic approaches to end such disorders can be to study and change human behavior in the form of green management measures. Green management is a set of comprehensive management activities based on the idea of supportive development and aims to reduce or eliminate the effects of production, marketing, financial and Human Resources (HRs) activities on the environment. Among these, green HRM is the most important part of green management, because the most basic mission of green HRM is to use green measures to improve the economic, social, operational, and environmental situation of the organization (Renwick *et al.*, 2013). The role of green HRM is to ensure the purposefulness of

training programs designed to increase staff awareness of environmental initiatives and increase their technical, managerial and operational skills in this area, in fact, human factors are the basis of change management and are very effective in greening organizations (Daily and Huang, 2001). Green HRM includes various actions of HRM including green selection and employment, green performance evaluation, green development and training, teamwork and green relationships, reward and compensation of green services that understand and promote green behavior in the organization. Green HRM measures, lead to a positive effect of employees on the performance of the organization, create a competitive advantage and reduce environmental impact (Masri and Jaaron, 2017). Since the environmental protection has been an important issue in recent decades, and almost every industry and manufacturing company uses environmental protection guidelines, therefore, eco-friendly organizations and companies are looking to find Methods and techniques to reduce the environmental impact on the course of their activities. In fact, the goal of most environmentally friendly companies is to eliminate waste and, by its nature, increase the company's efficiency, and since green HRM affects the environmentally friendly behavior of employees and the company's sustainable performance; therefore, the HRM department plays an important role in strengthening the economic, social, environmental and operational outputs of manufacturing companies and ultimately their sustainable performance (Zaid *et al.*, 2018), considering the important role of employee behavior. On the other hand, many researchers have pointed out that HRM practices have a significant impact on outcomes such as employee satisfaction, employee commitment, employee retention, and employee presence,

social conditions among employees and employee participation management, employee trust, employee loyalty, organizational fairness and green HRM measures will facilitate trust in the organization's management, improve safety, and as a result, a better organizational climate and fewer accidents. Green HRM measures also save the costs of manufacturing and service companies by reducing waste, reducing energy consumption and recycling activities in general, as well as improving the image of companies (Mishra, 2017). Thus, green HRM measures contribute to both the environmental and economic and social benefits of companies and organizations; in other words, the effect of green HRM measures can improve the economic, social, environmental and operational performance of companies and organizations. Also, in recent years, the issue of green HRM has been increasingly considered by industry activists and academic researchers. In particular, academics are interested in knowing whether green HRM measures can lead to good performance in companies and organizations, and if so, what the consequences will be (Järlström, 2018). In addition, the results of empirical studies on the effect of green HR actions on the performance of companies and organizations are not certain and convergent. For example, preliminary studies emphasize that green HRM measures do not help improve corporate economic performance because pursuing and implementing these measures in the first steps requires investment and increased operating costs and therefore has a negative impact on corporate economic benefits. In contrast, recent studies confirm the positive relationship between green HRM practices and economic performance (Rani and Mishra, 2014). In addition, researchers have considered different contextual and contingent variables when analyzing the effect of green HR management measures on sustainable performance (Mousa and Othman, 2020). These divergent and contradictory results in applied studies need to gain a better insight into the link between green HRM practices and sustainable performance in companies and organizations.

Research background

Taleghani *et al.* (2016), evaluated the impact of HRM tools and their dimensions on the organizational performance in an article entitled "exploring the effects of HRM tools on increasing organizational efficiency of the staff in University of Tehran". The study's statistical population included university employees and human resource managers. The data analysis method was the structural equation modeling technique using the path analysis technique in LISREL software. The results of the hypothesis analysis showed that Human Resource Management (HRM) tools have a positive and significant influence on the organizational performance of the university. Mohammadnejad Shourkaei *et al.* (2016) in an article entitled "Providing a framework for green HRM" by conducting a qualitative research on green HRM provided a framework. To extract this framework, while studying 39 articles published in reputable human resources journals from 2000 to 2016, 14 Human Resource (HR) experts were interviewed, and using the theme analysis method, the obtained data were analyzed and the themes and concepts were extracted. In the form of a framework of content, context, and implications of green human resources. Seyed Javadin *et al.* (2016) in an article entitled "green HRM, an investment approach and sustainable development" examined green HRM focusing on human capital and environmental management programs. In this study, while introducing human capital as a key factor in sustainable development and economic development, a model for managing green human resources was used using a hybrid method based on the experiences of researchers in 2010-2015. The overarching goal is to create an integrated and new interpretation of the findings. This methodology has been adopted to clarify the concepts, patterns and results in refining existing states of knowledge and the emergence of operational models and theories. The results showed that training in green HRM activities, selection and recruitment and reward systems are the top three priorities in ranking green human resources and organizational environment management. Bourghani *et al.* (2017) in an article entitled "Effect of green HR factors on the environmental performance of production organizations" examined the impact

of green HR factors on the environmental performance of production organizations in petrochemical companies. This study is an applied and descriptive correlational study, in which the statistical population includes experts and human resource managers in the environmental management system and the safety and health management of the companies. Companies operating in the petrochemical industry were randomly selected as the statistical sample, form. Data analysis using structural equation modeling shows the impact factor of senior management's commitment to environmental management, environmental training for employees, teamwork of employees, etc. employee engagement, employee environmental rewards, and environmental programs for the organization's performance are positive and meaningful. But the impact of employee communication and environmental cooperation on organizational performance is negligible. Bourghani *et al.* (2017) in an article entitled "Effects of green human resources factors on the environmental performance of production organizations" examined the effects of green human resources factors on the environmental performance of production organizations in petrochemical companies. This research is an applied and descriptive-correlational study in which the statistical population were the experts and human resource managers in the environmental management systems and safety and health management of companies operating in the field of

petrochemicals that were randomly selected as a statistical sample. Analysis of data using structural equation modeling showed that the impact factor of senior management commitment to environmental management, employee environmental training, employee teamwork, employee participation, environmental rewards to employees, and environmental programs on the performance of the organization was positive and significant, but the impact of employee communication and environmental collaboration on organizational performance was not significant. Masri *et al.* (2017) performed a research entitled "A review of green HRM practices in manufacturing plants in Palestine". This study addresses the green management of human resources using HRM practices to enhance environmentally friendly practices and increase employee commitment environmental sustainability issues. Using quantitative and qualitative aspects, this study examines six key measures of green HRM that have been used in manufacturing organizations. The identified methods including: Green selection and recruitment, Green development and education, Green evaluation and performance, Green rewards and service compensation, Green staff participation, and Green Organizational culture management have been defined as Organizational environmental performance of the main action of green management of human resources. The conceptual model presented in the paper by Masri *et al.* (2017) is shown in Fig. 5.

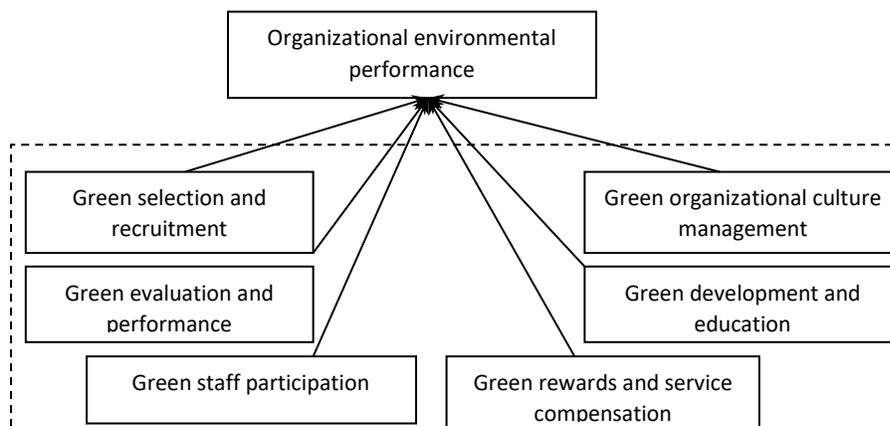


Fig. 5: The conceptual model (Masri *et al.*, 2017)

Yousef *et al.* (2018) in an article entitled "linking green human resource management software package and environmental performance in the Malaysian hotel industry: the mediating role of organizational citizenship behavior towards the environment", showed that environmental issues are of the important components key in the trade sustainability. Hence, many organizations implement active environmental performance plans in most industries to achieve a competitive advantage, such as green HRM. In this study, a research model is used to determine how the collection helps to improve environmental performance in the Malaysian hotel industry through organizational citizenship behavior towards the environment. Bombiak *et al.* (2018) in an article entitled "Green HRM as a tool for sustainable enterprise development: The experience of a young Polish company" emphasizes that the growing role of development sustainability and above all its environmental aspects in the development of a competitive advantage for a modern business are behind the prevalence of integrating environmental practices into HR policy. The purpose of this study was to identify HRM measures that are environmentally friendly and have been accepted by young Polish companies whose prioritization has been done according to their impact on the sustainable development of the company. This study showed that the concept of green HRM exists in Poland and a strong correlation between evaluating the impact of individual activities in green HRM on the sustainable development of the company and their practical implementation is existed. In addition, it was found that increasing awareness and dissemination of knowledge is essential to increase the impact of green HRM on sustainable development in young Polish companies. Ren *et al.* (2018) in a review article entitled "Emerging research in green HRM: a study and future orientations", defined that increasing awareness of environmental sustainability regulations, the concept of green HRM to determine effective environmental management in the organization are effective. In addition, a better understanding of research opportunities and the advancement of theoretical and experimental development provide the scientific basis for the emergence of green HRM. This review demonstrates an

integrated model of green HR management practices, their outcomes and consequences. Achieving such a vision is necessary because the method and level of implementation of green HRM measures can be different. Therefore, the purpose of this study is to achieve the generalizability of the relationship between green HRs actions and green performance of companies and organizations by providing an integrated model taking into account the role of contingent factors involved in this regard and it can be noted that the results of the current research can be used by managers of organizations and service and manufacturing companies, and they will be able to take a proper step to increase the productivity and green performance of their organizational units by using a correct model. Experimental studies meta-analysis during the years 2005 to 2020 are used to develop and refine green HRM measures and their effect on various aspects of green performance of organizations and companies. Meta-analytic methodology by aggregating the results of scattered research and extracting a comprehensive model of these studies helps to gain a new perspective and expand the boundaries of knowledge in the field of green HRM and sustainable green performance. Therefore, according to the mentioned cases regarding environmental challenges and their importance, as well as the lack of theoretical knowledge and integrated research and divergence of studies on green HRM measures and their impact on sustainable green performance in companies and organizations, the purpose of this research is to answer the question of "What is the integrated model of the relationship between green HRM and sustainable green performance in companies and organizations?" The current study have been carried out in Tehran in 2021.

MATERIALS AND METHODS

The present study is a meta-analysis. In this method, the researcher combines the results of various researches and extracts new and coherent results using powerful statistical methods. In meta-analysis, the researcher, by recording the characteristics and mass findings of research, prepares them to use robust statistical methods in the form of

quantitative concepts. The information of this research has been collected through documentary study (library) and searching in the databases of scientific-research journals in the national and international scale on the subject of green HRM and sustainable green performance from 2005 to 2020. The statistical population of the present study includes, all scientific articles that have been extracted from reputable databases such as Google Scholar, Science Direct and other databases, which is equal to 62 articles and dissertations. In the next step, those articles that had P-value, T-value and other statistics were separated. According, 42 articles that had the conditions and selected criteria in terms of having the mentioned statistics; were acceptable and were considered to quantitatively combine the results and obtain a single result. In meta-analysis, one should seek to find a value called the effect size so that by obtaining it for each hypothesis, a criterion for comparing and examining these hypotheses would be available (Ghorbanizadeh *et al.*, 2013). From the aspect of purpose, the present research is in the category of

developmental and applied researches and is considered as a descriptive-analytical type based on the characteristics of the subject. After extracting the information and determining the sample size, the information of each article was coded. The coding form is a data collection tool used in meta-analysis. After extracting the information and determining the sample size, the information of each article is coded. The coding form is a data collection tool used in meta-analysis. This form is equivalent to a questionnaire or interview form in other types of research. The coding form contained multiple parameters performed by the researchers. The assignment of codes can include several items such as the subject of the articles, the researcher's name, the sample size and the statistical population, and the software used, and the correlation of those studies. Table 1 provides general information on the researches (42 articles reviewed). Then the frequency of variables was examined and the variables with a frequency of 5 or more were selected and finally, the effect size of each them was calculated.

Table 1: General information of the researched studies (42 articles reviewed)

Row	Research	Variables	Variables symbolizatio	Sig /p-	t-value	correlatio n	sampl e size
1	Mohammadnejad Shurkai (2017)	Recruitment and	A		11.91		120
		Development and	B		38.34		
		Performance	C		16.39		
		Payment and	D		13.05		
		Environmental	J		3.287		
2	Taleqani et al. (2016)	Organizational	K(Mod)		3.104		384
		Recruitment and	A		4.78		
		Development and	B		6.44		
		Recruitment and	E		5.67		
		Employee	G		6.64		
3	Oreja-Rodríguez Armas-Cruz (2012)	Environmental	J		6.05		153
		Green supply chain (mediator)	L(med)		3.199		
					2.291		
4	Nasrollahi et al. (2019)	Environmental	J		2.291		138
		Green supply	L(med)		2.189		
		Payment and	D		5.05		
		Development and	B		4.41		
		Economic	P		6.51		
	Operational	O		7.57			

		Environmental Social	J R	8.31 4.98		
5	Jabbour et al. (2010)	Recruitment and Development and Payment and	A B D		0.458 0.367 0.297	170
6	Daily et al. (2012)	Development and Environmental	B J	0.000 0.002		220
7	Benn et al. (2015)	Employee Environmental	G J		0.581 0.297	657
8	Cheema and Javed. (2017)	Organizational Sustainable Payment and	M N D	0.000 0.04 0.026	4.787 6.344 74.23	273
9	Nejati et al. (2017)	Recruitment and Development and Payment and Environmental Resistance to	A B D J S	0.001 0.1 0.002 0.048 0.048	2.225	250
10	Yusliza et al. (2017)	Recruitment and retention of HRs Payment and	A D		4.079 3.761	400
11	Masri et al. (2017)	Development and Recruitment and Payment and performance Environmental Development and Green	B A D C J B I		1.943 2.675 5.33 1.606 2.66 5.766 6.349	130
12	Renwick et al. (2012)	Development and Employee	B G	0.000 0.002		178
13	Tang et al. (2018)	Recruitment and Development and Payment and	A B D	0.002 0.004 0.002		140
14	Yusoff et al. (2020)	Recruitment and Development and performance Green service	A B C T	0.89 0.033 0.992 0.013	1.702 2.13 0.01 2.497	225
15	Rawashdeh (2018)	Recruitment and Development and Payment and Environmental	A B D J	0.001 0.000 0.002 0.04	4.12 3.9 3.94 2.179	108
16	Bon et al. (2018)	Recruitment and Development and Green service Green supply	A B T L(mod)	0.002 0.045 0.03 0.033		110
17	Yusoff (2019)	Organizational Employee	K(mod) G	0.005	2.811 2.924	250
18	Chaudhary (2020)	Payment and Performance Development and Recruitment and Environmental Gender (Modifier)	D C B A V(mod) X(mod)		5.446 3.287 3.493 2.998 2.782 0.123	192
19	Gilal et al. (2019)	Environmental enthusiasm	V(mod) Y(mod)		3.255 7.251	214

20	Roscoe et al. (2019)	Green Organizational	I(med)	0.002	3.891	240
21	Al-Romeedy (2019)	Green analysis of	Z	0.001		237
		Green HR	AA	0.026		
		Recruitment and performance	A	0.041		
		Development and Payment and	C	0.001		
22	Chaudhary (2019)	Employee	D	0.009		200
		Payment and performance	D		2.125	
		Development and Recruitment and	C		2.993	
		Green service	B		3.469	
23	Shah (2019)	Job analysis and Management and performance	A		2.468	378
		Recruitment and Development and	T		23.84	
		Green safety and	AB		3.145	
		Recruitment and Development and	Z		2.179	
24	Pham et al. (2019)	Employee performance	F		2.985	203
		Recruitment and Development and	C		3.485	
		Development and Employee performance	A		3.698	
		Recruitment and Development and	B		2.371	
25	Saeed et al. (2019)	Environmental	G		2.998	347
		Development and Employee performance	B		3.589	
		Recruitment and Development and performance	G		2.158	
		Payment and Environmental	C		2.989	
26	Zhang et al. (2019)	Environmental	A		14.89	145
		Recruitment and Payment and	B		2.947	
		Development and performance	C		2.131	
		Payment and Environmental	D		2.297	
27	Singeh et al. (2020)	Environmental	K(med)		2.426	669
		Recruitment and Payment and	AD		3.489	
		Development and Management	A	0.036		
		Information needs	D	0.001		
28	Yu et al. (2020)	Green capability	B	0.018		126
		Payment and Green innovation	AE	0.003		
		Green supply chain (mediator)	AF(med)	0.008		
		Green analysis of	AG	0.028	29.42	
29	Mousa and Othman (2020)	Payment and Green innovation	D	0.018	30.13	69
		Recruitment and Development and	AH(med)	0.015	30.20	
		Green analysis of	L(med)	0.003	5.947	
		Recruitment and Development and	D	5.738		
30	Yong et al. (2020)	Green analysis of	A	4.198		112
		Recruitment and Development and performance	B	3.848		
		Payment and Senior	Z	0.18	0.915	
		Employee	A	0.048	0.146	
31	Borghani et al. (2017)	Development and Payment and	B	0.02	2.056	234
		Green HR	C	0.484	0.04	
		Senior Employee	D	0.325	0.454	
		Development and Payment and	AJ		4.63	
32	AnuSingh et al. (2015)	Green HR	G		1.56	130
		Senior Employee	B		4.86	
		Payment and Green HR	D		2.47	
		Senior Employee	AA		5.72	
33	Rezaei et al. (2019)	Payment and Green HR	AJ	0.023	2.303	40
		Job analysis and Green HR	G	0.284	1.075	
		Recruitment and	D	0.901	0.125	
		Recruitment and	AA	0.000	4.751	
		Recruitment and	Z		2.887	
		Recruitment and	AA		4.085	
		Recruitment and	A		3.911	

		performance	C	4.835	
		Development and	B	2.451	
		Payment and	D	3.713	
		Green safety and	AB	4.169	
34	Bangwal et al. (2017)	Development and	B	2.158	700
		Payment and	D	3.928	
		Workplace energy	AM	4.992	
		Work style	L(med)	5.7	
		Personal life	AL(med)	1.07	
35	Pinzone et al. (2016)	Green service	T	1.96	217
		performance	C	2.29	
		Employee	G	3.14	
36	Rastegar et al. (2019)	Senior	AJ	6.895	236
		Environmental	K(med)	3.196	
		Environmental	J	3.25	
37	Nobari et al. (2018)	Recruitment and	A	6.38	259
		Development and	B	8.37	
		performance	C	6.91	
		Payment and	D	5.92	
38	Oyedokun, 2019.	Recruitment and	A	2.695	617
		Development and	B	3.255	
		Green service	T	2.458	
39	Pham et al. (2020)	Development and	B	2.658	220
		performance	C	4.569	
		Employee	G	5.369	
		Organizational	K(Med)	2.136	
		Senior	AJ	1.992	
40	Al Kerdawy (2019)	Recruitment and	A	16.81	500
		Development and	B	18.49	
		performance	C	19.76	
		Payment and	D	19.76	
41	Guerci et al. (2016)	Recruitment and	A	6.216	74
		Development and	B	3.758	
		performance	C	3.057	
		Employee	G	16.01	
42	Paille et al. (2020)	Development and	B	16.3	221
		performance	C	15.5	
		Management	AE	13.6	

RESULT AND DISCUSSION

Investigating the frequency of components extracted from sample articles

After examining the components and sub-components of green HRM and sustainable green Performance, the frequency of each was extracted as follows (Table 2). As Table 2 shows, out of 42 approved articles, 31 components were extracted in order to provide an integrated model of green HRM and sustainable green performance using the meta-analysis approach, the results of which will be analyzed based on these components. It is worth mentioning that 13 variables were included in the group of green HRM, 7 variables in the group of green sustainable performance, 8 variables as

mediating variables and finally, 3 variables in the group of moderator variables.

Table 2: Frequency of components of variables in the studies (42 articles reviewed)

Number of repetitions	Symbolization	First-order variables	Second-order variables		Number of repetitions	Symbolization	First-order variables	Second-order variables	
1	M	Corporate social responsibility	1	Sustainable green performance variable ((dependent variable	24	A	Recruitment and employment	1	Green HRM (independent variable
10	J	Environmental performance	2		31	B	Development and training	2	
1	P	Economic performance	3		16	C	performance evaluation	3	
1	Q	Operational performance	4		23	D	Payment and Rewards	4	
1	R	Social performance	5		1	E	Recruitment and retention of HRs	5	
1	S	Resistance to change	6		11	G	Employee participation and teamwork	6	
5	T	Green service compensation	7		2	AE	Management support and involvement	7	
1	Y(med)	Environmental enthusiasm	1	Mediating variables	4	Z	Job analysis and design	8	
1	AF(med)	Information needs	2		4	AA	Green HR planning	9	
1	AH(med)	Green innovation	3		2	AB	Green safety and health	10	
2	I(med)	Organizational Culture	4		1	AM	Workplace energy efficiency	11	
1	AL(med)	personal life	5		1	AG	Green ability	12	
4	L(med)	Green supply chain	6		4	AJ	Senior management commitment	13	
1	N(med)	Sustainable environment	7		1	AD(Mod)	Environmental knowledge (moderator)	1	Modifier variables
4	K(Mod)	Organizational citizenship behavior	8		1	X(Mod)	Gender (Modifier)	2	
				2	V(Mod)	Environmental values (moderator)	3		

It should be noted that in the meta-analysis method, there is no theoretical agreement regarding the number of studies, therefore, the criterion for selecting variables to perform meta-analysis was the number of repetitions (frequency) in at least 5 studies (Mohammadi *et al.*, 2020). Therefore, variables with a frequency of 5 or more were selected for meta-analysis. Since the frequency of all components of

mediating and moderating variables is less than 5; Therefore, mediator and moderator variables are not considered in the model. The frequencies of Table 2 are examined and the frequencies below 5 were screened, and finally the list of selected variables is given in Table 3, and in the next steps, meta-analysis of these variables is considered.

Table 3: Frequency more than 5 for the components of variables (42 articles reviewed)

Second order Variables	First order variables	Symbolization	Number of repetitions	Second order Variables	First order variables	Symbolization	Number of repetitions		
Green HR management (Independent variable)	1	Recruitment and retention of HRs	A	24	Sustainable performance (Dependent variable)	1	Environmental performance	J	10
	2	Development and training	B	31		2	Green service compensation	T	5
	3	Performance evaluation	C	16					
	4	Payment and Rewards	D	23					
	5	Employee participation and teamwork	G	11					

Then, the results are analyzed separately based on data analysis algorithm and meta-analysis.

Significance test of extracted components from the articles and the concept of effect size

One of the most basic concepts in the meta-analysis literature is the concept of the effect size. In a comprehensive statistical definition, the size of the effect is the ratio of a significant test to the volume of the study (Ghazi Tabatabai and Dadehir, 2010). Through a significant test, it is determined whether a particular result occurred due to chance or not, and by calculating the effect size, it can be found to what extent the independent variable has affected the dependent variable. In this step, the

correlation coefficient, lower and upper bound statistics, t-value and P-value significance statistics for each of the selected components extracted from each of the articles are calculated and listed in Table 1. It should be noted that for a component to be meaningful, a T-value statistic value must be obtained for that component above 1.96. On the other hand, through the P-value statistic, the significance or rejection of a component can be interpreted in such a way that the value of the P-value statistic for that component should be less than 0.05. Table 4 shows the output of the meta-analysis software; in which the value of statistics is calculated for the model with fixed effects and the model with random effects. The value of correlation coefficient statistics (effect size) for these two

models is 0.273 and 0.301, respectively. To determine the significance of this correlation value, the values presented under the t-value and P-value columns are examined. As it is shown in Table 4, in the two model with fixed and random effects, the values of t-value and P-value are equal to 59.095 and 0.000, and 16.126 and 0.000, respectively. Hereupon, with 95% confidence and 5% error, it can be claimed that

in the final random and fixed models, these components are significant, so the effect of the collected studies is accepted. Therefore, in the next step, a model can be presented to provide a combined approach to the relationship between green HRM and sustainable green performance in organizations based on the meta-analysis method.

Table 4: Significance test of effect size in 42 reviewed articles

	Impact size	Lower bound	Upper bound	T-value > 1.96	P-value < 0.05
Model with fixed effects	0.287	0.278	0.296	59.095	0.000
Model with random effects	0.310	0.274	0.345	16.126	0.000

Investigating the heterogeneity of studies

One of the main assumptions of meta-analysis is the test of homogeneity of the studies, which is

analyzed using Cochran Q statistic. The results of which are shown in Table 5.

Table 5: Results of Cochran Q statistic of 42 articles

)I ² (I-Squared	P-value	Degree of freedom (Df)	Test value of Q	Statistical index
93.501	0.000	41	2661.956	Results

According to the test results (Q = 2661.956, P-value = 0.000), the null hypothesis that the studies are homogeneous is rejected and the heterogeneity hypothesis between these studies is accepted. In other words, the significance of the Q index indicates the existence of heterogeneity in the size of the effect of the research. However, since this index is sensitive to increasing the number of effect sizes and with increasing the number of effects, the power of this test for heterogeneity increases, so (I²) I-Squared is another index that is used for this purpose. The coefficient of square I has a value from zero to 100% and in fact shows the amount of heterogeneity as a percentage. The closer this value is to 100, the greater the heterogeneity of the size of the effect of the initial research. The results of the coefficient I (I² = 93.501) also confirm the complete heterogeneity of these studies; Therefore, combining them with the

fixed effects model is not justified and the random effects model should be used to combine the results.

Predictive distance

In meta-analysis, the large distance around the size of the mixed effect located at the bottom of the accumulation graph, indicates the predictor distance. The 95% predictive distance represents an interval in which the estimated 95% occurs in future studies, and it is assumed that the actual impact measures in the desired domain have a normal distribution. Table 6 shows the value of the predictive distance for the two models of fixed and random effects, in which the statistics are in the mentioned range and after the acceptance column of the null hypothesis. Hereupon, as mentioned, if future research is done, then it is predicted that the results obtained in the present study will be repeated with 95% confidence level.

Table 6: Predictive distance for the model with fixed and random effects

Model	Study name	Subgroup	Statistics for each study					Correlation and 95% CI						
			Correlation	Lower limit	Upper limit	Z-Value	p-Value	-1.00	-0.50	0.00	0.50	1.00		
Fixed			0.287	0.278	0.296	59.095	0.000							
Random			0.310	0.274	0.345	16.126	0.000							

Research Model

Considering the two models of fixed and random effects in the meta-analysis, in the model of fixed effects, it is assumed that all the differences between the impact sizes observed in different studies are only consistent with the sampling error, it means that there is no heterogeneity. However, there is a heterogeneity in the model of random effects (Viechtbauer, 2010). Meanwhile, the model with fixed effects is automatically covered inside a model with random effects. Since in the present study the impact rate is higher in the model with random effects; therefore, the random effects model is selected and all variables are reported for the model with random effects and the outputs are analyzed based on this.

Check the assumption of publication error (bias)

Another major meta-analysis assumption is the propagation error assumption, which is due to the publication of published research and non-publication of unpublished research of all kinds

of errors in retrieval and collection. One of the problems that distorts the validity of meta-analysis results, is the lack of access of the researcher to all studies that have been performed in a specific time interval and in the subject under study. Meta-analysis uses various methods to investigate diffusion misuse, one of which is the funnel Plot. In the absence of diffusion bias, the funnel plot will be inverted so that the narrow part is facing up and the bottom is facing down. If there is no bias in the research; Then 95% of the studies fall within the confidence interval (Waddington *et al.*, 2012). Drawing a funnel plot in the two modes "impact size-standard error" and "logarithm of chance and accuracy rate (inverse of standard deviation)" (Figs. 1 and 2), determined that the funnel plot is inverted in both cases. As all the studies are grouped at the top of the chart, therefore 95% of the studies are within the confidence interval; accordingly it can be stated that, there is no diffusion bias.

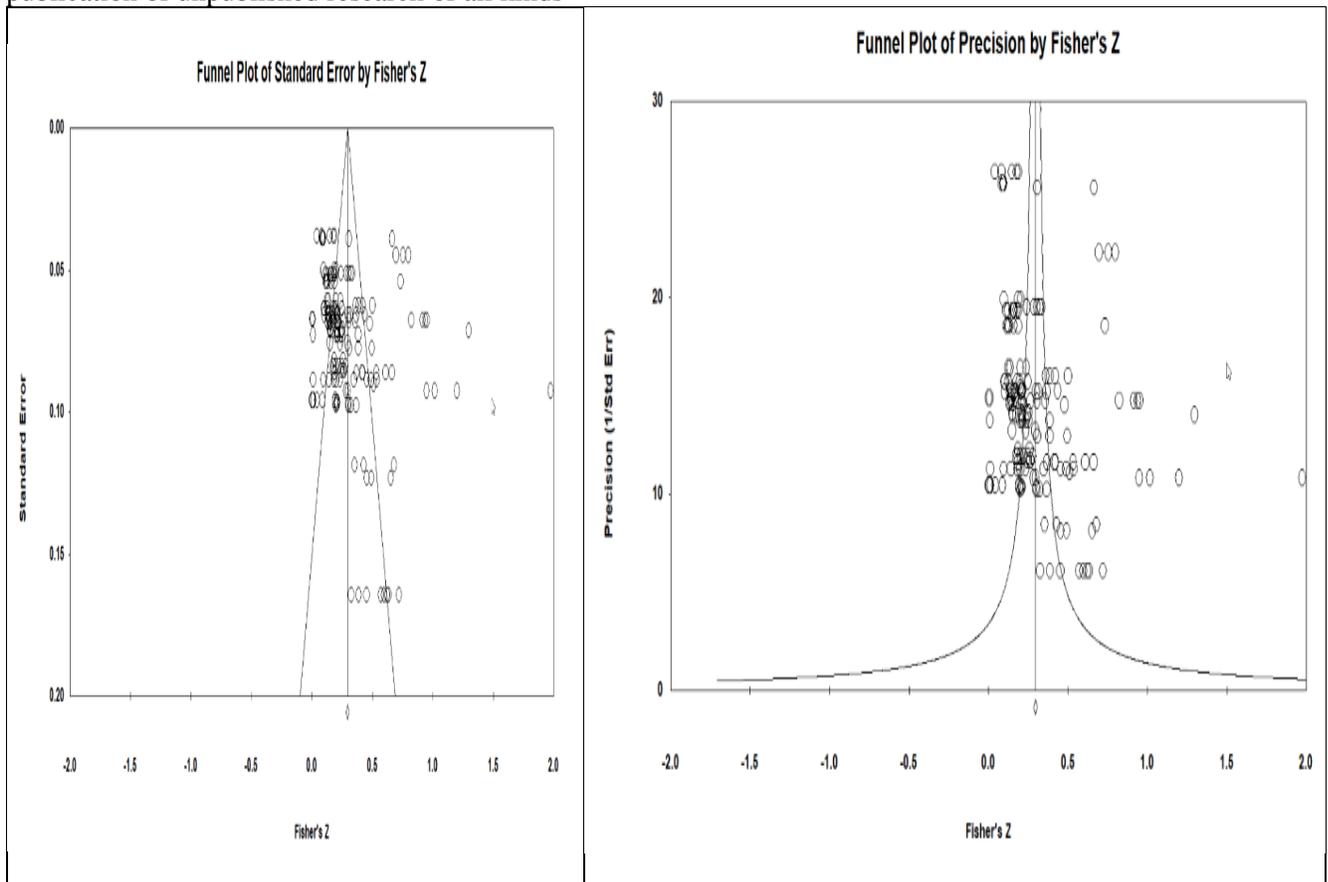


Fig. 1: Funnel diagram showing the spread of impact size and standard error	Fig. 2: Funnel diagram showing the emission logarithm of the odds rate and accuracy (inverse of standard deviation)
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Safe N test

Rosenthal’s error safe N test, calculates the number of missing researches (with zero mean effect) (Niazi *et al.*, 2019) which need to be added to analyzes to obtain the statistical significance of the overall effect. The basic idea of error-free N is to determine the number of studies with zero results that must be present to reduce the probability of type 1 error to a predetermined significance level. Clearly, if a small number of non-significant studies are needed to reduce a result to a significant level, the results obtained are unlikely. Table 7 indicates the N-test results safe from error. In

Table 7, the safe N value is 174, meaning that 174 neutral studies should be added to the study to make the P value of the two ranges greater than 0.05. In other words, for each research observed, there are 58,928 missing studies, which by adding them, the effect is neutralized, and this result indicates the high accuracy of the information and results obtained in the current study. According to the meta-analysis assumptions, the result showed that the model with stochastic effects should be used to combine the results to report the effect size. In the next steps, the effect size report of the studies performed in the stochastic model is presented.

Table 7: Calculation of N safe from error (number of harmless integers) Classic

Statistical index	Z value for observed studies	P value for observed studies	Alpha	Remaining (sequence) Z for alpha	Z for alpha	Number of observed studies	Number of missing studies that bring the P value to alpha.
Results	58.928	0.000	0.05	2	1.96	42	174

Examining the research variables to draw the final proposed model

Table 8 shows the effect size of independent and dependent variables that are listed as selected variables in Table 3 based on Cohen's model. To achieve a very meaningful model with a high impact size, those variables that have a small effect size are ignored and removed from the

model. It is worth noting that first, in order not to lose important variables, the impact sizes are rounded and then a decision is made to remove or take them into account. Variables with low effect size are removed and variables with medium and large effect size are retained in the model.

Table 8: Cohen model of the effect size interpretation system resulting from meta-analysis

Effect size	Effect size range
Low	0.1 < r < 0.3
Medium	0.3 ≤ r < 0.5
High	0.5 ≤ r < 0.8

Investigating the components of the second independent main order of green HRM

To investigate the effects of the green HRM component, considering Table 3, the size of the effects is calculated using CMA software. Table 9 shows the software output.

Table 9: Meta-analysis findings by combining effect size, confidence interval and homogeneity test results for green HRM components

Row	Research variables	Latin symbol	The number of repetitions	Fixed combination effects	Random composition effects	Effect size based on Cohen's table	Fixed effects assurance distance		Stochastic effects assurance interval		Degree of Freedom	Heterogeneity
							Lower bound	Upper bound	Lower bound	Upper bound		
							1	Recruitment and employment	A	24		
2	Development and training	B	31	0.298	0.340	Medium	0.277	0.319	0.241	0.433	30	95.378
3	Performance evaluation	C	16	0.346	0.347	Medium	0.317	0.375	0.203	0.476	8	95.497
4	Pay and Rewards	D	23	0.264	0.297	Medium	0.239	0.288	0.202	0.386	22	92.727
5	Employee participation and teamwork	G	11	0.363	0.306	Medium	0.330	0.394	0.152	0.445	10	94.614

Table 9 shows the measurements of the impact of green HRM components. The meta-analysis first, rounds up the impact sizes and then, based on the Cohen index, selects the impact sizes that were above 0.3 and enters the final model. After removing the variables with an impact size of less than 0.3, it was found that 5 components have been selected for the green HRM variable. The highest frequency related to the variable of HR development and training with symbol “B”, with 31 repetitions and effect size of 0.298. And

the lowest frequency is related to the employee participation and teamwork variables with symbol of “G” with 11 repetitions and effect size of 0.306.

Investigation the second order variable components of the main dependent of green sustainable performance

Using CMA software, the size of the effects of green sustainable performance components (Table 3) is calculated. Table 10 shows the software output.

Table 10: Combined effect size, confidence interval and homogeneity test results for green sustainable performance components

Row	Research Variables	Latin Symbol	The number of repet	Fixed combination effects	Random composition effects	Effect size based on Cohe	Fixed effects assurance distance		Stochastic effects assurance interval		Degree of Freedom	Heterogeneity
							Low	Upper	Low	Upper		

		ition			n's		boun	bou	bou	bou		
		s			table		d	nd	d	nd		
1	Environmental performance	J	10	0.263	0.262	Medium	0.226	0.301	0.185	0.336	9	72.584
2	Green service compensation	T	5	0.136	0.136	Low	0.086	0.185	0.086	0.185	4	0.0000

The results in Table 10 shows the impact measurements of the green-sustainable performance components. The meta-analysis, first, rounds the impact sizes and then, based on the Cohen index, selects the impact sizes that were above 0.3 and enters the final model. After removing the variables with an impact size of less than 0.3, it was found that the number of selected components for the green-sustainable performance variable was 1 component, which includes the environmental performance component with the symbol of “ J “ and the frequency of 10 and the effect size of 0.262. After examining the effect size of the components of each of the main variables of green HRM and sustainable green performance, the research model is formed based on the effect size. A meta-analysis is a statistical analysis that combines the results of multiple scientific studies. Meta-analyses can be performed when there are multiple scientific studies addressing the same question, with each individual study reporting measurements that are expected to have some degree of error. The present meta-analysis has been performed for the first time in scientific studies in this field, and tried to provide an "integrated model of green HRM and sustainable green performance" by providing a slightly more comprehensive combination of research backgrounds between 2005 and 2020. Regarding the comparison of the present study with previous studies, two articles were found that examined the issue quantitatively and qualitatively. Mohammadnejad Shourkai *et al.* (2016) studied green HRM, analyzed previous studies from 2000 to 2016 using theme analysis method, while the present study covers a wider period of time. Seyed Javadin *et al.* (2016) studied green HRM with a focus on human capital and environmental management programs and used the meta-combined method

to study previous research from 2010 to 2015, and showed that training management activities green human resource, green human section and recruitment, green reward systems are the top three priorities in ranking HR and managing the organizational environment while the present study was performed using the meta-analysis method; the study range of previous research was wider and covered researches from 2005 to 2020. The extracted model has independent and dependent variables. In the mentioned meta-analysis, after removing the variables with low effect size, it is that the green HRM variable as an independent variable with 5 components (recruitment, training, and development of HRs, performance appraisal, reward, employee participation, and teamwork) and the green-sustainable performance variable as a dependent variable has 1 component of green environmental performance. Fig. 3 shows the integrated model of green HRM and sustainable green performance, along with the effect size of each component.

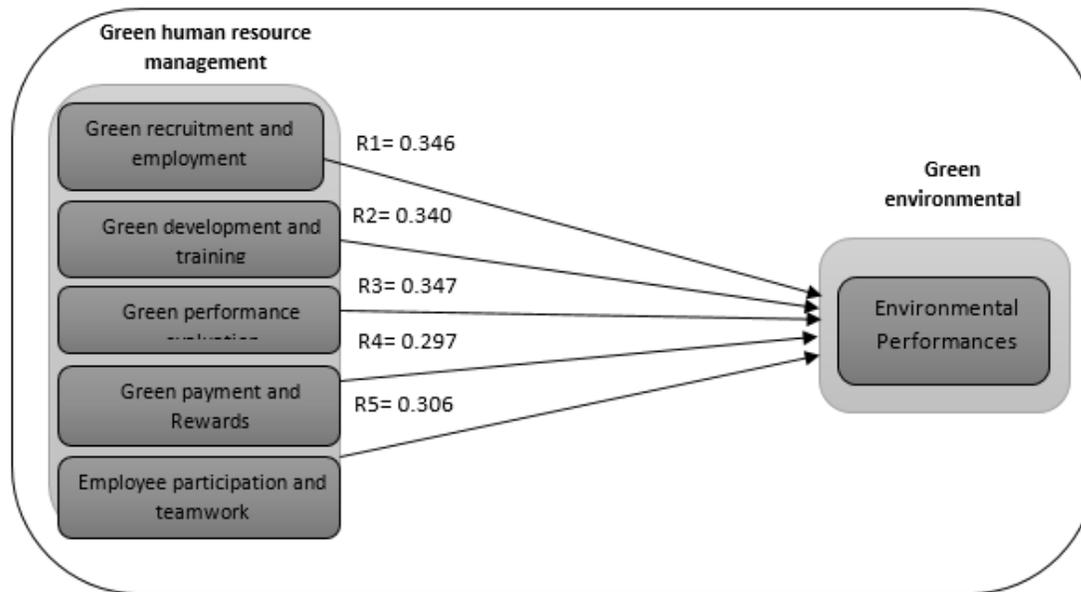


Fig. 3: Integrated model of green HRM and sustainable green performance using meta-analysis method

This model has independent and dependent variables. After removing the variables with low effect size, it was found that the green HRM variable as an independent variable with 5 components (Green recruitment and employment, Green development and training, Green performance evaluation, Green payment and rewards and Employee participation and teamwork) and the green sustainable performance variable as a dependent variable has 1 component of environmental performance. Fig. 3 shows the integrated model of green HRM and sustainable green performance along with the effect size of each component of Green recruitment and employment variable 0.346, Green development and training variable 0.340, Green performance evaluation variable 0.347, Green payment and reward variable 0.297, Green employee participation and teamwork 0.306 on green sustainable performance.

CONCLUSION

The role of green HRM is the most important part of an organization's green management, and ultimately, it is very important as an effective factor to increase sustainable environmental performance. According to the importance of the subject, an intensive review of the national and international studies on green HRM and sustainable green performance in the period of 2005 to 2020

were performed and with a systematic review of those studies and using meta-analysis method, an integrated model of green human resources and green sustainable performance was drawn. Among the research papers, 62 reliable scientific papers were found that used quantitative methods to measure the impact of green HRM measures on environmentally sustainable performance factors. Finally, 42 articles were selected from the reviewed articles for the statistical sample of the study and were analyzed using CMA2 software. After calculating the effect size of each variable, it was found that 5 components of Green recruitment and employment, Green development and training, Green performance evaluation, Green payment and rewards and Employee participation and teamwork as the most important and effective components of green HRM and environmental performance components as the most effective component of green sustainable performance. The result of the research led to the drawing of the final extracted model.

Suggestions

- Considering that the findings of meta-analysis studies are the results of most researches in a specific scientific field, it is suggested that the results of such researches be considered in the field of

decision-making in any scientific and research field. Since this type of analysis provides an overview of the issue to experts and specialists, it is appropriate to use meta-analysis techniques in the research results of various humanities studies, especially management issues that play an important role in decision making

- Due to the extraction of an integrated model of green HRM and green performance using the meta-analysis method, researchers are recommended to experimentally apply this model in the organizations and companies in order to examine and evaluate its empirical generalizability.

AUTHOR CONTRIBUTIONS

..... performed the literature review, experimental design, analyzed and interpreted the data, prepared the manuscript text, and manuscript edition. performed the experiments and literature review, compiled the data and manuscript preparation. helped in the literature review and manuscript preparation. performed data correction, writing original draft preparation, writing reviewing and editing references.

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CONFLICT OF INTEREST

This article is the result of a research conducted to obtain a doctoral degree that has been approved by the management department of the Islamic Azad University of Qom in Iran. The authors would like to appreciate all the professors and the director of the faculty of management for their cooperation and providing guidance regarding the current study.

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REFERENCE

- Al Kerdawy, M.M.A., (2019). The role of corporate support for employee volunteering in strengthening the impact of green human resource management practices on corporate social responsibility in the Egyptian firms. *Eur. Manage. Rev.*, 16(4): 1079-1095 (17 pages).
<https://onlinelibrary.wiley.com/doi/abs/10.1111/emre.12310>
- Al-Romeedy, B.S., (2019). Green human resource management in Egyptian travel agencies: constraints of implementation and requirements for success. *J. Hum. Res. Hosp. Tour.*, 18(4), 529-548 (20 pages).
<https://www.tandfonline.com/doi/abs/10.1080/15332845.2019.1626969>
- Al Kerdawy, M.M.A., (2019). The role of corporate support for employee volunteering in strengthening the impact of green human resource management practices on corporate social responsibility in the Egyptian firms. *Eur. Manage. Rev.*, 16(4): 1079-1095 (7 pages).
<https://onlinelibrary.wiley.com/doi/abs/10.1111/emre.12310>
- Al-Romeedy, B.S. (2019). Green human resource management in Egyptian travel agencies: constraints of implementation and requirements for success. *J. Hum. Res. Hosp. Tour.*, 18(4) 529-548 (20 pages).

- <https://www.tandfonline.com/doi/abs/10.1080/15332845.2019.1626969>
AnuSingh, L.; Shikha, G., (2015). Impact of green human resource factors on environmental performance in manufacturing companies: An empirical evidence. *Int. J. Engin. Manage. Sci.*, 6(1): 25-30 (6 pages).
https://www.researchgate.net/publication/315809059_IMPACT_OF_GREEN_HUMAN_RESOURCE_FACTORS_ON_ENVIRONMENTAL_PERFORMANCE_IN_MANUFACTURING_COMPANIES_A_N_EMPIRICAL_EVIDENCE
Bangwal, D.; Tiwari, P.; Chamola, P., (2017). Green HRM, work-life and environment performance. *Int. J. Environ., Workplace Employ.*, 4(3): 244-268 (25 pages).
<https://www.inderscienceonline.com/doi/abs/10.1504/IJEWE.2017.087808>
Benn, S., Teo, S.T.; Martin, A., (2015). Employee participation and engagement in working for the environment. *Person. Rev.* <https://www.emerald.com/insight/content/doi/10.1108/PR-10-2013-0179/full/www.environment.nsw.gov.au> &
Bombiak, E.; Marciniuk-Kluska, A., (2018). Green human resource management as a tool for the sustainable development of enterprises: Polish young company experience. *Sustainability*, 10(6): 1739.
<https://www.mdpi.com/298014>
- Bon, A.T.; Zaid, A.A.; Jaaron, A., (2018, March). Green human resource management, Green supply chain management practices and Sustainable performance. In 8th International Conference on Industrial Engineering and Operations Management (IEOM), (Bandung, Indonesia) March, 6-8 (2 pages).
<http://ieomsociety.org/ieom2018/papers/56.pdf>
Burghani, S.; Fotovat, B.; Khadem, M., (2017). Effects of green human resources factors on the environmental performance of production organizations (Case study: Assaluyeh and Mahshahr Petrochemical Companies). *J. Tomorrow Manage.*, 52(16): 37-48 (12 pages). (In Persian)
<http://modiriyatfarda.ir/Article/139509081241574070>
Chaudhary, R. (2020). Green human resource management and employee green behavior: An empirical analysis. *Corporate Social Responsibility and Environmental Management*, 27(2), 630-641 (12 pages).
<https://onlinelibrary.wiley.com/doi/abs/10.1002/csr.1827>
Chaudhary, R. (2019). Green human resource management in Indian automobile industry. *J. Glob. Respons.* <https://www.emerald.com/insight/content/doi/10.1108/JGR-12-2018-0084/full/html>
- Cheema, S.; Javed, F., (2017). The effects of corporate social responsibility toward green human resource management: The mediating role of sustainable environment. *Cogent Bus. Manage.*, 4(1): 1310012.
<https://www.tandfonline.com/doi/abs/10.1080/23311975.2017.1310012>
Daily, B.F.; Huang, S.C., (2001). Achieving sustainability through attention to human resource factors in environmental management. *Int. J. Op. Prod. Manage.* <https://www.emerald.com/insight/content/doi/10.1108/01443570110410892/full/html>
Daily, B.F.; Bishop, J.W.; Massoud, J.A., (2012). The role of training and empowerment in environmental performance. *International Journal of operations & production management.* <https://www.emerald.com/insight/content/doi/10.1108/01443571211226524/full/html>
Gilal, F.G.; Ashraf, Z.; Gilal, N.G.; Gilal, R.G.; Channa, N.A., (2019). Promoting environmental performance through green human resource management practices in higher education institutions: A moderated mediation model. *Corp. Soc. Resp. Environ. Manage.*, 26(6): 1579-1590 (12 pages).
<https://onlinelibrary.wiley.com/doi/abs/10.1002/csr.1835>
Ghorbanizadeh, V.A.; Hassan Nangir S.; Rudsaz, H., (2013). Meta-analysis of factors affecting the adoption of information technology in Iran. *Manage. Res. Iran*, 17(2). (In Persian)

<https://www.sid.ir/fa/journal/ViewPaper.aspx?ID=195558>

Guerci, M.; Longoni, A.; Luzzini, D., (2016). Translating stakeholder pressures into environmental performance—the mediating role of green HRM practices. *Int. J. Hum. Res. Manage.*, 27(2): 262-289 (28 pages).

<https://www.tandfonline.com/doi/abs/10.1080/09585192.2015.1065431>

Ghazi Tabatabai, M.; Vadadahir, A.A., (2010). Meta-analysis in social and behavioral research. Gisoom Publication. (296 pages). (In Persian)

<https://www.gisoom.com/book/1670050/%DA%A9%D8%AA%D8%A7%D8%A8-%D9%81%D8%B1%D8%A7-%D8%AA%D8%AD%D9%84%DB%8C%D9%84-%D8%AF%D8%B1-%D9%BE%DA%98%D9%88%D9%87%D8%B4%D9%87%D8%A7%DB%8C-%D8%A7%D8%AC%D8%AA%D9%85%D8%A7%D8%B9%DB%8C-%D9%88-%D8%B1%D9%81%D8%AA%D8%A7%D8%B1%DB%8C/>

Jabbour, C.J.C.; Santos, F.C.A.; Nagano, M.S., (2010). Contributions of HRM throughout the stages of environmental management: methodological triangulation applied to companies in Brazil. *Int. J. Hum. Res. Manage.*, 21(7): 1049-1089 (41 pages).

<https://www.tandfonline.com/doi/abs/10.1080/09585191003783512>

Järnlström, M.; Saru, E.; Vanhala, S., (2018). Sustainable human resource management with salience of stakeholders: A top management perspective. *J. Bus. Ethic.*, 152(3): 703-724 (22 pages).

<https://link.springer.com/article/10.1007/s10551-016-3310-8>

Masri, H.A.; Jaaron, A.A., (2017). Assessing green human resources management practices in Palestinian manufacturing context: An empirical study. *J. Clean. Prod.*, 143: 474-489 (16 pages).

<https://www.sciencedirect.com/science/article/pii/S0959652616321515>

Mishra, P., (2017). Green human resource management: A framework for sustainable

organizational development in an emerging economy. *Int. J. Organ. Anal.*

<https://www.emerald.com/insight/content/doi/10.1108/IJOA-11-2016-1079/full/html>

Mohammadi, F.; Yazdani, H.R.; Adibzadeh, M., (2020). Meta-analysis of online shopping studies; review and synthesis of research results in the field of online shopping. *Sci. J. Smart Bus. Manage. Stud.*, 9(33): 101-142 (42 pages). (In Persian)

<http://ensani.ir/fa/article/445071/%D9%81%D8%B1%D8%A7-%D8%AA%D8%AD%D9%84%DB%8C%D9%84-%D9%85%D8%B7%D8%A7%D9%84%D8%B9%D8%A7%D8%AA-%D8%AE%D8%B1%DB%8C%D8%AF-%D8%A2%D9%86%D9%84%D8%A7%DB%8C%D9%86-%D8%A8%D8%B1%D8%B3%DB%8C-%D9%88-%D8%AA%D8%B1%DA%A9%DB%8C%D8%A8-%D9%86%D8%AA%D8%A7%DB%8C%D8%AC-%D8%AA%D8%AD%D9%82%DB%8C%D9%82%D8%A7%D8%AA-%D8%A7%D9%86%D8%AC%D8%A7%D9%85-%D8%B4%D8%AF%D9%87-%D8%AF%D8%B1-%D8%B2%D9%85%DB%8C%D9%86%D9%87-%D8%AE%D8%B1%DB%8C%D8%AF-%D8%A2%D9%86%D9%84%D8%A7%DB%8C%D9%86>

Mousa, S.K.; Othman, M., (2020). The impact of green human resource management practices on sustainable performance in healthcare organizations: A conceptual framework. *J. Clean. Prod.*, 243, 118595.

<https://www.sciencedirect.com/science/article/pii/S0959652619334651>

Mohammadnejad Shurkai, M., ; Seyed Javadin, S.R.; Shah Hosseini, M.A.; Haj Karimi, A.A., (2017). Providing a framework for Green human resource management. *J. Public Admin.*, 8(4): 691-710 (10 pages). (In Persian)

<https://www.sciencedirect.com/science/article/pii/S0959652619334651>

Mohammadnejad Shurkai, M., ; Seyed Javadin, S.R.; Shah Hosseini, M.A.; Haj Karimi, A.A., (2017). Providing a framework for Green human resource management. *J. Public Admin.*, 8(4): 691-710 (10 pages). (In Persian)

https://jipa.ut.ac.ir/article_62183.html?lang=fa
 Nasrollahi, M.; Fathi, M.R.; Mirasheh, A., (2019). Investigating the effect of human resource management tools on performance with the mediating role of sustainable supply chain management. Iran, Dev. Hum. Res. Manage. Support, 51: 47-60 (14 pages). (In Persian)
<https://www.noormags.ir/view/fa/articlepage/1510276/%D8%A8%D8%B1%D8%B1%D8%B3%DB%8C-%D8%AA%D8%A7%D8%AB%DB%8C%D8%B1-%D8%A7%D8%A8%D8%B2%D8%A7%D8%B1-%D9%85%D8%AF%DB%8C%D8%B1%DB%8C%D8%AA-%D9%85%D9%86%D8%A7%D8%A8%D8%B9-%D8%A7%D9%86%D8%B3%D8%A7%D9%86%DB%8C-%D8%A8%D8%B1-%D8%B9%D9%85%D9%84%DA%A9%D8%B1%D8%AF-%D8%A8%D8%A7-%D9%86%D9%82%D8%B4-%D9%85%DB%8C%D8%A7%D9%86%D8%AC%DB%8C-%D9%85%D8%AF%DB%8C%D8%B1%DB%8C%D8%AA-%D8%B2%D9%86%D8%AC%DB%8C%D8%B1%D9%87-%D8%AA%D8%A7%D9%85%DB%8C%D9%86-%D9%BE%D8%A7%DB%8C%D8%AF%D8%A7%D8%B1>
 Nejati, M.; Rabiei, S.; & Jabbour, C.J.C., (2017). Envisioning the invisible: Understanding the synergy between green human resource management and green supply chain management in manufacturing firms in Iran in light of the moderating effect of employees' resistance to change. J. Clean. Prod., 168: 163-172 (10 pages).
<https://www.sciencedirect.com/science/article/pii/S0959652617319546>
 Niazi, M.; Afra, H.; Nejadi, A.; Sakhaei, A., (2019). Meta-Analysis of the relationship between cultural capital and lifestyle. J. Appl. Soc., 29(4): 1-20(20 pages). (In Persian)
https://jas.ui.ac.ir/?_action=article&au=210417&_au=%D8%A7%DB%8C%D9%8

[8%D8%A8++%D8%B3%D8%AE%D8%A7%DB%8C%DB%8C&lang=en](https://www.sciencedirect.com/science/article/pii/S0959652612000868)
 Nobari, A.R.; Seyedjavadin, S.R.; Roshandel Arbatani, T.; Rahnamay Roodposhti, F., (2018). Environmental concerns and green human resource management: A meta-synthesis. Plant Physiol., 8(4): 2573-2576 (4 pages).
https://ijpp.iau-saveh.ac.ir/article_543510_115200.html
 Oyedokun, O.O., (2019). Green human resource management practices and its effect on the sustainable competitive edge in the Nigerian manufacturing industry (Dangote) (Doctoral dissertation, Dublin Business School).
<https://esource.dbs.ie/handle/10788/3829>
 Oreja-Rodríguez, J.R; Armas-Cruz, Y., (2012). Environmental performance in the hotel sector: the case of the Western Canary Islands. J. clean. Prod., 29: 64-72 (9 pages).
<https://www.sciencedirect.com/science/article/pii/S0959652612000868>
 Paille, P.; Valéau, P.; Renwick, D.W., (2020). Leveraging green human resource practices to achieve environmental sustainability. J. Clean. Prod., 260: 121137.
<https://www.sciencedirect.com/science/article/pii/S0959652620311847>
 Pinzone, M.; Guerci, M.; Lettieri, E.; Redman, T., (2016). Progressing in the change journey towards sustainability in healthcare: the role of 'Green' HRM. J. Clean. Prod., 122: 201-211 (11 pages).
<https://www.sciencedirect.com/science/article/pii/S0959652616001761>
 Pham, N.T.; Tučková, Z.; Jabbour, C.J.C., (2019). Greening the hospitality industry: How do green human resource management practices influence organizational citizenship behavior in hotels? A mixed-methods study. Tour. Manage., 72: 386-399 (14 pages).
<https://www.sciencedirect.com/science/article/pii/S0261517718303121>
 Pham, N.T.; Thanh, T.V.; Tučková, Z.; Thuy, V.T.N., (2020). The role of green human resource management in driving hotel's environmental performance: Interaction and mediation analysis. Int. J. Hosp. Manage., 88: 102392.

<https://www.sciencedirect.com/science/article/pii/S0278431919307996>

Rastegar, A.A. Maleki Minbash Razgah, M.; Bagheri Qarabolagh, H.; Jabbari. J., (2019).

Reflections on Green Human Resource Management: The Moderating Role of Marketing Innovation in the Relationship between Employee Engagement and Green Supply Chain Management in the Hospitality Industry Bi-Q. *J. Soc. Tour. Stud.*, 7(14):127-148 (21 pages). (In Persian)

<https://www.magiran.com/paper/2216926>
Rani, S; Mishra, K., (2014). Green HRM: Practices and strategic implementation in the organizations. *Int. J. Recent Innov. Trend. Comput. Commun.*, 2(11): 3633-3639 (4 pages).

https://www.academia.edu/download/39628350/Green_HRM_Practices_and_Strategic_Implementation_in_the_Organization_s.pdf

Rawashdeh, A., (2018). The impact of green human resource management on organizational environmental performance in Jordanian health service organizations. *Manage. Sci. Lett.*, 8(10): 1049-1058 (10 pages).

<http://growingscience.com/beta/msl/2886-the-impact-of-green-human-resource-management-on-organizational-environmental-performance-in-jordanian-health-service-organizations.html>

Renwick, D.W.S.; Redman, T.; Maguire, S., (2013). Green human resource management: a review and research agenda. *Int. J. Manage. Rev.*, 15(1): 1-14 (14 pages).

<https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1468-2370.2011.00328.x>

Roscoe, S.; Subramanian, N.; Jabbour, C.J.; Chong, T. (2019). Green human resource management and the enablers of green organisational culture: Enhancing a firm's environmental performance for sustainable development. *Bus. Strat. Environ.*, 28(5): 737-749 (13 pages).

<https://onlinelibrary.wiley.com/doi/abs/10.1002/bse.2277>

Ren, S.; Tang, G.; Jackson, S.E., (2018). Green human resource management research in emergence: A review and

future directions. *Asia Pacific J. Manage.*, 35(3): 769-803 (35 pages).

<https://link.springer.com/article/10.1007/s10490-017-9532-1>

Rezaei, B.; Zargar, S.M.; Hemtian, H., (2020). Investigating the impact of green human resource management dimensions on sustainable organizational development. *J. Marine Sci.*, 20Issue 20. http://rmt.iranjournals.ir/article_39673.html

Saeed, B.B.; Afsar, B.; Hafeez, S.; Khan, I.; Tahir, M.; Afridi, M.A., (2019). Promoting employee's proenvironmental behavior through green human resource management practices. *Corp. Soc. Resp. Environ. Manage.*, 26(2): 424-438 (15 pages).

<https://onlinelibrary.wiley.com/doi/abs/10.1002/csr.1694>

Shah, M., (2019). Green human resource management: Development of a valid measurement scale. *Bus. Strat. Environ.*, 28(5): 771-785 (15 pages).

<https://onlinelibrary.wiley.com/doi/abs/10.1002/bse.2279>

Singh, S.K.; Del Giudice, M.; Chierici, R.; Graziano, D., (2020). Green innovation and environmental performance: The role of green transformational leadership and green human resource management. *Technol. Forecast. Soc. Change*, 150: 119762.

<https://www.sciencedirect.com/science/article/pii/S0040162519309588>

Seyedjavadin, S.; Roshandel Arbatani, T.; Nobari, A., (2017). Green human resource management an investment approach and sustainable development. *J. Invest. Knowl.*, 5(20): 297-32 (36 pages). (In Persian).

https://jik.srbiau.ac.ir/article_9524.html?lang=en

Seuring, S.; Müller, M., (2008). Core issues in sustainable supply chain management—a Delphi study. *Bus. Strat. Environ.*, 17(8): 455-466 (12 pages).

<https://onlinelibrary.wiley.com/doi/abs/10.1002/bse.607>

Tang, G.; Chen, Y.; Jiang, Y.; Paille, P.; Jia, J., (2018). Green human resource management practices: scale development

- and validity. *Asia Pac. J. Hum. Res.*, 56(1): 31-55 (24 pages).
<https://onlinelibrary.wiley.com/doi/abs/10.1111/1744-7941.12147>
- Taleghani, G.R.; Ghaffari, A.; Haghghi, M., (2016). Investigating the effect of human resource management tools on improving organizational performance among employees of the University of Tehran. Iran, Faculty of Management, University of Tehran, 8(1): 1-14 (14 pages). (In Persian)
<https://www.sid.ir/fa/journal/ViewPaper.aspx?id=318227>
- Yusliza, M.Y.; Othman, N.Z.; Jabbour, C.J.C., (2017). Deciphering the implementation of green human resource management in an emerging economy. *J. Manage. Deve.*
<https://www.emerald.com/insight/content/doi/10.1108/JMD-01-2017-0027/full/html>
- Yusoff, Y.M., (2019). Linking green human resource management bundle to environmental performance in malaysia's hotel industry: The mediating role of organizational citizenship behaviour towards environment. *Int. J. Innov. Technol. Explor. Eng.*, 8(9): 1625-1630 (6 pages).
<https://journals.sagepub.com/doi/abs/10.1177/0972150918779294>
- Yusoff, Y.M.; Nejati, M.; Kee, D.M.H.; Amran, A., (2020). Linking green human resource management practices to environmental performance in hotel industry. *Glob. Bus. Rev.*, 21(3): 663-680 (18 pages).
<https://journals.sagepub.com/doi/abs/10.1177/0972150918779294>
- Yu, W.; Chavez, R.; Feng, M.; Wong, C.Y.; Fynes, B., (2020). Green human resource management and environmental cooperation: An ability-motivation-opportunity and contingency perspective. *Int. J. Prod. Econ.*, 219: 224-235 (12 pages).
<https://www.sciencedirect.com/science/article/pii/S0925527319302270>
- Yusoff, Y.M.; Nejati, M.; Kee, D.M.H.; Amran, A., (2020). Linking green human resource management practices to environmental performance in hotel industry. *Glob. Bus. Rev.*, 21(3): 663-680 (18 pages).
<https://journals.sagepub.com/doi/abs/10.1177/0972150918779294>
- Yong, J.Y.; Yusliza, M.; Ramayah, T.; Chiappetta Jabbour, C.J.; Sehnem, S.; Mani, V., (2020). Pathways towards sustainability in manufacturing organizations: Empirical evidence on the role of green human resource management. *Bus. Strat. Environ.*, 29(1): 212-228 (17 pages).
<https://www.mdpi.com/693242>
- Viechtbauer, W., 2010. Conducting meta-analyses in R with the metafor package. *Journal of statistical software*, 36(3), pp.1-48.
<https://lirias.kuleuven.be/1059637?limo=0>
- Waddington, H.; White, W.; Snilstveit, B.; Garcia Hombrados, J.; Vojtkova, M.; Davies, P.; Bhavsar, A.; Evers, J.; Perez Koehlmoos, T.; Petticrew, M.; Valentine, J.C.; Tugwell, P., (2012). How to do a good systematic review of effects in international development: a tool kit. *J. Dev. Effect.*, (30 pages).
<https://www.tandfonline.com/doi/full/10.1080/19439342.2012.711765>
- Zhang, Y.; Luo, Y.; Zhang, X.; Zhao, J., (2019). How green human resource management can promote green employee behavior in China: A technology acceptance model perspective. *Sustainability*, 11(19): 5408.
<https://www.mdpi.com/544312>
- Zaid, A.A.; Jaaron, A.A.; Bon, A.T., (2018). The impact of green human resource management and green supply chain management practices on sustainable performance: An empirical study. *J. Clean. Prod.*, 204: 965-979 (15 pages).
<https://www.sciencedirect.com/science/article/pii/S0959652618327768>
- Zhu, Q.; Sarkis, J.; Lai, K.H., (2013). Institutional-based antecedents and performance outcomes of internal and external green supply chain management practices. *J. Purchas. Supply Manage.*, 19(2): 106-117 (12 pages).
<https://www.sciencedirect.com/science/article/pii/S1478409213000022>