

The Impact of Green HR Practices on Corporate Sustainable Development with the Mediation of Green Innovation

Dr. Ahmad Tisman Pasha

Associate Professor, Institute of Banking & Finance, Bahaudin Zakariya University, Multan Pakistan
tisman@bzu.edu.pk

Muhammad Ahsan

Research Scholar, Institute of Banking & Finance, Bahaudin Zakariya University, Multan Pakistan
mahsan09876@gmail.com,

Dr. Shaukat Malik

Dean & Director, Institute of Banking & Finance, Bahaudin Zakariya University, Multan Pakistan
shoukatmalik@bzu.edu.pk

Abstract

This informative study aims to clarify the discrepancy amongst Green Human Resource practices and Corporate Sustainable Development and provide as a road map towards green innovation, Managers were taken into account to identify the Gap and potential ways to close it. In this Article, numerous challenges faced by Managers in implementation of Green HR Practices will be discussed, as well as how effectively the difference between green innovation and corporate sustainable development have been addressed. The target demographics were HR Manager, Production Manager as well as Board of Directors working in textile sector of Punjab, Pakistan. The sample of 440 questionnaires were conducted from small, medium and large industries to gather primary data. Participants were asked questions using a semi-structured questionnaire. Green Human Resource practices have enabled the industries to use greener resources that would help to minimize the cost and improving the efficiency of production system. The research was intended to support the hypothesis that there is a positive & significance influence of Green Human Resource practices on corporate sustainable development with mediation of green innovation. Results showed that Different Managers face significant challenges in implementing the Green HR Practices which is more great exercise than it should be.

Keywords: *Green Human Resource Practices, Corporate Sustainable Development, Green Innovation, Green Management Practices*

Introduction

Green Human Resource concept have been revolutionized the world due to growing awareness of current environmental protection needs of organizations. The previous studies focused on independent aspect of greener productivity but this study have investigated its impact by covering major intervening variables of sustainable resources, there are less empirical evidence gathered about green sustainable productivity in textile sector of Pakistan (Boiral et al., 2019). However, there have arisen a great pressure from stakeholder side to adopt green practices due to growing pollution in the industrial sector (Yu et al., 2017). Green initiatives have become the rule of current era in-order to increase the green Product & Process Innovation for achieving the sustainable objectives of firm. These tactics encourage a firm to utilize the intangible resources for the production process in-order to fulfil the demands of all stakeholders (Singh & El-Kassar, 2019; Irfan, et al., 2022; Dubey et al., 2015).

Background of the Study

This study described that Employee's participation contributes an essential part in shaping green environmental practices which influence on the decision making taken by top management for devising greener policies. Green HR Practices are essential for achieving competitive advantage in term of environmental protective measures that helps to integrate the employee's commitment towards green productivity. Green Human Resources also played an important role to avoid unnecessary expenditures arisen for getting maximum productivity which tends to improvise the efficiency through greener resource utilization (Ren et al., 2018). It includes the green recruitment & selection strategies & processes in-order to empowered employees that leads to achieve the sustainable objectives (Renwick et al., 2013). Green strategies enhanced the green competencies and motivation among employees in-order to provide the opportunities for taking green initiatives (Longoni et al., 2018). Such activities give birth to environmental protective measures at workplace which establish the eco-friendly environment (Munir, et al., 2022; Malik, et al., 2022; Tang et al., 2018).

These practices helped a firm to maintain better reputation in long term in-order to gain and maintain the corporate advantage in greener resources. There are numerous challenges which are faced by the current industries, these are causing the environmental pollution and damage to overall atmosphere, the eradication of the pollution is necessary for maintain sustainable greener resources. The study focused on green initiatives in the textile sector of Pakistan as it directly linked with the sustainable objectives (Song et al., 2020). Many entities are facing challenges as they are lacking the competent employees that would help to implement the green initiatives. Textile industries of Pakistan are facing the major challenges like emissions of harmful gases,

and increasing wastage through toxic material that have a huge impact of the organization productivity.

The study explored the green management practices in textile sector of Pakistan as it helped to initiate those resources which are connected with the environmental protection. Green HR practices contributes as essential role for the growth of the organizational greener objectives as it helps to achieve the environmental, economic and social sustainable development objectives. Many firms have established the innovative techniques to adopt Green HR practices for recruitment, and selection the employees and giving compensation to them through empowering them toward green innovative practices.

Problem Statement

Today, the organizations are facing environmental issues like usage of inadequate techniques for production resources that creates an important aspect to implement green practices in-order to create an atmosphere of green productivity for sustainable development of firm (Adnan, et al., 2022; Irfan, et al., 2021; Yong et al., 2020). Further, a second study have been accomplished on Green HR and green intellectual capital its impact on sustainable growth (Malik et al., 2020) but this study focuses on green productivity that helps to achieve the environmental, economic and social objectives.

Significance of study

The research has got specific importance in manufacturing sector due to increase in the environmental concerns of green management practices. Green Product Innovation is a wider concept used in every organization because it is used to maintain a green behavior in the organizational context to reduce the wastage and increases efficiency by utilizing its resources efficiently. Green Human Resource Practices recruits' employees having competencies to maintain green managerial practices in the organizations. Typically, Green Concept is important for managing a firm's activities and providing safe environment for the growth of organization. Organizations are receiving pressure from customers as well as stakeholders for implementation Green HR Practices.

Objectives of the Study/ Research Questions

- To identify how Green Human Resource Practices plays an important role in achieving Corporate Sustainable Development?
- How Green HR plays an important role on Green Product and Process innovation?

- How Green product and process innovation contributes to the success of Corporate Sustainable Development?

Literature Review

In current era, green practices are growing day by day in-order to increase the environmental protective measures and there are numerous challenges which have been faced by different organizations during its production process. The green management system helps to overcome the challenges arise in the environmental behaviors & that brings internal capabilities and competencies (Yu et al., 2017) but many organizations having lack of employee abilities and knowledge that aligned with organizational core values to determine the sustainable objectives (Khar, et al., 2021; Adnan, et al., 2021; Albort-Morant et al., 2016). Therefore, it created a need to establish the overall goals and maintain green productivity in textile sector of Pakistan. Green HR practices helps to development of internal competencies of employee's in-order to create eco-friendly environment (Leroy et al., 2018).

Recent studies suggested that organizational culture and employee voice about green practices determined the social sustainable objective of the firm (Palmer et al., 2019) the greener behavior strongly associated with the overall integration of development of greener productive resources that converts to achieve the overall efficiency during production process. Green HR practices supports the systems and employees to take corrective measures in-order to initiate the green practices in the entire organization (De Kock et al., 2020). Top management have evolved as an important part for organizational decision making that stimulates to shape the internal competencies for green organizational culture at work place (Zhou et al., 2018). A green concept is growing day by day due to its efficient techniques in green innovation system as it urges the efficiency & minimizes the wastage for gaining the corporate sustainable development (Y. S. Chen & Chang, 2013). As many organizations are lacking the abilities to start their green culture, there is a need to provide motivation to them and encourage them towards sustainable development.

Our study attempts to find the answer of how Green HR contributes as essential role in the growth of sustainable objectives of the firm. We use ability-motivation-opportunity theory (Abbas, J., & Sağsan, M. (2019)..Pdf, n.d.) to draw upon the evidence of green productivity in the production process; it shows how green HRM contributes an essential aspect in the growth, retention and sustaining the employee's working for greater performance objectives (Kaur et al., 2019). Our research gives an advance understanding about green HR

practices with increased pressure of stakeholders to incorporate the green management practices for achieving sustainability in the environmental perspective. The study contributed a great portion that Green Abilities enhanced the overall environmental competencies which shapes the sustainable growth of the firms.

Green Human Resource practices creates the competencies among employees to work for green innovative techniques in-order to achieve the sustainable environmental growth. The RBV provides the better understanding to predict and utilization of company's unique resources that are difficult to copy by its rivals. Many organizations recruit such candidates which are environmental sensitive and take part in the environmental activities of the firm, who have the environmental beliefs and values (Renwick et al., 2013). Green HR played an essential aspect in the development of green candidates which are ecologically effective and it aimed to advance the green capabilities among employees so that they pay more attention to those activities which are less harmful for the environment.

Green HR practices also evaluated the green competencies of employees to stimulate the active decision making in the green production of resources. Green practices have given guidelines to establish the ecological factors that causing the removal of harmful gases and toxic waste during production process. Policies are devised to make implementation of those practices that are helpful in shaping the environment of industry to green managerial practices, so it is necessary to motivate the employees working in the organization for empowering them towards the green initiatives (Autoridad Nacional del Servicio Civil, 2021)

Green HR practices are essential for making employees greener to take more initiatives through green utilization of resources. Therefore it depicts an vital role in the growth of the organization as green recruitment & selection that have linked with the green motivation & empowerment of employees at work place (Cavicchi, 2017). Green practices motivate the candidates to improve their abilities and maintaining a course of action that needs to be implemented for the longer perspective and help to gain competitive advantage.

Firms have been actively involving in adoption of green practices in-order to deal with the current environmental challenges. Green HR practices have been considered as essential role in implementation of green policies for shaping the environmental behavior (Ren et al., 2018). A research have shown that green HR effects on greener performance and leads towards the competitive advantage (Guerci et al., 2016). Green innovation shown the mediation effect with respect to Green HR practices and Corporate Sustainable roles as it mentions to the development of overall environmental goals.

Green strategies have enhanced the firm abilities, motivation & opportunities towards effective recruitment, compensations and developing the strategies for empowering employees that leads

towards the utilization of firm resources most effectively and efficiently. According to the theory of human capital, employee's abilities have been considered as important for generating employee skills and knowledge. Green Human Resources positively affect the green innovation as it has the ability to utilize a firm resource efficiently by sustaining greener raw material. Thus, managerial concerns for environment also played an essential role in shaping the green culture with the organization (Tanveer, Song, Faheem, & Sharif, 2021).

We have three objectives of research study, first is green human resources contributes an important role for the growth of green innovation about the whole production system of an organization. Green innovative techniques have shown a great impact on green innovation process that shapes the sustainable advantage that meets the needs of long-term objectives. As green innovation incorporates the green innovation and formulate the positive impact on firm's productivity. Green Human Resources highly impact on the firm productivity which promote the eco-friendly products through adoption of innovative techniques the market conditions are stabilizing the effect of green productivity. The green HRM create multiple opportunities for maintaining win-win arrangements of a company's products that produce benefits to employees, people as well as for the stakeholders (Yusliza et al., 2017)

Firms often used green training and development tool to teach their employees for updated techniques about green environmental practices. Although, employees have found to be less motivated when it required the implementation of green policies for achieving sustainability in resource utilization. An organizational culture tends to be greener strategies when employees think beyond profit-seeking objective to participate in ecological activities. Therefore, green organization can be elaborated as its internal values and attitude of its members to promote the green culture within the organization. Green Human Resource plays an essential aspect in development of organizational culture as it directly related to the shaping the green values, beliefs and attitudes through hiring, performance appraisals and incentivization (Amini et al., 2018). It is essential to design green policies that enhances the employee commitment and behavior to meet the firm long-term goals and objectives.

The organizations have adopted those practices which are economically sustainable by reduction of wastage to increase efficiency of production process. Social sustainability would only be possible when employees are convenient in sharing tasks and activities with each other in-order to support them (Yu et al., 2020). It is also necessary to get awareness of internal as well as external environmental policies which would provide support for organizational growth. Firms should focus on green productivity through minimizing the waste & reducing the harmful impacts during production process to enhance their greener productivity. The green environmental events can be promoted by shaping the proper policies of employees regarding greener training & development to incorporate changes arise in the overall system.

Green HR aligns the organizational objectives with the green resources and which are linked with the wastage reduction, improving recycling strategy in consumption of less energy. The research identified the association between Green Human Resources and CSD with the mediation of green innovation (GI) that how these practices has got great importance in all industries. Here, Green HR through (Green Ability, Motivation, Opportunity) has been used as an independent variable and CSD includes (Environmental, social and economic sustainable development) as dependent variable, and Green innovation (GI) has been used as a mediator with its dimensions includes (Green product & process innovation).

Research Methodology

Sample and Procedure

We approached to top & middle level management of Textile industries in Pakistan and 440 responses were collected for measurement of actual results. Most of the responses were collected by meeting with HR Manager, Production Managers and Board of Director's as well as administrative officer. The questionnaires consist of three portions green HR, green innovation and corporate sustainable development dimensions. These responses were measured through (SD to SA) at Five-likert scale (Strongly Disagree=1 to Strongly Agree=5). We make several phone calls to conduct the questionnaires and follow up their feedback for asking about their responses. We make the generalizability of all result findings and it showed a positive response with the green HR practices and corporate sustainable development.

There were a great number of ecological factors that cause the environmental pollution but a number of responses were gathering from production managers to show the implementation of green behavior. We visited the textile sector for collecting responses but they were busy which make it difficult to collect the questionnaires. It took few times to complete the questionnaires and major responses were collected from Male respondents and rest of the responses was gathered from female. Some of the managers just ignore us to give the feedback; we visited managers of textile sector.

Research Design

The explanatory research has been conducted and the target sample was HR Manager, Production Manager and BOD's. simple random sampling technique has been used to gather the responses from respondents. The number of maximum respondents were gathered to evaluate the proper analysis for the whole study. Close ended questionnaires were used to measure the actual number of responses.

Theory & Hypothesis

AMO has drawn for exploring and clarifying the effect of Green Human Resources in textile sector of Pakistan. The link of Green HRM is fixed to the entire group to enhance the firm environmental performance. Resource based review suggests that strategic resources are difficult to imitate by its rivals that helps to achieve the competitive advantage (Barney et al., 2001). Furthermore, if it is difficult for rival to adopt new resources then it can help to make difficulty for its rivals to enter into the market. According to RBV, it is easy for a firm to establish green resources through green development, green motivation and green opportunities for superior job performance. We approached those human resources satisfies the above criteria of RBV to ensure the consistency for generating high performance and achieving competitive advantage. The theory which influences through employees' abilities, motivation and opportunity has a direct impact on sustainable development. The HRM effect through green recruitment and employees motivation through green compensation & benefits through empowering them for achieving sustainable objectives of the firm (Ali, et al., 2020; Paillé et al., 2020). We suggested there is a significant consequence of top administration on organizational decision making that reflect towards shifting green culture. Green HR practices helps to attract and sustain the employee's behaviors towards sustainable goals and objectives of firm for green innovation practices in-order to perform greater than its competitors.

Green HR Practices and CSD

Existing literature have explored that Green HR has changed its concepts to new dimensions in-order to get the maximum efficiency in the environmental practices. It shifted from low level of employee engagement to high level of collaboration which leads to the development of skills and knowledge (Singh et al., 2020). With the growing awareness of green productivity and enhancement of environmental management practices through natural effect of the firm, it is related with developing greener performance of employees (Asada, et al., 2020; Phillips et al., 2021; Cavicchi, 2017; Roos & O'Connor, 2015). We argue that Green HRM is linked with the environmental practices, whereas Green HR plays an intermediary role to develop the sustainable development in environmental and economic perspective to ensure its presence in the organization (Brockner et al., 2006; Masri & Jaaron, 2017).

GHRM develops planned alignment for ecological safety measures as it pays huge attention for greener product and processes that makes important to take part for greener productivity that would help to diminish environmental pollution (Gul, et al., 2021; Oh et al., 2016; Mishra et al., 2014). Green Human resource practices work for greener management to increase the firm efficiency by motivation through compensation, benefits. A firm delivers its vision and strategies to employees for developing the skills and knowledge which are integrated with the overall performance of the organization. Green HR has an influencing effect on employees in an orderly manner that forced the organization to stop their negative ways of producing a specific product.

H1a. Green Ability have a positive & significance influence on corporate sustainable development.

H1b. Green Motivation have a positive & significance influence on corporate sustainable development.

H1c. Green Opportunity have a positive & significance influence on corporate sustainable development.

Green HR Practices & Green Innovation

It is recommended that a Green HR plays a vital role in developing the employee motivation and empowerment to enhance the understanding of corporate development. The collective goals are easy to establish due to increasing awareness of organizational mission and objectives and it heavily effects on the market norms and perceptions. Green HR shapes the beliefs, values and attitude that play an important part in the corporate sustainable development (Human et al., n.d.). Green HR increases the employee's awareness and capability to green initiatives and environmental performance. Previous studies gather evidences about green HRM but this study would analyze the effect of green human resource and corporate sustainable development with more empirical evidences that engage stakeholder's pressure to engage in green HR practices. Existent research suggests that green HR contributes as essential role in the development green hiring to those candidates who are having environmental beliefs, values and knowledge to integrate the environmental management practices.

Green HR contributes an essential aspect for the development of green innovation process as it directly linked with the innovative ideas which contributes. The use of innovative techniques for the development of the greener resources have enabled the firms to efficiently utilized its raw material that would meet the current and future needs.

H2a. Green Ability have positive and significant relation with green innovation.

H2b. Green Motivation have a positive and significance influence on green innovation.

H2c. Green Opportunity have a significant effect on green innovation.

Green Innovation and CSD

Green innovation refers to the initiation of green processes (Albort-Morant et al., 2016) use of less energy consumption resources, use of scarce raw material green production processes which aims at minimizing harmful impacts, the less consumption of water leads towards the greener use of raw material (Gunasekaran & Spalanzani, 2012). Past studies have argued that organizations following green innovation during product and process innovation leads to achieve the competitive advantage over their rivals which establish to meet the demands of their customers (Albort-Morant et al., 2018; Gul, et al., 2021; Del Giudice et al., 2018), these results adds goodwill in the assets to explore the results. Many studies influence that Green HR positively associated with technological and product innovation for the sustainable development. Green HR

involves initiatives in Green innovation to develop new process and product innovation that leads towards commitment of culture (Batool, et al., 2021; Gul, et al., 2021; Allameh, 2018).

It has been observed that Green HR Practices does not strongly influence in administrative & Process innovation but it has a much influence on technological innovation. The HRM function positively influence on compliance of the overall organization that are attributed to green cultural development and create a flat structure for sustainable growth. As per the AMO theory, we analyzed that the organizations which values its employees will have a positive effect to structure the green HR practices as it recruit & select, train and develop the employee's in-order to provide opportunities to them for leveraging their process to green productivity (Gul, et al., 2022; Bukhari, et al., 2022; Ahmad, et al., 2021; Tanveer, Anwer, et al., 2021).

Green innovation closely related with the ecological performance of the organization as it develops the competent staff to take green initiatives that would enhance the corporate sustainability in economic and social perspective. Further, green innovation also increases the financial and social sustainability with the development of environmental sustainability which plays an important role in cost reduction strategy and improving efficiency throughout its operations. It has perceived those green innovative techniques has been considered as essential approach due to pressure arising from stakeholders, but it contributes an important role in the development of green abilities for achieving competitive advantage (Anas, A et al., 2022; Ahmad, et al., 2022). Green innovation facilitates freedom to employees that what they like to continue, how they would achieve their goals and reached the desired results. Top level executives provide support to promote the sustainable development goals, that would minimize the harmful impact of the society and postulates the positive outcome linked with the green productivity.

H3a. Green Product Innovation has a positive & significant influence on corporate sustainable development.

H3b. Green Process Innovation has a positive and significance influence on corporate sustainable development.

Green HR practices, Green Innovation & CSD

The use of limited resources with low wastage would leads towards the natural environment where rules and regulations have followed to enhance the efficiency of green resources. It promotes the environmental impacts of green product & process innovation to integrate with the legal requirements of the business that is more compatible with the environmental abilities (Dubey et al., 2015). Research have explored that greener productivity rely upon the developmental of green innovative strategies which incorporates the ecological business operations for the developmental growth to sustainable behavior (Gul, et al., 2022; Ali, et al.,

2021; Oliva et al., 2019). Corporate sustainability is only possible when an organization uses greener raw material to produce a product and recycle its wastage for achieving maximum efficiency.

We believe that green learning and development program designed to enhance the productivity and reduction of wastage, analyzing resource efficiency and recycling process followed to enhance the efficiency (Zhou, et al., 2022; Gul, et al., 2021; Y. Chen et al., 2015). Green HR system stimulates the HRM system to administer the techniques for sustainable development of the organization. Formal develops the links with the external competitor's in-order to take the green initiatives for the sustainable growth of the organization. With the industrial revolution, the green utilization of resources has improved the overall sector of green productivity (Abdul et al., 2022). The demand for more utilization of natural resources has created a need to develop the green competencies in employees which leads to the corporate sustainability.

The ecologists and green environmental practitioners recommended the organization to adopt the green thinking process and enhance their knowledge in-order to achieve the corporate sustainability (Shahzad et al., 2020). Each pillar of sustainability (environmental, economic and social) has significant value, as it would be related to the integrative theory of sustainability.

In this Study, the three dimensions of CSD: environmental, social and economic sustainable development. Firstly, Environmental sustainable resources mainly refers to the reduction of wastage to increase the efficiency and it is concerns to the reduction of toxic material, CO2 emissions that create minimum damage to industrial production which support the all system of green innovation (Ahmad et al., 2022; Salameh, et al., 2022; Tanveer, Song, Faheem, Daud, et al., 2021).

Economic sustainability relates to achieving the cost efficiency to enhance the revenue generation and earning revenue through reducing wastage. Many organizations are continuously trying to implement the green practices to diminish the damaging Impacts of the environment and promote the economic aspect of sustainable development. Finally, social sustainability encourages the equal opportunities and improving the health and safety of employees through communication between internal and external environment of the company (Tseng et al., 2016).

H4. Green Innovation mediates the relationship between Green HR practices and corporate sustainable development.

3.2 Research Model

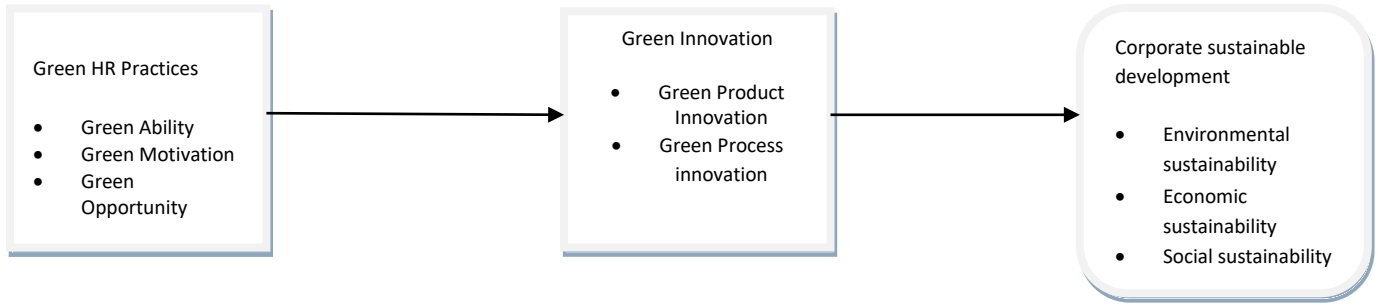


Fig. 1 Research Model

Hypothesized Model

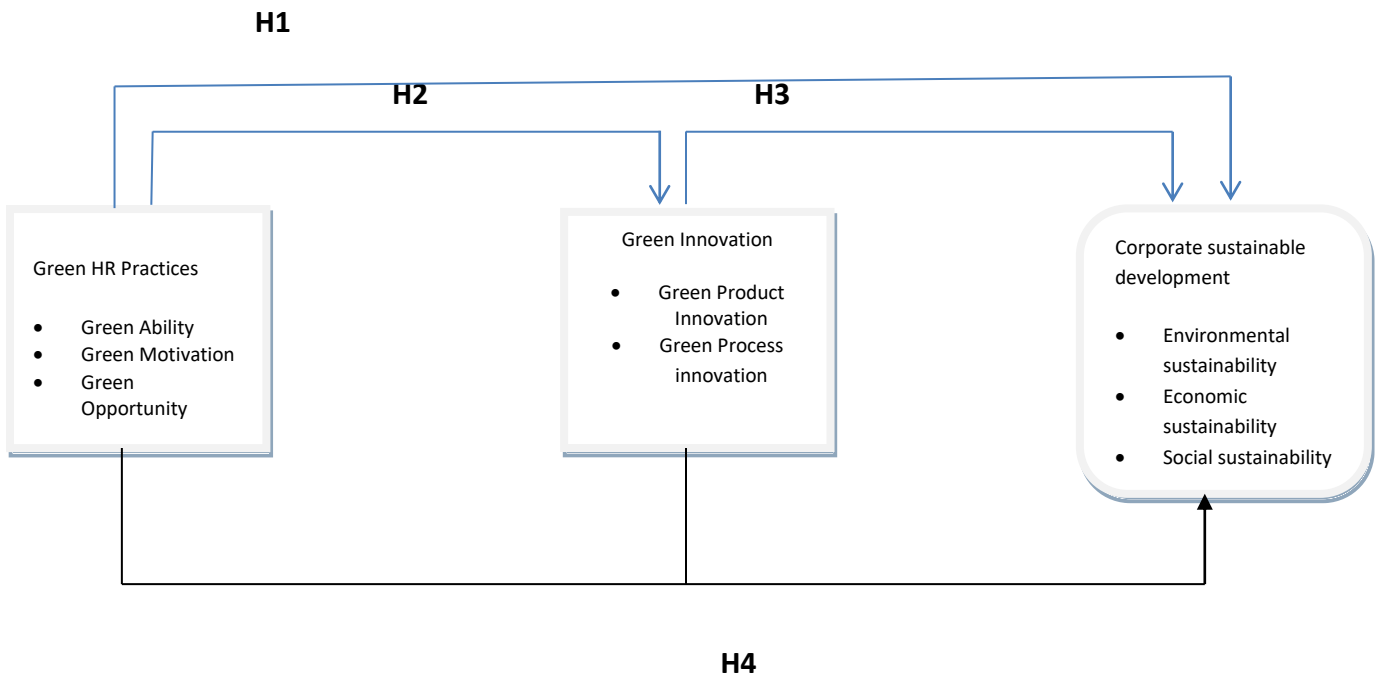


Figure. 2 Hypothesized Research Model

Discussion & Analysis

Diagram Discussion

The data gathered through the semi structured questions contributed positively to the hypothesis that there is a difference between green HR practices and corporate sustainable development. The below diagram depicted the measurement values of the entire construct, the construct validity of the all variables shows the convergent and discriminant validity. **Figure 2.3** showed the reliability and validity of the measurement constructs representing the all dimensions of the variables. As GAB postulates the relationship among all other intervening variables with a value of greater than 0.50 which is quite significant in term of all latent constructs. R-Square value is also significant in term interrelationship with the intervening constructs. Each variable has specifically elaborated its values in term of the measurement constructs.

These measurement construct enhances the research finding in the whole study as previous researches have not discuss the model with these tables. The below measurement constructs have elaborated the overall details of all intervening variables which reflects the positive relationship among all variables.

Fornel and Lacker criteria also showed the positive values which are greater than 0.3 or 0.4 and these meet the normal criteria for all measuring results. The below diagram showed the positive aspects of all intervening variables and that have a strong influence on the overall results. All the measurement scales that we use in this construct meet the requirements of the scale and this showed the high convergent validity.

Figure 2.3 depicted the actual results of all intervening variables with the separate dimensions and this showed the internal validity in term of all defining constructs. All results meet the criteria for the significance level in term of the minimum value for the entire constructs.

The Discussion have also been shown in the last of the analysis to interpret the overall results as this chapter showed the positive influence of all measuring constructs, Smart pls 3 has been used to measuring the entire constructs for briefly explaining their relationship.

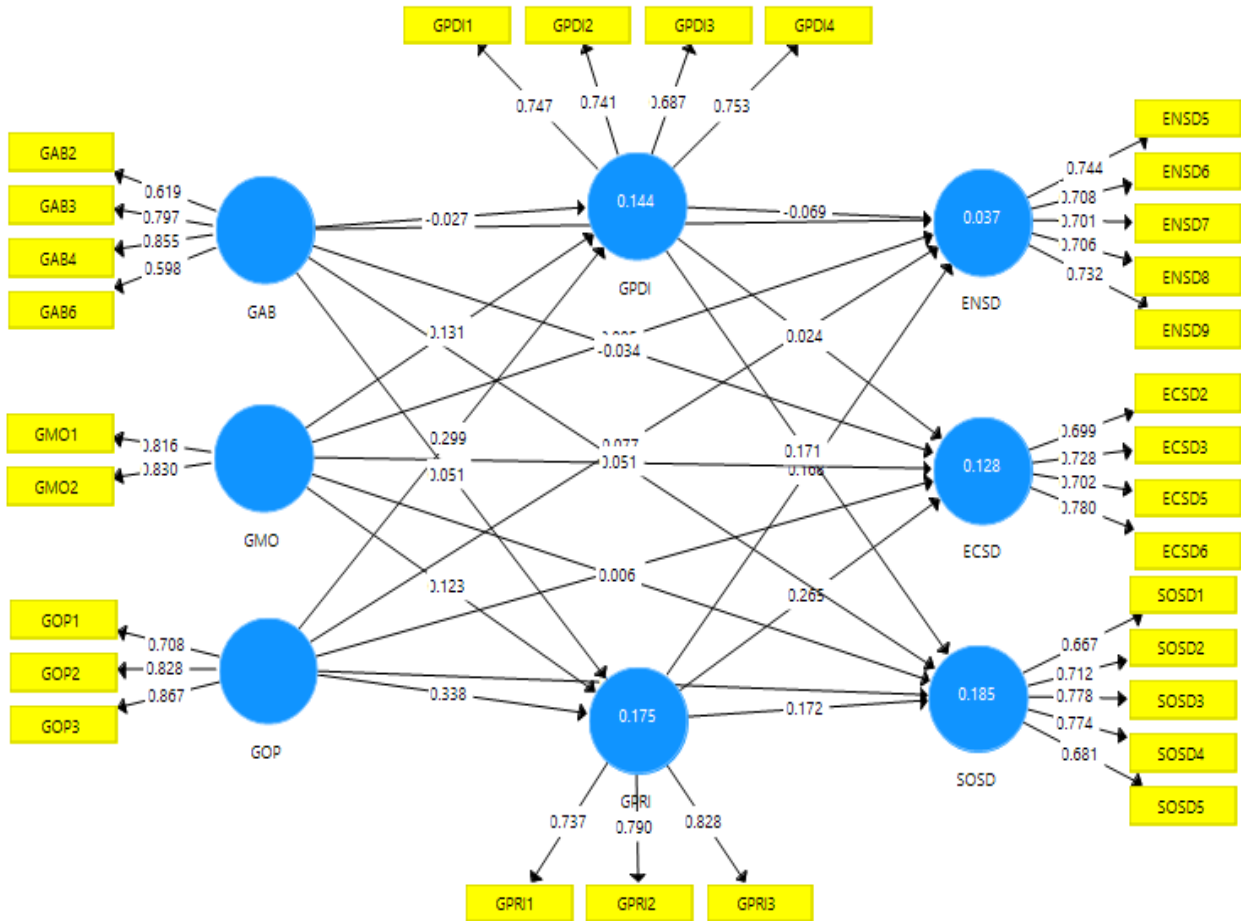


Figure. 3

Table 1 Construct Reliability and Validity (CRV)

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
ECSD	0.713	0.724	0.818	0.530
ENS	0.768	0.773	0.842	0.516
GAB	0.726	0.773	0.813	0.527
GMO	0.525	0.525	0.808	0.678
GOP	0.734	0.791	0.845	0.646
GDI	0.715	0.721	0.822	0.537
GPR	0.696	0.719	0.829	0.618
SOSD	0.772	0.775	0.846	0.524

Table 2 Fornell-Larcker Criterion (FLC)

	ECSD	ENSD	GAB	GMO	GOP	GPDI	GPRI	SOSD
ECSD	0.728							
ENSD	0.492	0.718						
GAB	0.698	0.681	0.726					
GMO	0.462	0.571	0.609	0.823				
GOP	0.449	0.517	0.662	0.685	0.804			
GPDI	0.429	0.587	0.473	0.475	0.360	0.733		
GPRI	0.332	0.254	0.343	0.288	0.401	0.583	0.786	
SOSD	0.448	0.208	0.408	0.194	0.325	0.340	0.353	0.724

Table 3 R Square

	R Square	R Square Adjusted
ECSD	0.382	0.317
ENSD	0.371	0.451
GPDI	0.337	0.474
GPRI	0.469	0.656
SOSD	0.404	0.591

Table 4 Heterotrait-Monotrait Ratio (HTMT)

	ECSD	ENSD	GAB	GMO	GOP	GPDI	GPRI	SOSD
ECSD								
ENSD	0.416							
GAB	0.449	0.594						
GMO	0.435	0.406	0.698					
GOP	0.397	0.468	0.624	0.798				
GPDI	0.489	0.430	0.484	0.449	0.491			
GPRI	0.438	0.497	0.496	0.473	0.531	0.839		
SOSD	0.605	0.468	0.691	0.699	0.400	0.452	0.466	

Table 5 Collinearity Statistics (VIF)

	VIF
ECSD2	1.474
ECSD3	1.582
ECSD5	1.202

ECSD6	1.316
ENSD5	1.406
ENSD6	1.285
ENSD7	1.397
ENSD8	1.601
ENSD9	1.588
GAB2	1.248
GAB3	1.462
GAB4	1.492
GAB6	1.424
GMO1	1.145
GMO2	1.145
GOP1	1.380
GOP2	1.567
GOP3	1.460
GPDI1	1.380
GPDI2	1.263
GPDI3	1.350
GPDI4	1.394
GPRI1	1.359
GPRI2	1.401
GPRI3	1.318
SOSD1	1.263

Table 6 Model Fit

	Saturated Model	Estimated Model
SRMR	0.065	0.091
d_ ULS	1.965	3.889
d_ G	0.511	0.623
Chi-Square	1237.872	1405.434
NFI	0.646	0.598

Table 7 Inner VIF

	ECSD	ENSD	GAB	GMO	GOP	GPDI	GPRI	SOSD
ECSD								
ENSD								
GAB	1.012	1.012				1.005	1.005	1.012

GMO	1.334	1.334	1.309	1.309	1.334
GOP	1.476	1.476	1.314	1.314	1.476
GPDI	1.576	1.576			1.576
GPRI	1.635	1.635			1.635
SOSD					

Table 8 Total Indirect Effects

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
GAB -> ECSD	0.013	0.013	0.017	0.743	0.005
GAB -> ENSD	0.010	0.010	0.010	1.044	0.003
GAB -> GPDI					
GAB -> GPRI					
GAB -> SOSD	0.004	0.005	0.019	0.223	0.008
GMO -> ECSD	0.036	0.037	0.017	2.124	0.003
GMO -> ENSD	0.012	0.012	0.012	0.985	0.005
GMO -> GPDI					
GMO -> GPRI					
GMO -> SOSD	0.043	0.045	0.018	2.475	0.010
GOP -> ECSD	0.096	0.097	0.026	3.716	0.000
GOP -> ENSD	0.036	0.036	0.024	1.481	0.001
GOP -> GPDI					
GOP -> GPRI					
GOP -> SOSD	0.109	0.109	0.024	4.511	0.000
GPDI -> ECSD					
GPDI -> ENSD					
GPDI -> SOSD					
GPRI -> ECSD					

Results Discussion

Table 1 showed the Reliability and Validity of the entire the measured constructs it defines as how a variable is consistent and accurate in the research analysis. As the Cronback alpha is also

reliable as it is greater than 0.6 so which needs to make it effective findings. The composite reliability also shown the value of greater than 0.7, this depicts the complete set of entire data of variables in term of its consistency and validity. Average variance also showed the desirable results which is greater than 0.5 but a quite reasonable. **Table 2** fornell-Lacker criterion showed the correlation of all intervening variable, in this the squire root should be greater than the square root of the entire results. The value of R Square is also positive and significant in term of all constructs.

Table 3 also showed the positive correlation of all variables as the values are greater than 0.2 or 0.3. **Table 4** Depicts the HTMT value which is <0.5 and >0.2 which showed the positive values of all latent constructs as the average measuring values showed the significant effect in respect of all latent variables. **Table 5** depicts the collinearity statistics of all constructs in which the value is greater than 1 and it relates to the entire measuring models, as these values depicted the variance inflation factors of all measuring constructs that showed the differentiating aspects of all variables. **Table 6** showed the model fit result in which NFI is greater than 0.5 which is also reliable & significant and D-g value also showed the positive aspects of all values related to the variables which is >0.5 . **Table 7** showed the inner variance inflation with greater than 1, this checks the internal validity of all results and constructs representing the whole constructs. **Table 8** explained the total Indirect of all measuring variables which showed the Sample mean, Standard deviation and T-Statistics of all measuring variables are significance and P-Values showed also be between 0.001 to 0.009.

Discussion

The study has shown that there is a strong influence of Green HR practices on CSD with the mediating role of green innovation (GI). The research has conducted by measuring multiple aspects of sustainable resources as it emerges the need for current era and postulates the positive outcomes in textile sector of Pakistan. Green innovation provided initiatives for establishing environmental objectives that meet the Environmental, social and economic sustainable objective of the firms. A firm environmental and economic objective helped to achieve the maximum efficiency through effective utilization of resources. Studies have been conducted about green innovation that would enhance the firm performance. Further, research have explored the relationship of Green HR and its impact on corporate sustainability as it encouraged employees to adopt the greener resources for achieving production efficiency. Such findings advance the scope of our study which would helpful for implementation of green practices in different organizations. We conclude that there is a strong association between green human resources with sustainable utilization of resources as it gives motivation to employees for taking green initiatives. Therefore, an employee performance about greener productivity depends upon the environmental beliefs and values, and these practices helps to shape the overall culture of greener productivity.

Theoretical Implications

Firstly, this study advances the understanding to advance the studies to RBV and AMO theory that what are the main causes to produce green innovation. We suggest that green innovation plays an important in shaping the green productivity and provide a strategic resource to all candidates. Our study enhances understanding of the AMO to attract, develop and retain the employees for the overall performance as well as to achieve the sustainable development of an organization. The green resources and employees are major elements that give value in achieving sustainable objectives of firm.

Certainly, we suggest that a firm should focus towards green practices in-order to develop, shape and retain the employees regarding green behaviors which would be resulted in the overall sustainable growth of an organization. The theory integrates the relation between AMO and RBV that how green practices contributes as essential role in green innovation processes (Gul, et al., 2022; Batool, et al., 2022; Bukhari, et al., 2021; Longoni et al., 2018). Therefore, it is suggested that Green HRM contributes an essential aspect for sustainable development goals as green human resource help to encourage employee abilities, motivation and opportunities that supports to stimulate the environmental, economic and social objectives of the firm.

Finally, we found that green practices improvised the firm internal competencies and knowledge that integrated for fulfilling firm overall goals and objectives. Green human resources includes green hiring & training, green rewards & empowerment that helps to attract, develop, retain & sustain the competent staff that would ultimately secure the organizational growth (Anlesinya & Susomrith, 2020). We suggested that an organization should align the green human resource function with social objectives in-order to effectively manage the green competencies for environmental goals. Results of our study suggested that Green HR have a proactive behavior towards the attraction and retention of green employees for achieving corporate sustainability in-order to compete in the market.

Practical Implications

Our study proposed that how green human resources participate in the sustainable development goals for maintaining superior environmental goals and objectives and how it helps to achieve the environmental objectives against its competitors. Therefore, it provides a suitable environment for different firms to adopt green management practices with the adoption of innovative techniques. There is also a great pressure from the stakeholder's side to adopt green utilization of resources for effectively managing the overall production efficiency. Green HR practices played an important role in acquiring & retaining the environmental competencies in green productive resources over its rivals. Secondly, GRHM is considered as strategic resource to develop the human potential for sustainable growth of the organizations.

Many organizations have opted the greener resources, and it give employees green job behavior and reduces the environmental pollution. Based on our study, we suggested that green culture should be promoted in the organization for maintaining the green behaviors and achieving competitive advantage, as green innovation needs to establish the green product and process innovation practices for sustainable developmental goals. Green practices also depend upon the implementation of qualifiable innovation in product and processes for achieving maximum efficiency. Green innovative practices shaped the positive behavior and eliminate the negative behavior arose in different organizations.

In other cases, where green innovation receives the unconditional support and commitment which ensures the green productivity through utilization of skilled labor. Top management become well aware about the technique and procedures that are required to institutionalized the environmental management concerns which would depict the employees to make less consumption of energy resources. All the efforts which are made by the organizational employees enhance the sustainability of environmental factors.

Conclusion and Recommendations

The study has shown that there is a positive and significance influence of Green HR practices on corporate sustainable development with the mediation of green innovation. A great number of challenges has been faced by an organization for implementation of green practices due to lack of capital and structure of the overall firm. Many organizations are following the great number have adopted the innovative techniques that leads towards the sustainable growth of the firm. After making research on these variables, we would like to give recommendation for future research in term of future aspect. The future research can be suggested on whole manufacturing sector of Pakistan irrespective of making a sample of textile or any other industry. Therefore, we suggest that further research can be performed on manufacturing and non-manufacturing sector by taking large sample that will create novelty in future research. We also suggest that future research can be performed on stakeholders separately for the effectiveness of Green managerial practices.

References

Abbas, J., & Sağsan, M. (2019)..pdf. (n.d.).

Abdul, D., Wenqi, J., & Tanveer, A. (2022). Prioritization of renewable energy source for electricity generation through AHP-VIKOR integrated methodology. *Renewable Energy*, 184, 1018–1032. <https://doi.org/10.1016/j.renene.2021.10.082>

- Adnan, A. B. M., Adeel, R., Irfan, M., Hamid, A., & Naveed, R. T. IPO Underpricing are Affected by the External and Internal Factors-An Evidence from Pakistan Stock Exchange.
- Ahmad, I., Gul, R. & Kashif, M. (2022). A Qualitative Study of Workplace Factors Causing Stress Among University Teachers and Coping Strategies. A Qualitative Study of Workplace Factors. *Hu Arenas* <https://doi.org/10.1007/s42087-022-00302-w>
- Ahmad, I., Gul, R. & Zeb, M. (2022). A Qualitative Inquiry of University Student's Experiences of Exam Stress and Its Effect on Their Academic Performance. *Hu Arenas*). <https://doi.org/10.1007/s42087-022-00285-8>
- Ahmad, I., Gul, R. (2021). Impact of Online Service-Learning on Civic and Social Justice Behavior of Undergraduate Laboratory-Based Graduates. *Human Arenas* <https://doi.org/10.1007/s42087-021-00244-9>
- Ali, I., Gul, R., Khan, S. S., Karim, K. (2021). An Evaluative Study of English Contrastive Rhetoric in Pashtu Speaking Areas of Pakistan: A Case Study of District Swat. *LINGUISTICA ANTVERPIENSIA*, Volume 2021, Issue-1. PP. 2183 - 2203
- Ali, R. A., & Irfan, M. (2020). The Impact of Corporate Governance, Fundamental and Macroeconomic Factors on Stock Prices: An Evidence from Sugar and Allied Industry of Pakistan. *Pakistan Journal of Social Sciences (PJSS)*, 40(3).
- Anas, A. S., Akhtar, H., Gul, R., Omar, B. A., Hanif, S. (2022). Personality Traits & Entrepreneurial Intentions: Financial Risk Taking as a mediator" *Frontiers in Psychology*. 28 July 2022. Sec.Organizational Psychology. <https://doi.org/10.3389/fpsyg.2022.927718>
- Asad, A., Abbas, J., Irfan, M., & Raza, H. M. A. (2017). The Impact of HPWS in Organizational Performance: A Mediating Role of Servant Leadership. *Journal of Managerial Sciences*, 11.
- Asada, A., Basheer, M. F., Irfan, M., Jiang, J., & Tahir, R. (2020). Open-Innovation and knowledge management in Small and Medium-Sized Enterprises (SMEs): The role of external knowledge and internal innovation. *Revista Argentina de Clínica Psicológica*, 29(4), 80-90.
- Albort-Morant, G., Leal-Millán, A., & Cepeda-Carrión, G. (2016). The antecedents of green innovation performance: A model of learning and capabilities. *Journal of Business Research*, 69(11), 4912–4917. <https://doi.org/10.1016/j.jbusres.2016.04.052>
- Albort-Morant, G., Leal-Rodríguez, A. L., & De Marchi, V. (2018). Absorptive capacity and relationship learning mechanisms as complementary drivers of green innovation performance. *Journal of Knowledge Management*, 22(2), 432–452. <https://doi.org/10.1108/JKM-07-2017-0310>
- Allameh, S. M. (2018). Antecedents and consequences of intellectual capital: The role of social capital, knowledge sharing and innovation. *Journal of Intellectual Capital*, 19(5), 858–874. <https://doi.org/10.1108/JIC-05-2017-0068>
- Amini, M., Bienstock, C. C., & Narcum, J. A. (2018). Status of corporate sustainability: a content analysis of Fortune 500 companies. *Business Strategy and the Environment*, 27(8),

1450–1461. <https://doi.org/10.1002/bse.2195>

Amjad, F., Abbas, W., Zia-UR-Rehman, M., Baig, S. A., Hashim, M., Khan, A., & Rehman, H. ur. (2021). Effect of green human resource management practices on organizational sustainability: the mediating role of environmental and employee performance. *Environmental Science and Pollution Research*, 28(22), 28191–28206. <https://doi.org/10.1007/s11356-020-11307-9>

Anlesinya, A., & Susomrith, P. (2020). Sustainable human resource management: a systematic review of a developing field. *Journal of Global Responsibility*, 11(3), 295–324. <https://doi.org/10.1108/JGR-04-2019-0038>

Autoridad Nacional del Servicio Civil. (2021). 濟無No Title No Title No Title. *Angewandte Chemie International Edition*, 6(11), 951–952., 2013–2015.

Barney, J., Wright, M., & Ketchen, D. J. (2001). The resource-based view of the firm: Ten years after 1991. *Journal of Management*, 27(6), 625–641. <https://doi.org/10.1177/014920630102700601>

Batool, S., Tahir, T., Gul, R., Nawaz, H. (2022). An Educational Intervention to Optimize Physical Wellness of University Students. *Journal of Positive School Psychology*, Vol. 6, No. 8, 3779-3792

Bukhari, S. K. U. S., Gul, R., Bashir, T., Zakir, S., & Javed, T. (2021). Exploring managerial skills of Pakistan Public Universities (PPUs) middle managers for campus sustainability. *Journal of Sustainable Finance & Investment*, 1-19. doi: 10.1080/20430795.2021.1883985

Boiral, O., Ebrahimi, M., Kuyken, K., & Talbot, D. (2019). Greening Remote SMEs: The Case of Small Regional Airports. *Journal of Business Ethics*, 154(3), 813–827. <https://doi.org/10.1007/s10551-017-3447-0>

Brockner, J., Flynn, F. J., Dolan, R. J., Ostfield, A., Pace, D., & Ziskin, I. V. (2006). Commentary on “radical HRM innovation and competitive advantage: The Moneyball story.” *Human Resource Management*, 45(1), 127–145. <https://doi.org/10.1002/hrm>

Cavicchi, C. (2017). Healthcare sustainability and the role of intellectual capital: Evidence from an Italian Regional Health Service. *Journal of Intellectual Capital*, 18(3), 544–563. <https://doi.org/10.1108/JIC-12-2016-0128>

Chen, Y. S., & Chang, C. H. (2013). The Determinants of Green Product Development Performance: Green Dynamic Capabilities, Green Transformational Leadership, and Green Creativity. *Journal of Business Ethics*, 116(1), 107–119. <https://doi.org/10.1007/s10551-012-1452-x>

Chen, Y., Tang, G., Jin, J., Li, J., & Paillé, P. (2015). Linking Market Orientation and Environmental Performance: The Influence of Environmental Strategy, Employee’s Environmental Involvement, and Environmental Product Quality. *Journal of Business*

- Ethics*, 127(2), 479–500. <https://doi.org/10.1007/s10551-014-2059-1>
- De Kock, F. S., Lievens, F., & Born, M. P. (2020). The profile of the ‘Good Judge’ in HRM: A systematic review and agenda for future research. *Human Resource Management Review*, 30(2), 100667. <https://doi.org/10.1016/j.hrmr.2018.09.003>
- Del Giudice, M., Soto-Acosta, P., Carayannis, E., & Scuotto, V. (2018). Emerging perspectives on business process management (BPM): IT-based processes and ambidextrous organizations, theory and practice. *Business Process Management Journal*, 24(5), 1070–1076. <https://doi.org/10.1108/BPMJ-09-2018-336>
- Dubey, R., Gunasekaran, A., & Samar Ali, S. (2015). Exploring the relationship between leadership, operational practices, institutional pressures and environmental performance: A framework for green supply chain. *International Journal of Production Economics*, 160, 120–132. <https://doi.org/10.1016/j.ijpe.2014.10.001>.
- Gill, A. A., Ahmad, B., & Kazmi, S. (2021). The effect of green human resource management on environmental performance: The mediating role of employee eco-friendly behavior. *Management Science Letters*, 11, 1725–1736. <https://doi.org/10.5267/j.msl.2021.2.010>
- Guerci, M., Longoni, A., & Luzzini, D. (2016). Translating stakeholder pressures into environmental performance – the mediating role of green HRM practices. *International Journal of Human Resource Management*, 27(2), 262–289. <https://doi.org/10.1080/09585192.2015.1065431>
- Gul, R., Tahir, T., Batool, S., Ishfaq, U., Nawaz, H. (2022). Effect Of Different Classroom Predicators On Students Behavioral Engagement. *Journal of Positive School Psychology*, Vol. 6, No. 8, 3759-3778.
- Gul, R., Tahir., Ishfaq, U., Batool, T. (2021). Impact of Teachers Workload on their Time Management Skills at University Level. *Indian Journal of Economics and Business*.20(3).
- Gul, R., Ahmad, I., Tahir, T., Ishfaq, U. (2022). Development and factor analysis of an Instrument to measure service-learning management. *Heliyon*, Volume 8, Issue 4. <https://doi.org/10.1016/j.heliyon.2022.e09205>.
- Gul, R., Zakir, S., Ali, I., Karim, H., Hussain, R. (2021). The Impact of Education on Business Opportunities for Women Entrepreneurs in Public & Private Television Advertisements in Pakistan. *Industrial Engineering & Management Systems*, 20 (2): pp.140-147
DOI: <https://doi.org/10.7232/iems.2021.20.2.140>
- Gul, R., Talat, M., Mumtaz, M., Shaheen, L. (2021). Does Intelligence Matters in Teaching? Exploring the Impact of Teachers Intelligence on Teaching Pedagogies of Secondary School Science Teachers. *Multicultural Education*, 7(3). doi: 10.5281/zenodo.4647944.
- Gul, R., Ayub, A., Mazhar, S., Uddin, S., S., Khanum, M. (2021). Teachers’ Perceptions on Students’ Cultural and Linguistic Diversity and its Impact on their Approaches towards Culturally Teaching Practices. *TESOL International Journal*, 16 (3.2).

- Gul, R., Khilji, G. (2021). Exploring the need for a responsive school curriculum to cope with the Covid-19 pandemic in Pakistan. *Prospects*, 51, 503–522. <https://doi.org/10.1007/s11125-020-09540-8>.
- Gul, N., Tahir, T., Gul, R., Batool, S. (2022). Investigating Teachers' Knowledge About Dyslexia: A Study At Primary School Level. *International Journal of Early Childhood Special Education*. Vol 14, Issue 03
- Gunasekaran, A., & Spalanzani, A. (2012). Sustainability of manufacturing and services: Investigations for research and applications. *International Journal of Production Economics*, 140(1), 35–47. <https://doi.org/10.1016/j.ijpe.2011.05.011>
- Human, G., Practices, R., Development, C. S., Practices, G. M., Ahsan, M., Secondary, C. A., Author, C., Pasha, A. T., Ahsan, M., Innovation, G., & Pasha, A. T. (n.d.). *Environmental Science and Pollution Research The Impact of Green HR Practices on Corporate Sustainable Development with the Mediation of Green Innovation*.
- Irfan, D. M., & Shahid, M. (2021). Impact of project management methodology, project governance, and knowledge sharing behavior on project success with the moderating effect of documentation culture: a case. *Indian J. Econ. Bus*, 20, 937-955.
- Irfan, M., Kausar, M., & Malik, M. S. (2019). Extended Value-Added Intellectual Coefficient and Financial Reporting Quality: Moderating Role of Global Financial Crisis.
- Irfan, M., Qureshi, S. F., Naveed, R. T., Dilshad, W., & Memoona, K. (2017). ANALYSIS AGRI BUSINESS PROBLEMS AND PROSPECTS IN PAKISTAN: A CONTENT ANALYSIS APPROACH. *Journal of Quality and Technology Management*, 14(II), 203-214.
- Irfan, M., Malik, M. S., & Zubair, S. K. (2022). Impact of Vlog Marketing on Consumer Travel Intent and Consumer Purchase Intent With the Moderating Role of Destination Image and Ease of Travel. *SAGE Open*, 12(2), 21582440221099522.
- Kaur, S., Gupta, S., Singh, S. K., & Perano, M. (2019). Organizational ambidexterity through global strategic partnerships: A cognitive computing perspective. *Technological Forecasting and Social Change*, 145(April), 43–54. <https://doi.org/10.1016/j.techfore.2019.04.027>
- Khar, M. A., & Irfan, M. (2021). The Impact of Socioeconomic Factors on Consumer Buying Behavior: A Case of Mobile Phone Market of Pakistan. *Indian Journal of Economics and Business*, 20(4).
- Munir, S., Irfan, M., & Malik, M. S. (2022). Impact of Sustainable Finance on the Firm Performance: A Study on the Pakistani Banking Sector. *Indian Journal of Economics and Business*, 21(2).
- Malik, M. S., Irfan, M., Malik, K. U., & Mehdi, H. (2022). Heuristic Factors in Investment Performance in the Stock Market in a Volatile Environment. *Apuntes del Cenés*, 41(73).
- Leal-Millán, A., Roldán, J. L., Leal-Rodríguez, A. L., & Ortega-Gutiérrez, J. (2016). IT and relationship learning in networks as drivers of green innovation and customer capital:

- evidence from the automobile sector. *Journal of Knowledge Management*, 20(3), 444–464. <https://doi.org/10.1108/JKM-05-2015-0203>
- Leroy, H., Segers, J., van Dierendonck, D., & den Hartog, D. (2018). Managing people in organizations: Integrating the study of HRM and leadership. *Human Resource Management Review*, 28(3), 249–257. <https://doi.org/10.1016/j.hrmr.2018.02.002>
- Longoni, A., Luzzini, D., & Guerci, M. (2018). Deploying Environmental Management Across Functions: The Relationship Between Green Human Resource Management and Green Supply Chain Management. *Journal of Business Ethics*, 151(4), 1081–1095. <https://doi.org/10.1007/s10551-016-3228-1>
- Malik, S. Y., Cao, Y., Mughal, Y. H., Kundi, G. M., Mughal, M. H., & Ramayah, T. (2020). Pathways towards sustainability in organizations: Empirical evidence on the role of green human resource management practices and green intellectual capital. *Sustainability (Switzerland)*, 12(8), 1–24. <https://doi.org/10.3390/SU12083228>
- Masri, H. A., & Jaaron, A. A. M. (2017). Assessing green human resources management practices in Palestinian manufacturing context: An empirical study. *Journal of Cleaner Production*, 143, 474–489. <https://doi.org/10.1016/j.jclepro.2016.12.087>
- Mishra, R. K., Sarkar, S., & Kiranmai, J. (2014). Green HRM: Innovative approach in Indian public Enterprises. *World Review of Science, Technology and Sustainable Development*, 11(1), 26–42. <https://doi.org/10.1504/WRSTSD.2014.062374>
- Oh, D. S., Phillips, F., Park, S., & Lee, E. (2016). Innovation ecosystems: A critical examination. *Technovation*, 54, 1–6. <https://doi.org/10.1016/j.technovation.2016.02.004>
- Oliva, F. L., Semensato, B. I., Prioste, D. B., Winandy, E. J. L., Bution, J. L., Couto, M. H. G., Bottacin, M. A., Mac Lennan, M. L. F., Teberga, P. M. F., Santos, R. F., Singh, S. K., da Silva, S. F., & Massaini, S. A. (2019). Innovation in the main Brazilian business sectors: characteristics, types and comparison of innovation. *Journal of Knowledge Management*, 23(1), 135–175. <https://doi.org/10.1108/JKM-03-2018-0159>
- Paillé, P., Valéau, P., & Renwick, D. W. (2020). Leveraging green human resource practices to achieve environmental sustainability. *Journal of Cleaner Production*, 260. <https://doi.org/10.1016/j.jclepro.2020.121137>
- Palmer, C., Niemand, T., Stöckmann, C., Kraus, S., & Kailer, N. (2019). The interplay of entrepreneurial orientation and psychological traits in explaining firm performance. *Journal of Business Research*, 94(October 2017), 183–194. <https://doi.org/10.1016/j.jbusres.2017.10.005>
- Phillips, F., Lin, H., Schifter, T., & Folse, N. (2021). Augmented Popperian experiments: A framework for sustainability knowledge development across contexts. *European Journal of International Management*, 16(4), 631–646. <https://doi.org/10.1504/EJIM.2021.118570>

- Ren, S., Tang, G., & E. Jackson, S. (2018). Green human resource management research in emergence: A review and future directions. *Asia Pacific Journal of Management*, 35(3), 769–803. <https://doi.org/10.1007/s10490-017-9532-1>
- Renwick, D. W. S., Redman, T., & Maguire, S. (2013). Green Human Resource Management: A Review and Research Agenda*. *International Journal of Management Reviews*, 15(1), 1–14. <https://doi.org/10.1111/j.1468-2370.2011.00328.x>
- Roos, G., & O'Connor, A. (2015). Government policy implications of intellectual capital: An Australian manufacturing case study. *Journal of Intellectual Capital*, 16(2), 364–389. <https://doi.org/10.1108/JIC-02-2015-0016>
- Shahzad, M., Qu, Y., Javed, S. A., Zafar, A. U., & Rehman, S. U. (2020). Relation of environment sustainability to CSR and green innovation: A case of Pakistani manufacturing industry. *Journal of Cleaner Production*, 253, 119938. <https://doi.org/10.1016/j.jclepro.2019.119938>
- Shah Bukhari, S.K.U., Said, H., Gul, R. and Ibna Seraj, P.M. (2022), "Barriers to sustainability at Pakistan public universities and the way forward", *International Journal of Sustainability in Higher Education*, Vol. 23 No. 4, pp. 865-886. <https://doi.org/10.1108/IJSHE-09-2020-0352>
- Singh, S. K., & El-Kassar, A. N. (2019). Role of big data analytics in developing sustainable capabilities. *Journal of Cleaner Production*, 213, 1264–1273. <https://doi.org/10.1016/j.jclepro.2018.12.199>
- Singh, S. K., Giudice, M. Del, Chierici, R., & Graziano, D. (2020). Green innovation and environmental performance: The role of green transformational leadership and green human resource management. *Technological Forecasting and Social Change*, 150. <https://doi.org/10.1016/j.techfore.2019.119762>
- Song, W., Yu, H., & Xu, H. (2020). Effects of green human resource management and managerial environmental concern on green innovation. *European Journal of Innovation Management*, 24(3), 951–967. <https://doi.org/10.1108/EJIM-11-2019-0315>
- Tang, G., Chen, Y., Jiang, Y., Paillé, P., & Jia, J. (2018). Green human resource management practices: scale development and validity. *Asia Pacific Journal of Human Resources*, 56(1), 31–55. <https://doi.org/10.1111/1744-7941.12147>
- Tanveer, A., Anwer, M. A., & Umar, M. (2021). The Impact of Environmental Sustainability and Financial Resources Utilization on Firm Financial Performance: The Mediating Role of Leadership Styles. *Annals of Social Sciences and Perspective*, 2(2), 389–407. <https://doi.org/10.52700/assap.v2i2.46>
- Tanveer, A., Song, H., Faheem, M., Daud, A., & Naseer, S. (2021). Unveiling the asymmetric impact of energy consumption on environmental mitigation in the manufacturing sector of Pakistan. *Environmental Science and Pollution Research*, 28(45), 64586–64605. <https://doi.org/10.1007/s11356-021-14955-7>

- Tanveer, A., Song, H., Faheem, M., & Sharif, I. (2021). Validation of environmental Philips curve in Pakistan : a fresh insight through ARDL technique. *Environmental Science and Pollution Research*. <https://doi.org/10.1007/s11356-021-17099-w>
- Tseng, M. L., Tan, K., & Chiu, A. S. F. (2016). Identifying the competitive determinants of firms' green supply chain capabilities under uncertainty. *Clean Technologies and Environmental Policy*, 18(5), 1247–1262. <https://doi.org/10.1007/s10098-015-1064-0>
- Yong, J. Y., Yusliza, M. Y., 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. *Business Strategy and the Environment*, 29(1), 212–228. <https://doi.org/10.1002/bse.2359>
- 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. *International Journal of Production Economics*, 219(August 2018), 224–235. <https://doi.org/10.1016/j.ijpe.2019.06.013>
- Yu, W., Ramanathan, R., & Nath, P. (2017). Environmental pressures and performance: An analysis of the roles of environmental innovation strategy and marketing capability. *Technological Forecasting and Social Change*, 117, 160–169. <https://doi.org/10.1016/j.techfore.2016.12.005>
- Yusliza, M. Y., Othman, N. Z., & Jabbour, C. J. C. (2017). Deciphering the implementation of green human resource management in an emerging economy. In *Journal of Management Development* (Vol. 36, Issue 10). <https://doi.org/10.1108/JMD-01-2017-0027>
- Zhou, S., Zhang, D., Lyu, C., & Zhang, H. (2018). Does seeing “mind acts upon mind” affect green psychological climate and green product development performance? The role of matching between green transformational leadership and individual green values. *Sustainability (Switzerland)*, 10(9). <https://doi.org/10.3390/su10093206>
- Zhou, G., Gul, R., & Tufail, M. (2022). Does Servant Leadership Stimulate Work Engagement? The Moderating Role of Trust in the Leader. *Frontiers in Psychology*, 13. doi: [10.3389/fpsyg.2022.925732](https://doi.org/10.3389/fpsyg.2022.925732)

Questionnaire

Gender

- a) Male b) Female c) prefer not to say

Education

- a) Intermediate b) Bachelor c) Masters d) MPhil

Organization:

Purpose: The present study is an endeavor to identify the Role of Green Human Resource practices. This research would investigate the Effect of Green HR practices through (Green ability, Motivation, and Opportunity) on Corporate Sustainable Development (Environmental, Social and Economic sustainability) with the mediating role of Green innovation (Green product and process innovation). Please express how far these practices are prevailing in organizations by indicating your level of Agreement/Disagreement on Five point Likert scale.

(Where SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree, SA=Strongly Agree)

The information obtain will be used for MS research purpose and strictly would be kept as confidential.

According to P. Bansal, **Corporate Sustainable Development (Environmental, Economic and Social sustainability)**

Environmentally Sustainable Development (ENSD)

- 1) The Mined/Manufactured products have less environmentally harmful impacts than its previous year or than its competitors.

SD	D	N	A	SA
----	---	---	---	----

- 2) The Mined/Manufactured products with less environmentally damaging inputs than in previous years or than its competitors.

SD	D	N	A	SA
----	---	---	---	----

- 3) We chose inputs from resources that are remediated or replenished.

SD	D	N	A	SA
----	---	---	---	----

- 4) We reduced environmental impacts of production process or eliminated environmentally damaging processes.

SD	D	N	A	SA
----	---	---	---	----

- 5) Eliminated or reduced operations in environmentally sensitive locations.

SD	D	N	A	SA
----	---	---	---	----

- 6) Attempted to reduce likelihood of environmental accidents through process improvements.

SD	D	N	A	SA
----	---	---	---	----

- 7) There is Reduced waste by streamlining processes and used waste as inputs for own process.

SD	D	N	A	SA
----	---	---	---	----

- 8) The waste is disposed of responsibly.

SD	D	N	A	SA
----	---	---	---	----

- 9) Handled or stored toxic waste responsibly.

SD	D	N	A	SA
----	---	---	---	----

Economic Sustainable Development (ECSD)

- 1) We worked with government officials to protect the company's interests.

SD	D	N	A	SA
----	---	---	---	----

- 2) We reduced the cost of inputs for same level of outputs.

SD	D	N	A	SA
----	---	---	---	----

- 3) We reduced costs for waste management for same level of outputs.

SD	D	N	A	SA
----	---	---	---	----

- 4) We differentiated the process or product based on the marketing efforts of process/product's environmental performance.

SD	D	N	A	SA
----	---	---	---	----

- 5) We sold waste product for revenue generation.

SD	D	N	A	SA
----	---	---	---	----

- 6) We created spin-off technologies that could be profitably applied to other areas of the business.

SD	D	N	A	SA
----	---	---	---	----

Social Sustainable Development (SOSD)

- 1) We consider the interest of stakeholders for investment decision of the firm by creating formal dialogue.

SD	D	N	A	SA
----	---	---	---	----

- 2) We communicate the firm’s environmental impacts and risks to the general public.

SD	D	N	A	SA
----	---	---	---	----

- 3) We focus in improving employee or community health and safety.

SD	D	N	A	SA
----	---	---	---	----

- 4) Protected claims and rights of aboriginal peoples or local community.

SD	D	N	A	SA
----	---	---	---	----

- 5) There is more concern for visual aspects of the firm’s facilities and operations.

SD	D	N	A	SA
----	---	---	---	----

- 6) We Recognize and acted on the need to fund local community and initiatives.

SD	D	N	A	SA
----	---	---	---	----

According to Chen et al, **Green Innovation (product and process innovation)**

Green Product Innovation (GPDI)

- 1) My company uses material that produces least pollution.

SD	D	N	A	SA
----	---	---	---	----

- 2) My company uses materials that consume less energy and resources.

SD	D	N	A	SA
----	---	---	---	----

- 3) Our company uses materials to design environmentally friendly product.

SD	D	N	A	SA
----	---	---	---	----

- 4) Our company uses raw materials that are easy to recycle, reuse, and decompose.

SD	D	N	A	SA
----	---	---	---	----

Green Process Innovation (GPRI)

- 1) The manufacturing processes of my company effectively reduce hazardous substance or waste.

SD	D	N	A	SA
----	---	---	---	----

2) The Manufacturing processes effectively reduce consumption of coal, oil, electricity or water.

SD	D	N	A	SA
----	---	---	---	----

3) The manufacturing processes effectively reduce the use of raw materials.

SD	D	N	A	SA
----	---	---	---	----

Sun et al and Renwick et al, **Green Human Resource practices (Green Ability, Motivation, and Opportunity)**

Green Ability (GAB)

1) Great Efforts are made for selection of right person at right place.

SD	D	N	A	SA
----	---	---	---	----

2) Hiring of only those candidates are practiced who possess environmental values.

SD	D	N	A	SA
----	---	---	---	----

3) The Considerable importance has been given to green Staffing process.

SD	D	N	A	SA
----	---	---	---	----

4) Every employee focused and undergoes mandatory environmental training.

SD	D	N	A	SA
----	---	---	---	----

5) Environmental training is designed to enhance employee's environmental skills & knowledge.

SD	D	N	A	SA
----	---	---	---	----

6) Employees use environmental training in performing their jobs.

SD	D	N	A	SA
----	---	---	---	----

Green Motivation (GMO)

1) Our Performance appraisal records environmental performance.

SD	D	N	A	SA
----	---	---	---	----

2) Our Performance appraisal includes environmental incidents, responsibilities, concerns and policy.

SD	D	N	A	SA
----	---	---	---	----

3) The Employee gets rewards for environmental management practices.

SD	D	N	A	SA
----	---	---	---	----

4) The Employee gets rewards for acquiring specific environmental competencies.

SD	D	N	A	SA
----	---	---	---	----

Green Opportunity (GOP)

1) Employees are allowed to involve in environmentally friendly behavior.

SD	D	N	A	SA
----	---	---	---	----

2) The Use of team-work for resolving environmental issues are follow in our organization.

SD	D	N	A	SA
----	---	---	---	----

3) Employees are encouraged to discuss environmental issues in team meetings.

SD	D	N	A	SA
----	---	---	---	----