RESEARCH ARTICLE

Investigation from Green Human Resource Practices to Green Innovative Performance in Pakistani Manufacturing Firms

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Abstract: Green Human Resource Management (GHRM) has emerged as a key catalyst to sustainable performance, however, empirical studies of its impact on green organizational innovation, especially within the manufacture sector of developing economies, are limited. This descriptive study examines how green human resource practices, namely, green recruiting and selection (GRS), green training and development (GTD), green compensation and benefits (GCB), and green innovation performance (GIP) affect the green innovation performance of firms by looking at both the direct and indirect impacts. Besides, the research investigates green organizational culture (GOC) as a possible mediating variable that can be used to connect these practices with better environmental performance. Using questionnaire survey, the data of 384 manufacturing employees in Pakistan was gathered. The analysis was done by using Smart Partial Least Squares 4 Structural Equation Modeling (PLS-SEM) and the hypotheses were tested. Results show that GOC plays a significant role in the correlation between green HR practices and green innovation performance and hence emphasizes the role of a favorable cultural environment in converting HR efforts into real environmental benefits. The findings are of significant theoretical and practical value as they bring the GHRM literature to a developing country manufacturing context, and practical relevance due to its implication of the importance of developing green culture to achieve a full potential on green HR investments.

Keywords: Green Human Resource Management Practices, Green Innovation Performance, Green Organizational Culture

Introduction

Recent empirical studies show that the growth of the global economic activity may have negative effects on human populations and the ecological systems, which further encourages companies to pursue the goal of sustainability. It is also observed that corporate organizations in more advanced stages are considering environmental performance as a key element of their strategic system (Rubel et al., 2021).All members should be given credit in their contribution towards the realization of goals of being green in operations, in the context of organizational commitments to greener operations.

Particularly, the manufacturing industry of the world is moving towards the paradigm of Go Green (Lartey et al.,2021; Mathiyazhagan et al.,2021; Trujillo-Gallego et al.,2021), thus pushing the industrial sector towards adopting an integrated position, which puts social, economic, and environmental goals into balance. In the emerging and developing markets of Pakistan, industrial players engaged in promotion of green production, responsible procurement, supply-chain and logistics management, innovation, financial system, information networks, customs practice, technological development, and green human resource

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management practices are actively promoted (Ababneh, 2021; De Giovanni & Cariola, 2021; S. Harris et al., 2021).

The production industry poses an enormous challenge to companies wishing to survive in the long-term perspective not only in terms of the economic factors but also in terms of serious consequences to the health of the population and the environment. The operations of this industry pose a threat to the health and safety of people, and also worsen the environmental degradation. Examples of such degradation are air pollution, water contamination, soil impairment, and an increasing climate crisis; all of these effects drain natural resources and undermine planetary systems that support the health of humans and ecological systems. (Awan et al., 2023; Wu et al., 2020). Researchers and professionals are concerned that Pakistan's carbon dioxide emissions would increase by 6% annually (Abbass et al., 2022; Anwar et al., 2020). The manufacturing companies must focus on the improvement of their environmental performance; this is an essential measure that can help to cope with the most serious ecological issues of the planet. The stakeholders, including regulators, investors, and the overall consumer market are increasingly demanding that the corporations minimize their carbon footprints, minimize their waste productions, and adopt more sustainable strategies. So, to protect the planet, manufacturers have to take up the leading role in this context. (Al-Swidi et al., 2021; Seroka-Stolka & Fijorek, 2020).

Even with a relatively small amount of natural resources used to create products and earn revenue, the manufacturing industry remains one that is highly problematic to the environment. In recent research, it has been proven that green human resource management (G-HRM) helps companies to reduce the environmental impacts of their activities simultaneously improving the overall environmental performance (Ababneh, 2021; Singh, Del Giudice, et al., 2020).These strategies are depicted using practical tools such as recyclable products, green corporate culture, corporate social responsibility (CSR) and green incentives (GI).At the heart of this initiative is the Green Organizational Culture (GOC) an array of values and practices that guides a company in aligning its daily operations in accordance with values of environmental stewardship (Azhar & Yang, 2022).

GOC states that a company must not only reduce pollution but adopting an actual green mentality (Chen et al., 2020).This may be assisted through human resource practices such as recruiting individuals who are already aware of environmental sustainability, offering them training on green related issues, and encouraging them to be sustainable through an effective reward and performance management program. Besides, the companies can establish a system whereby staff members have periodic opportunities to participate in the green projects and activities (Muisyo & Qin, 2021).

In Pakistan, the influence of green human resource management practices on organizational performance, corporate social responsibility initiatives, and the overall sustainability outcomes has been researched by scholars (Bhutto & Auranzeb, 2016).CSR is all about corporations taking their role in the interest of the society, customers, its employees, and all other people who are interested in what the corporation does (Abbas, 2020)It is one of the ways through which businesses can build their reputation by producing products that not only make them a profit but also comply with ethical principles. In Pakistan, owing to the increased attention to the environmental issues, CSR is particularly essential in the manufacturing industry, whereby it leads to increased accountability and sustainability over the long run. When embracing the concept of Green Human Resource Management (GHRM), companies will be able to produce an informed workforce, but more importantly include a group of employees who are passionate about environmental protection.(Hameed et al., 2020). Such orientation spurs green innovation on environmentally friendly products and technologies.

Corporate Social Responsibility (CSR) as a key dimension of environmental sustainability does not only promote but also controls competition and sustainable development in the manufacturing industry in Pakistan. CSR may encourage employees to provide environmental relevant ideas by providing them with the chance to interact ,utilize and disseminate knowledge ultimately promoting green innovation performance (Masri & Jaaron, 2017).Based on this reasoning, Green Human Resource Management practices are widely considered essential for supporting CSR goals. Green HR practices are projected to affect environmental performance indirectly by promoting green behavior that is innovative. The environmental innovative behavior of employees have been determined in previous studies as a predictor of the green innovation performance (Song et al., 2020).Therefore, the major gap that is going to be addressed in this research is to understand whether Green Organizational Culture mediates the relationship between Green HR practices and Green Innovation Performance, and to investigate if there is positive relationship between Green Human Resource Management Practices and Green Innovation Performance.

Research Questions

Based on the above discussion, the following questions are the subject of this study:

Q1: How can Green Human Resource Management Practices influence Green Innovative Performance??

Q2: What mediating function does Green Organizational Culture perform in the relationship between Green Human Resource Management Practices and Green Innovative Performance?

Literature Review

Green Innovative Performance:

Innovation, in general, involves the implementation of new products, services, or modes of operation into practice that usually inflict some level of organizational change, be it significant or marginal (Ashok et al., 2014).Regarding green innovations, Beise & Rennings (2005) define them as new or improved methodologies, processes, techniques, systems, and products with the help of which environmental damage is prevented. Examples of such innovations include energy-efficient upgrades, pollution reduction steps, designing products that are environment friendly, and recyclability arrangements. Green innovations can be radical innovations or incremental improvement of the technologies that are already in existence (Chen et al., 2014).

Albort-Morant et al (2017) argue that Green Innovation (GI) is a process of creating new products or processes with the main goal to minimize or, possibly, avoid any adverse environmental impact. At the same time, these innovations are protecting the ecosystem and providing business with growth and prosperity. The scholars divide technological advancements into two categories product innovations that include new goods or better ones, and process innovations, which are new or better ways of manufacturing. The innovation in green touches all areas but the issues of sustainability are more broad (Chen et al., 2014) . Green product innovation is focused on redesigning the properties of a product in such a way that it minimizes its environmental impact as compared to green process innovation that aims at reducing any element of the manufacturing chain either the materials obtained, the manufacturing of the object or even its delivery in a bid to minimize environmental degradation (Klassen & Whybark, 1999). These innovations can help the firms deal with a narrow or broad portfolio of environmental issues, and the nature of the sustainability concerns that the firms face, the level to which sustainability is embedded in the overarching innovation strategy determine the strategic solutions that they should implement to achieve their goals (De Marchi & Grandinetti, 2013) .

Green Innovation Processes (GIP) represent a corporate strategy that is supposed to make operation more environmentally sound by creating and introducing new products and processes, which are environment friendly. In the modern business environment, companies are increasingly becoming green innovative (Molina-Azorín et al., 2009).Such innovation is a powerful lever (Chen & Chang, 2013) that can

help organizations to minimize their environmental footprints and at the same time remain competitive and increase overall performance (Chang, 2011; Chen et al., 2012). Green innovation offers a financial reward to the company by supporting corporate strategies with environmental goals, meeting the anticipations of the customers, partners, governments and the society in general. Further the strong dedication to green practices can build barriers to entry thus frustrating the possibility of imitation by the competitors and providing the innovator with a sustainable competitive edge (Chang, 2011) .

A study about green innovations reveals that it is not a simple issue of refining current knowledge in order to create the ideas. According to empirical studies on green innovations, there is no simple refinement on existing company capabilities to translate these ideas into practice because it forces companies not only to learn something new but also that is considerably beyond their previous spheres of knowledge and is very complex. That is, this would in many cases involve diving into a real technological frontier (Carrillo-Hermosilla et al., 2010).When a company wishes to reduce emissions throughout the life cycle of a product, or to enable it to be more recycles, it may typically necessitate combining very varied resources and expertise, most of which the company may not have within its own operations.

This is the reason why the cooperation with external partners, such as suppliers, universities, or knowledge intensive service firms in the area of green breakthroughs, becomes even more urgent (Cainelli et al., 2015; De Marchi, 2012).In order to make the market introduction of new technologies that are environment friendly faster, it is crucial that these partners should learn with each other and create some common language and understanding.

Green Human Resource Management Practices

Recent work in the world has redefined the importance of green human resource management (GHRM) in the promotion of sustainable business practices. (Pham et al., 2019) revealed that GHRM programs in the restaurant industry (especially the recruitment, training, performance appraisal, and employee engagement programs) in Vietnam lead to environment friendly practices. Similar results were also reported elsewhere; (Singh, Giudice, et al., 2020) and (Roscoe et al., 2019), used UAE manufacturing companies, Islam et al. (2023) used Malaysian restaurants, and (Andjarwati et al., 2019) used Indonesia based mining companies. These fragmented studies have been synthesized in a systematic review by Benevene & Buonomo (2020) which highlights that the fundamental elements of GHRM that include green recruitment, selection, training, development and appraisal, always promote pro-environmental behavior.

In a recent study on Malaysian universities, (Farooq et al., 2021) found a number of obstacles to the development of ecological behavior among employees, which included, among other factors, the lack of top management support, a lack of green mindfulness, and poor environmental attitudes (Rizwan et al., 2014). These challenges are reflective of those described in other developing environments, i.e. India, and imply that similar organizational and cultural barriers are widespread throughout the region. Hence the current study suggested this hypothesis

H1: Green Human Resource Practices is positively associated with Green Innovation Performance

Green Organizational Culture as Mediator

The Green Organizational Culture (GOC) is a construct at its inception; its specific definition is yet to be improved (Al-Swidi et al., 2021).It is accepted that the corporation aiming to solve environmental issues in a holistic way has to pursue a significant cultural change (Stead & Stead, 2015). GOC finds its theoretical basis on the known concept of organizational culture that involves a set of shared assumptions, symbols, rituals, and social pattern to regulate the behavior of the members in an organization (Ravasi & Schultz, 2006).

In practice, GOC consists of values, beliefs, norms, symbols and even socially created stereotypes, which drive an organization towards greener practices (Afum et al., 2020; García-Machado & Martínez-Ávila, 2019) That is, it becomes an invisible force that drives how employees expect themselves to act in relation to the environment on their daily basis (Chang & Lin, 2015; Norton et al., 2015)

GOC evaluates how the underlying assumptions, values, symbols and artefacts within an organization are an actual commitment or a binding obligation to engage in sustainable operations as proposed by Harris & Crane (2002).Hence the following hypothesis is suggested

H2: Green Organizational Culture mediates the relationship between Green human resource Practices and Green Innovation Performance.

Theoretical Underpinning

The resource based view (RBV) serves as an effective theoretical framework for understanding the attainment of competitive advantage inside organizations and the continued existence of that advantage over time (Nelson, 1991; Penrose, 2009). This perspective has emerged as a fundamental theoretical framework with extensive acceptance in strategic management (Kraaijenbrink et al., 2010; Newbert, 2007)

Historically, market oriented methodologies have focused on the discrete impact of external variables, opportunities, and threats, as well as internal resources, strengths, and weaknesses, on corporate strategy and performance (Hofer & Schendel, 1978; Stinchcombe, 1965), as well as the integration of these . The Resource Based View (RBV) offers a new point of view. Elements to clarify how companies can thrive and attain a competitive advantage. RBV embraces an alternative viewpoint. It argues that firms can attain specific competitive advantages and performance levels based on their available resources and capabilities, as well as their utilization of these assets (Peteraf, 1993). This strategy emphasizes an internal perspective on the organization. The subsequent figure presented in Jay Barney's key 1991 article illustrates the fundamental framework of conventional market-based techniques and the resource-based perspective.

Figure 1
Resource Based View and Environmental Competitive Advantage Model
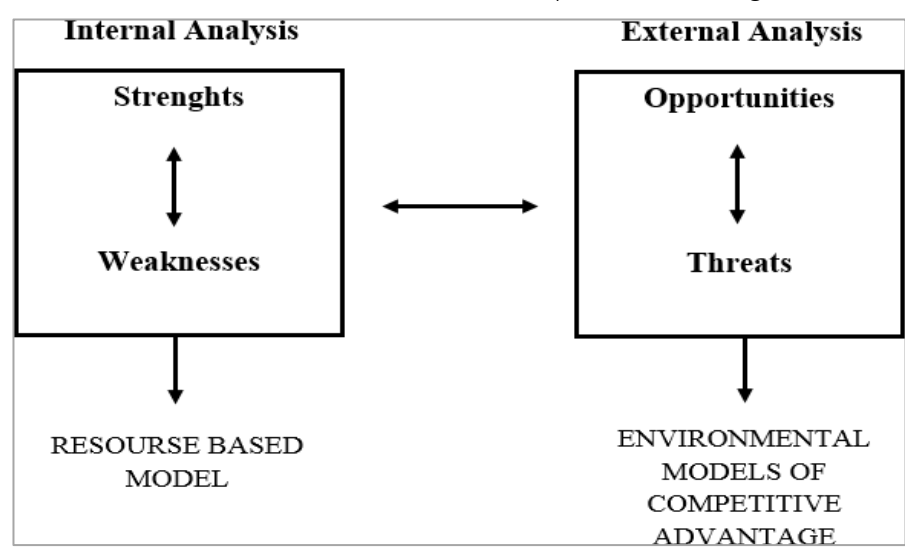
Source: (J. Barney, 1991)

Resource Based View (Definition)

RBV Theory has become popular in management research in recent years (Zupic & Drnovsek, 2014), it has origins that date back several decades. During the 1950s, literature started to provide concepts consistent

with this theory; Selznick (1997) proposed the idea of "distinctive competence" and sought to attain efficiency with the constrained resources available to management teams.

Penrose (2009) defines a corporation as "an assembly of productive resources, contending that corporate growth, whether internal or external, through tactics like mergers, acquisitions, and diversification, depends on the effective deployment of these resources". The author distinguished between tangible and intangible resources. This scientific dialogue is frequently neglected, with the exception of Rubin's (1973) study and his perspective of the firm as a collection of resources. In the 1980s, Professor Wernerfelt proposed notions such as resource allocation heterogeneity in his 1984 research titled "The Resource-Based View of the Firm."

The Resource Based View (RBV) is deeply rooted in a series of assumptions about corporate competitiveness. First, it recognizes that firms are heterogeneous because they possess different intangible assets, including specialized skills, proprietary knowledge, and brand equity, and thus endow them with a distinctive competitive edge at a given moment in time. Second, it shifts analytical focus off product market imperfection to the endogenous supply of these internal resources, thus explaining the way deficiencies and scarcity breed economic rents. Overall, RBV asserts that the unique combination of resources in a firm is the key determinant of competitive advantage in the long run. Consequently, the heterogeneity arising from a distinct range of resources within each organization, coupled with the capacity to sustain such resources, may create a durable competitive advantage over time (Amit & Schoemaker, 1993; Foss, 1997; Rumelt, 1984). The Company's performance is influenced by the heterogeneity of its resources and capabilities (Lockett et al., 2009; Makadok, 2001)

The resources that are valuable, scarce and difficult to imitate; those that offer a sustainable competitive edge are what are important in the long run; not simply relative position in the market when compared with that of competitor (Barney, 1991; Barney et al., 2011; Porter, 2008). Barney (1991) defines each feature of resources necessary for achieving a sustained competitive advantage over time as follows: " It is crucial to recognize the importance of pursuing possibilities while mitigating potential hazards within the company's environment. Secondly, resources must be constrained or distinct from those of competitors. Third, unmatched by competitors, and Fourth, non-substitutable, indicates that they cannot be substituted by equivalent resources". Organizations prioritize identifying the formula that provides a competitive edge to improve performance and secure economic rents from the outset (Newbert, 2007).

Similarly, scarce and valuable resources create a competitive advantage in global markets (Navarro-García et al., 2017; Pla-Barber, 2001; Rodríguez & Rodríguez, 2005). This strategic theory illustrates a progression from an initial emphasis on the traits that impart value upon resources (Barney, 1986; Dierickx & Cool, 1989; Peteraf, 1993) to a contemporary emphasis on the processes through which resources are acquired or developed (Amit & Schoemaker, 1993; Teece et al., 1997).

The main framework of this study and its supporting hypotheses are developed using the Resource View Theory (RBV Theory). The resource based view (Barney, 1991) will be used to show how green human resource management practices help , find, train, and keep green employees, which leads to better environmental performance (Albort-Morant et al., 2016).

This paper expands the theoretical scope of the Resource Based View by explaining why Green Human Resource Management leads to the creation of internal capacity that initiates green process and product innovation, and hence leads to the long term improvement of the environmental performance in the manufacturing settings. Using the RBV as a conceptual framework of interpretation, prediction, and prescription of human resource practices, the study illustrates that sustainable competitive advantages can be transformed by an organization through the strategic formulation of GHRM policies into its internal assets.

Research Methods

Research Approach

This paper explores manufacturing industry in Pakistan using quantitative research design that will involve both the approaches for data collection i.e. online and offline approach. The quantitative method in most cases, results in more dependable and more precise answers than a great number of other methods (Lee & Yoon, 2018). To start with, online questionnaires are shared with the participants via their favorite online channels. Electronic surveys are fast, economical, and geographic limitations are eliminated, which eases the reach to a wide group of respondents (Mohammed & Al-Swidi, 2019). This is followed by face-to-face conversations, and questionnaires on papers are administered whenever the participants are free in different manufacturing companies. The dual approach ensured that the quality data is obtained through various sources.

Figure 1

Conceptual Framework

Survey and Questionnaire Design

The questionnaire is divided into two sections. The introductory part gathers the general demographic information of every respondent, such as gender, age, education level, income range and the present occupational status.

The second part will assess the most important variables of the research: Green Human Resource practices, Green Organizational Culture and Green Innovation Performance. All of these constructs are assessed with a five-point Likert scale (1 = Strongly Agree to 5 = Strongly Disagree). Likert scales have generally been considered to be a valid tool to gather delicate data in the form of attitude (Dutot et al., 2016).

In total, the instrument has 23 items that are spread over the three variables, thus, allowing the breadth and the depth of the views of the respondents on green management practices and the results to be captured.

Measurement Variables

The items for the measurement of Green HR practices adapted from (Guerci & Carollo, 2016) Likewise, the items for measuring Green Organizational Culture is adapted from (Banerjee, 2002). Finally, measurement items for green innovation performance is adapted from (Albort-Morant et al., 2018) .

Sampling and Data Collection

This paper has discussed manufacturing companies in Pakistan. All data would be confidential and would only be utilized during this research, which is a requirement of ethics. Out of the 450 questionnaires that had been sent, 440 of the questionnaires were returned to the investigator- an impressive 97.8 per cent response rate. There were 66 incomplete forms that have been discarded, and 384 complete questionnaires that were completely filled and retained. The demographic characteristics of the respondents is shown in the Table 2.

Table 1

Demographics

Demographics	Categories	Percentages %
Gender	Male	85%
	Female	15%
Age	20–30	8%
	31–40	25%
	41–50	29%
	Above 50	38%
Education	Intermediate	15%
	Graduate	37%
	Master	46%
	Higher	3%
Position	Top Level	23%
	Middle Level	38%
	Line Manager	15%
Income	Below 10K	11%
	10K–15K	13%
	15K–30K	22%
	30K–40K	26%
	Above 40K	28%

Data Analysis and Results

The main analytical tool that we have used is Partial Least Squares 4 - Structural Equation Modeling (PLS4-SEM) due to its flexibility and power that we required to address the research questions and the peculiarities of our data set. (Sarstedt et al., 2020) specify that the PLS-SEM is especially effective in the modeling of complex relationships between latent variables, in cases where sample sizes are small, or the theory is being developed.

We studied the effect of Green Human Resource Management (Green HRM) practices on Green Innovation Performance as the relationship between two latent constructs . The logical selection was PLS-SEM since it can support both formative and reflective measurement models at one single point of time, mediation, and moderation effects, and be robust regardless of the fact that the theoretical framework in which it operates has not yet settled (Hair, Risher, et al., 2019).

Since PLS -SEM is particularly effective in predictive modeling, it happened to be the most suitable approach to discover the drivers of Green Innovation Performance within our specific context. Using PLS-SEM, we have improved the accuracy and consistency of our results at the same time, adjusting the inherent complexity of the study and nuances of our data (Sarstedt et al., 2020).

Before starting the main analysis, we made a thorough set of diagnostic checks: outlier tests, common-method-bias tests, non-response-bias tests, multi collinearity tests, convergent and discriminate validity tests. When it was ensured that the dataset did not contain any anomalies and that the measurement model met all the validity requirements, we started the analysis of PLS-SEM path.

Non Response Bias

In the current research, the survey data were separated into two groups the first group of the respondents or the first series of the received questionnaires, and the second group the late respondents, or the questionnaires received during the final phases of the data collection period. Comparative analyses between these cohorts have been carried out by the researchers with emphasis having been laid on pivotal variables, such as demographic characteristics, as well as substantive survey responses. The comparison did not show

any statistically significant disparities in early and late respondents thus showing that non-response bias is unlikely to have been a factor in the results. Table 3 contains a brief description of the measurement procedures of each variable.

Table 2
Brief Variable Measurement Overview

S. No	Construct	Items	Sources
1	Green HR Practices	09	(Guerci & Carollo, 2016)
2	Green Organizational Culture	06	(Banerjee, 2002)
3	Green Innovation Performance	08	(Albort-Morant et al., 2018)

Data Analysis

We carried out the data analysis with the popular SmartPLS4 software (Hair, Ringle, et al., 2019) The software provides a cause set of metrics that can be used to evaluate the inner and outer models to ensure the reliability and validity of the measuring instruments (Dangelico et al., 2017). Especially, we measured the overall reliability of the model, discriminant validity, convergent validity, and construct reliability (Hair, Risher, et al., 2019).

Evaluation of Measurement Model
Construct Reliability and Convergent Validity

The reliability of a model is well evaluated by the analysis of its structure using the internal consistency. As (Kannan & Tan, 2005) argue that every question in the survey is considered to be of equal importance, all the questions will have the same level of weight when collecting the data. In order to determine the consistency of item measurement, Cronbach alpha was calculated. Despite having a stable item loading, the resulting alpha coefficients were somewhat inconsistent: thus, to have a more accurate evaluation, the composite reliability (CR) was estimated with the assistance of Smart PLS (Werts et al., 1974)

The obtained Cronbach alpha were 0.881, 0.868 and 0.844 that are not less than the traditional value of 0.70 (Kline, 2023).The corresponding values of CR were 0.883, 0.870, and 0.844, which were also much higher than the cut-off of 0.70 (Werts et al., 1974). In this direction, the reliability of all constructs on which the model reliability was based was satisfactory, and both alpha and CR values did not provide any alarming signs of problem errors.

The convergent validity which measures the degree to which a given item represents the underlying construct in comparison to the rest of the items was analyzed (Gefen et al., 2000). Convergence validity is measured by Average Extracted Mean Variance. As (Fornell & Larcker, 1981) assume, an acceptable amount of convergent validity is an AVE of 0.50 or more, which (Sarstedt et al., 2020) also confirm. Table 4 provides the estimate of Cronbach alpha, composite reliability, and AVE of every construct in the structural model to support the strength of the reliability and convergent validity of measures used.

Table 3
Construct Reliability and Validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
GHRMP	0.881	0.883	0.904	0.512
GIP	0.868	0.870	0.896	0.520
GOC	0.844	0.844	0.885	0.562

Discriminant Validity

Fornell & Larcker criterion is a sound methodology tool of assessing the discriminant validity in a structural modeling framework (Fornell & Larcker, 1981). This method evaluates the uniqueness of a construct as compared to similar observable variables by comparing each off-diagonal entry to the corresponding diagonal one; off-diagonal entries are supposed to be lower. In the event that this condition is fulfilled in all constructs, then discriminant validity is considered to be established (Sarstedt et al., 2020).The results of the empirical findings of constructs included in the structural model are given in tables 5 and 6.

Table4
Fornell & Larcker criterion

	GHRMP	GIP	GOC
GHRMP	0.716		
GIP	0.594	0.721	
GOC	0.487	0.534	0.750

Table 5
HTMT

	Heterotrait-monotrait ratio (HTMT)
GIP <-> GHRMP	0.672
GOC <-> GHRMP	0.560
GOC <-> GIP	0.621

Inner Structural Model Evaluation
Collinearity Assessment
The values of variance inflation factor (VIF) shown in table 7 of the study are between 1.502 and 1.934, which is way below the standard of 3 and hence indicates that the measurement model does not show any collinearity, Table 8 shows the model fit indices.

Table 6
VIF

VIF GHRP	GHRP1	GHRP2	GHRP3	GHRP4	GHRP5	GHRP6	GHRP7	GHRP8	GHRP9
	1.52	1.502	1.869	1.934	1.715	1.569	1.796	1.617	1.642
GIP	GIP1	GIP2	GIP3	GIP4	GIP5	GIP6	GIP7	GIP8	
	1.518	1.873	1.782	1.507	1.715	1.515	1.729	1.662	
GOC	GOC1	GOC2	GOC3	GOC4	GOC5	GOC6			
	1.654	1.705	1.521	1.736	1.703	1.641			

Table 7
Model Fit Summary

	Saturated model	Estimated model
SRMR	0.049	0.049
d_ULS	0.676	0.676
d_G	0.151	0.151
Chi-square	322.809	322.809
NFI	0.912	0.912

Three salient PLS-SEM indices, including Standardized Root Mean Square Residual (SRMR), Normed Fit Index (NFI), and Root Mean Square Theta (RMS Theta) were studied as a part of the model-fit assessment. The standards of the proposed benchmarks put forward by Bentler & Bonett (1980) and (Rönkkö & Evermann,

2013) are that NFI must be between 0 and 1, RMS 0 should be less than 0.12, and SRMR must be in a range (0, 1) with the best being below 0.80. In the current analysis, SRMR was equal to 0.049 and NFI was equivalent to 0.912 and were all within the comfortable ranges. Therefore, the model shows sufficient data fit, and there is no reason to assume that multi collinearity is possible.

Test of the Explanatory Capacity and Predictive Significance of the Model.

Table 9 shows the value of R square and adjusted R square of the mediating and reliable variables. The R square is between 0 and 1, and the conventional cut-off is as follows: 0, below is a weak fit, 0.25, below is a moderate fit and 0.50, below is a fit. On this basis, our model has a high predictive power.

Table 8

R-square

	R-square	R-square adjusted
GIP	0.431	0.428
GOC	0.237	0.235

The significance of path coefficients (β)

In order to test the structural model, we used the boot loader's related interval value, 'beta (β)', 't value', 'p value', and corresponding p value. The main statistics are shown in Table 10.

Table 9

Path Results

	Original sample (O)	T statistics	P values
GHRMP -> GIP	0.437	10.114	0.000
GHRMP -> GOC	0.487	12.299	0.000
GOC -> GIP	0.321	7.387	0.000

Figure 2

Results of Bootstrapping
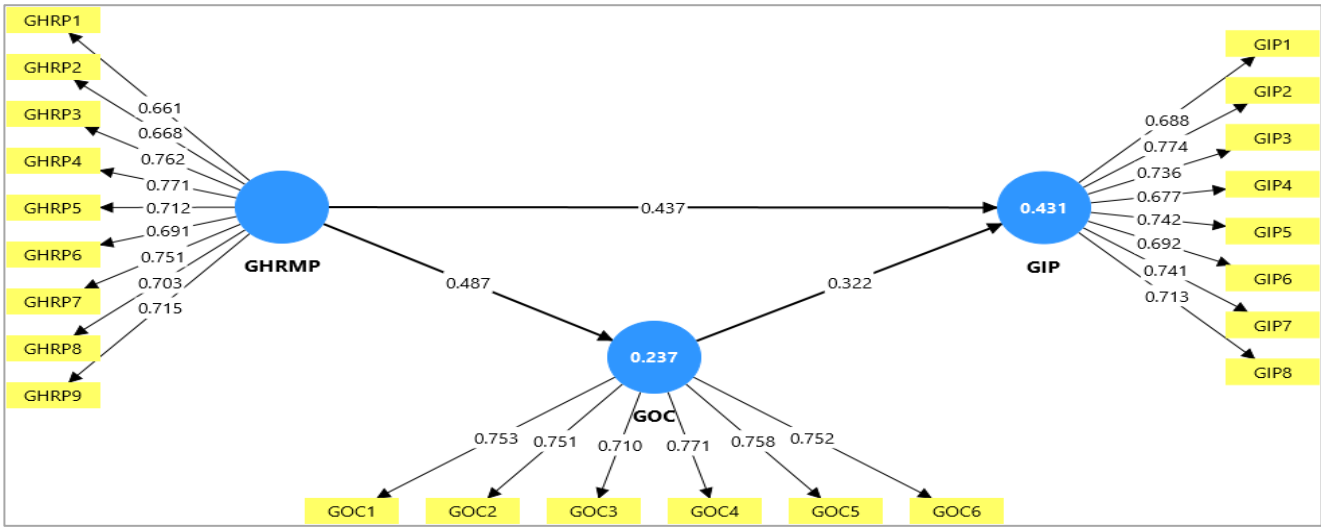

Figure 2 and Table 10 already give unquestionable evidence that all hypotheses formulated in the study were statistically significant (p<0.05). GHRP significantly impact GOC (β=0.487, T statistics=12.2, P=0.00). GOC has a significant positive impact on GIP (β=0.321, T statistics=7.38, P=0.00) and GHRP has significant and positive impact on GIP (β=0.437, T statistics=10.1, P=0.00).

Discussion and Conclusion

The present study will focus on the degree to which the Green Human Resources (Green HR) practices will improve the green innovation performance, and whether the existence of a green organizational culture is going to mediate the relationship. The results of our empirical evidence provide a consistent and positive picture in the manufacturing industry of Pakistan, the green innovation performance of the firms, which adopt Green HRM, is characterized by a sharp upsurge. This research implies that corporate leaders are supposed to incorporate Green HR activities into their overall corporate strategy, since such an integration can help to increase the productivity of employees and achieve sustainable success.

The second part of the research highlights the central position of Green Culture. Not only does it make the ordinary running activities easy, but it also strengthens the connection between the Green HR practices and the green innovation results. That is, as an organization embraces the green mind approach in a real sense, the positive impact of the Green HR initiative on innovation is multiplied.

Overall, the study can add fresh knowledge to the scholarly body of work, especially to the realm of large organizations where the quality standards and standard models of green innovation often overrule (Aboelmaged & Hashem, 2019). Explaining the motivation of green innovation performance in developing economies, the study shows that Green HR practices are not only important in the overall performance of a firm, but also its path to sustainability.

Green HR programs ought to be integrated in the central policies of the corporations. This integration does not only enhance productivity but also makes firms be at the forefront of green innovation.

Finally, the results emphasize the mediation of the Green Culture, which gives an in-depth understanding of how the human resource practices are transformed into green innovation performance. The results of the research have an impact on the daily practice and theoretical considerations explained as follows.

Theoretical Implications

The current research paper is of importance to the existing literature. On the basis of the Resource-Based View (RBV), by Barney (2001), the authors expand the model to present a holistic picture of sustainability issues that the manufacturing industry is faced with. Instead of just listing discrete propositions, the study explains how these constructs relate to one another, thus demonstrating a whole network of synergy. Then, this analysis questions the intricate dynamics that underlie green innovation: how it originated, is driven, and what results, and incorporates the understanding of the Resource-Based View (RBV) to explain the relevance of and the processes involved in the interrelations Sodhi's (2015). In addition, the paper also questions how these antecedents mediate the process of institutionalizing and practicing Green Human Resource Management (Green HRM) in such a way that it eventually influences the green innovation outcomes.

The current research has added a new dimension to the existing literature by explaining the development of Green Human Resource Management (HRM) capabilities and how they affect the underlying structural dynamics that define green innovation in the manufacturing industry. By mapping systematically, the connection between Green HRM and green innovation, the results provide practical information to companies struggling to maintain competitiveness in environments where sustainability and innovation have become less of a luxury and more of a mandatory factor. Overall, the study incorporates several theoretical frameworks thus outlining a clear and detailed description of the complex interrelationships and underlying mechanisms that drive sustainable innovation. It provides practitioners and scholars with practical advice on how to go about the modern business dilemmas that touch on sustainability.

Practical Implications

The implications of these findings have real-life implications. They show that companies that focus on enhancing their green strategy, increasing research and development, and expanding human resource competencies have the highest chances of success in green innovation. Green innovation no longer becomes an abstract goal but a reality when an organization incorporates the green dynamic capabilities in its day-to-day activities, systems, and processes. This, therefore, makes the firm to remain competitive. After all, it is the same goal of all business: to outperform themselves in their respective economic and financial performance. Studies show that a well-managed HRM has the ability to increase profitability and market position especially in the case of green innovation. In modern, fast-changing markets, the most effective approach to sustainable competitive advantage is focus on sustainable products and services that are environmentally friendly. It is only the organizations that truly incorporate a green culture, develop green competency oriented managerial skills, and instill innovation, both in product and process aspects, so as to succeed in the environment preservation efforts.

Limitations and Future Directions

Although our study provides interesting opportunities in terms of both theory and practice, it has its own restrictions. To expand the results of our study, we propose that the next generation of studies should directly compare manufacturing companies that use our framework and, thus, stimulate the discovery of how green organizational culture, green innovation, and green human resource practices can lead to better performance outcomes in diverse settings. Furthermore, it can be suggested that environmental dynamism as a moderator and mix method research can be used in future, finally resulting in more practical and solid insights to both scholars and practitioners. We decided to focus our investigation on the manufacturing sector of Pakistan as compared to pursuing a more global comparative approach of the emerging economies. The results obtained are naturally rooted in the Pakistani context. Researchers in the future should consider our approach in other developing and emerging markets, including the firms representing different global settings. Despite its limitations, the current study provides substantive implications to both theoretical and practical implementations with respect to encouraging green innovation among the manufacturing firms trading in emerging markets in developing economies.

References

Ababneh, O. M. A. (2021). How do green HRM practices affect employees' green behaviors? The role of employee engagement and personality attributes. *Journal of Environmental Planning and Management, 64*(7), 1204-1226.. https://doi.org/10.1080/09640568.2020.1814708

Abbas, J. (2020). Impact of total quality management on corporate green performance through the mediating role of corporate social responsibility. *Journal of Cleaner Production, 242*, 118458. https://doi.org/10.1016/j.jclepro.2019.118458

Abbass, K., Song, H., Khan, F., Begum, H., & Asif, M. (2022). Fresh insight through the VAR approach to investigate the effects of fiscal policy on environmental pollution in Pakistan. *Environmental Science and Pollution Research, 29*(16), 23001–23014. https://doi.org/10.1007/s11356-021-17438-x

Aboelmaged, M., & Hashem, G. (2019). Absorptive capacity and green innovation adoption in SMEs: The mediating effects of sustainable organisational capabilities. *Journal of Cleaner Production, 220,* 853–863. https://doi.org/10.1016/j.jclepro.2019.02.150

Afum, E., Agyabeng-Mensah, Y., & Owusu, J. A. (2020). Translating environmental management practices into improved environmental performance via green organizational culture: insight from Ghanaian manufacturing SMEs. *Journal of Supply Chain Management Systems, 9*(1), 31–49.

Albort-Morant, G., Henseler, J., Leal-Millán, A., & Cepeda-Carrión, G. (2017). Mapping the field: A bibliometric analysis of green innovation. *Sustainability, 9*(6), 1011. https://doi.org/10.3390/su9061011

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. 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

Al-Swidi, A. K., Gelaidan, H. M., & Saleh, R. M. (2021). The joint impact of green human resource management, leadership and organizational culture on employees' green behaviour and organisational environmental performance. *Journal of Cleaner Production, 316*, 128112. https://doi.org/10.1108/JKM-07-2017-0310

Amit, R., & Schoemaker, P. J. H. (1993). Strategic assets and organizational rent. *Strategic Management Journal, 14*(1), 33–46. https://doi.org/10.1002/smj.4250140105

Andjarwati, T., Budiarti, E., Audah, A. K., Khouri, S., & Rębilas, R. (2019). The impact of green human resource management to gain enterprise sustainability. *Polish Journal of Management Studies, 20*(2), 93–103. https://doi.org/10.17512/pjms.2019.20.2.08

Anwar, N., Mahmood, N. H. N., Yusliza, M. Y., Ramayah, T., Faezah, J. N., & Khalid, W. (2020). Green Human Resource Management for organisational citizenship behaviour towards the environment and environmental performance on a university campus. *Journal of Cleaner Production, 256*, 120401. https://doi.org/10.1016/j.jclepro.2020.120401

Ashok, M., Narula, R., & Martinez-Noya, A. (2014). End-user collaboration for process innovation in services: The role of internal resources. https://cris.maastrichtuniversity.nl/ws/portalfiles/portal/1250946/guid-bf058016-b552-40e4-b54d-f3974e51ef2e-ASSET1.0.pdf

Awan, F. H., Dunnan, L., Jamil, K., & Gul, R. F. (2023). Stimulating environmental performance via green human resource management, green transformational leadership, and green innovation: a mediation-moderation model. *Environmental Science and Pollution Research, 30*(2), 2958–2976. https://doi.org/10.1007/s11356-022-22424-y

Azhar, A., & Yang, K. (2022). Examining the influence of transformational leadership and green culture on pro-environmental behaviors: Empirical evidence from Florida city governments. *Review of Public Personnel Administration, 42*(4), 738–759. https://doi.org/10.1177/0734371X211027347

Banerjee, S. B. (2002). Corporate environmentalism: The construct and its measurement. *Journal of Business Research, 55*(3), 177–191. https://doi.org/10.1016/S0148-2963(00)00135-1

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17*(1), 99–120. https://doi.org/10.1016/S0742-3322(00)17018-4

Barney, J. B. (1986). Organizational culture: can it be a source of sustained competitive advantage? *Academy of Management Review, 11*(3), 656–665. https://doi.org/10.5465/amr.1986.4306261

Barney, J. B. (2001). Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. *Journal of Management, 27*(6), 643–650. https://doi.org/10.1177/014920630102700602

Barney, J. B., Ketchen Jr, D. J., & Wright, M. (2011). The future of resource-based theory: revitalization or decline? *Journal of Management, 37*(5), 1299–1315. https://doi.org/10.1177/0149206310391805

Beise, M., & Rennings, K. (2005). Lead markets and regulation: a framework for analyzing the international diffusion of environmental innovations. *Ecological Economics, 52*(1), 5–17. https://doi.org/10.1016/j.ecolecon.2004.06.007

Benevene, P., & Buonomo, I. (2020). Green human resource management: An evidence-based systematic literature review. *Sustainability, 12*(15), 5974. https://doi.org/10.3390/su12155974

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin, 88*(3), 588. https://psycnet.apa.org/doi/10.1037/0033-2909.88.3.588

Bhutto, S. A., & Auranzeb, Z. (2016). Effects of green human resources management on firm performance: An empirical study on Pakistani Firms. *European Journal of Business and Management, 8*(16), 119–125.

Cainelli, G., De Marchi, V., & Grandinetti, R. (2015). Does the development of environmental innovation require different resources? Evidence from Spanish manufacturing firms. *Journal of Cleaner Production, 94*, 211–220. https://doi.org/10.1016/j.jclepro.2015.02.008

Carrillo-Hermosilla, J., Del Río, P., & Könnölä, T. (2010). Diversity of eco-innovations: Reflections from selected case studies. *Journal of Cleaner Production, 18*(10–11), 1073–1083. https://doi.org/10.1016/j.jclepro.2010.02.014

Chang, C. L., & Lin, T.-C. (2015). The role of organizational culture in the knowledge management process. *Journal of Knowledge Management, 19*(3), 433–455. https://doi.org/10.1108/JKM-08-2014-0353

Chang, C.-H. (2011). The influence of corporate environmental ethics on competitive advantage: The mediation role of green innovation. *Journal of Business Ethics, 104*(3), 361–370. https://doi.org/10.1007/s10551-011-0914-x

Chen, Y., & Chang, C. (2013). Towards green trust: The influences of green perceived quality, green perceived risk, and green satisfaction. *Management Decision, 51*(1), 63–82. https://doi.org/10.1108/00251741311291319

Chen, Y., Chang, C., & Wu, F. (2012). Origins of green innovations: the differences between proactive and reactive green innovations. *Management Decision, 50*(3), 368–398. https://doi.org/10.1108/00251741211216197

Chen, Y., Lin, S., Lin, C., Hung, S., Chang, C., & Huang, C. (2020). Improving green product development performance from green vision and organizational culture perspectives. *Corporate Social Responsibility and Environmental Management, 27*(1), 222–231. https://doi.org/10.1002/csr.1794

Chen, Y.-S., Chang, C.-H., & Lin, Y.-H. (2014). The determinants of green radical and incremental innovation performance: Green shared vision, green absorptive capacity, and green organizational ambidexterity. *Sustainability, 6*(11), 7787–7806. https://doi.org/10.3390/su6117787

Dangelico, R. M., Pujari, D., & Pontrandolfo, P. (2017). Green product innovation in manufacturing firms: A sustainability-oriented dynamic capability perspective. *Business Strategy and the Environment, 26*(4), 490–506. https://doi.org/10.1002/bse.1932

De Giovanni, P., & Cariola, A. (2021). Process innovation through industry 4.0 technologies, lean practices and green supply chains. *Research in Transportation Economics, 90,* 100869. https://doi.org/10.1016/j.retrec.2020.100869

De Marchi, V. (2012). Environmental innovation and R&D cooperation: Empirical evidence from Spanish manufacturing firms. *Research Policy, 41*(3), 614–623. https://doi.org/10.1016/j.respol.2011.10.002

De Marchi, V., & Grandinetti, R. (2013). Knowledge strategies for environmental innovations: the case of Italian manufacturing firms. *Journal of Knowledge Management, 17*(4), 569–582. https://doi.org/10.1108/JKM-03-2013-0121

Dierickx, I., & Cool, K. (1989). Asset stock accumulation and sustainability of competitive advantage. *Management Science, 35*(12), 1504–1511. https://doi.org/10.1287/mnsc.35.12.1504

Dutot, V., Lacalle Galvez, E., & Versailles, D. W. (2016). CSR communications strategies through social media and influence on e-reputation: An exploratory study. *Management Decision, 54(*2), 363–389. https://doi.org/10.1108/MD-01-2015-0015

Farooq, K., Yusliza, M. Y., Wahyuningtyas, R., Haque, A. ul, Muhammad, Z., & Saputra, J. (2021). Exploring challenges and solutions in performing employee ecological behaviour for a sustainable workplace. *Sustainability, 13*(17), 9665. https://doi.org/10.3390/su13179665

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39–50.

Foss, N. J. (1997). *Resources, firms, and strategies: a reader in the resource-based perspective*. Oxford University Press.

García-Machado, J. J., & Martínez-Ávila, M. (2019). Environmental performance and green culture: The mediating effect of green innovation. An application to the automotive industry. *Sustainability, 11*(18), 4874. https://doi.org/10.3390/su11184874

Gefen, D., Straub, D., & Boudreau, M.-C. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the Association for Information Systems,* 4(1), 7. https://doi.org/10.17705/1CAIS.00407

Guerci, M., & Carollo, L. (2016). A paradox view on green human resource management: Insights from the Italian context. *International Journal of Human Resource Management, 27*(2), 212–238. https://doi.org/10.1080/09585192.2015.1033641

Hair, J. F., Ringle, C. M., Gudergan, S. P., Fischer, A., Nitzl, C., & Menictas, C. (2019). Partial least squares structural equation modeling-based discrete choice modeling: an illustration in modeling retailer choice. *Business Research, 12*(1), 115–142. https://doi.org/10.1007/s40685-018-0072-4

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review, 31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Hameed, Z., Khan, I. U., Islam, T., Sheikh, Z., & Naeem, R. M. (2020). Do green HRM practices influence employees' environmental performance? *International Journal of Manpower, 41*(7), 1061–1079. https://doi.org/10.1108/IJM-08-2019-0407

Harris, L. C., & Crane, A. (2002). The greening of organizational culture:Management views on the depth, degree and diffusion of change. *Journal of Organizational Change Management, 15*(3), 214–234. https://doi.org/10.1108/09534810210429273/FULL/PDF

Harris, S., Martin, M., & Diener, D. (2021). Circularity for circularity's sake? Scoping review of assessment methods for environmental performance in the circular economy. *Sustainable Production and Consumption, 26*, 172–186. https://doi.org/10.1016/j.spc.2020.09.018

Hofer, C. W., & Schendel, D. (1978). Strategy formulation: Analytical concepts. (No Title).

Kannan, V. R., & Tan, K. C. (2005). Just in time, total quality management, and supply chain management: understanding their linkages and impact on business performance. *Omega, 33*(2), 153–162. https://doi.org/10.1016/j.omega.2004.03.012

Klassen, R. D., & Whybark, D. C. (1999). Environmental management in operations: the selection of environmental technologies. *Decision Sciences, 30*(3), 601–631. https://doi.org/10.1111/j.1540-5915.1999.tb00900.x

Kline, R. B. (2023). *Principles and practice of structural equation modeling*. Guilford publications.

Kraaijenbrink, J., Spender, J.-C., & Groen, A. J. (2010). The resource-based view: A review and assessment of its critiques. *Journal of Management, 36*(1), 349–372. https://doi.org/10.1177/0149206309350775

Lartey, T. A., Amankwah-Amoah, J., Danso, A., Adomako, S., Khan, Z., & Tarba, S. Y. (2021). Environmental sustainability practices and offshoring activities of multinational corporations across emerging and developed markets. *International Business Review, 30*(5), 101789. https://doi.org/10.1016/j.ibusrev.2020.101789

Lee, E.-M., & Yoon, S.-J. (2018). The effect of customer citizenship in corporate social responsibility (CSR) activities on purchase intention: The important role of the CSR image. *Social Responsibility Journal, 14*(4), 753–763. https://doi.org/10.1108/SRJ-04-2017-0074

Lockett, A., Thompson, S., & Morgenstern, U. (2009). The development of the resource-based view of the firm: A critical appraisal. *International Journal of Management Reviews, 11*(1), 9–28. https://doi.org/10.1111/j.1468-2370.2008.00252.x

Makadok, R. (2001). Toward a synthesis of the resource-based and dynamic-capability views of rent creation. *Strategic Management Journal, 22*(5), 387–401. https://doi.org/10.1002/smj.158

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

Mathiyazhagan, K., Agarwal, V., Appolloni, A., Saikouk, T., & Gnanavelbabu, A. (2021). Integrating lean and agile practices for achieving global sustainability goals in Indian manufacturing industries. *Technological Forecasting and Social Change, 171,* 120982. https://doi.org/10.1016/j.techfore.2021.120982

Mohammed, A., & Al-Swidi, A. (2019). The influence of CSR on perceived value, social media and loyalty in the hotel industry. *Spanish Journal of Marketing-ESIC, 23*(3), 373–396. https://doi.org/10.1108/SJME-06-2019-0029

Molina-Azorín, J. F., Claver-Cortés, E., Pereira-Moliner, J., & Tarí, J. J. (2009). Environmental practices and firm performance: an empirical analysis in the Spanish hotel industry. *Journal of Cleaner Production, 17*(5), 516–524. https://doi.org/10.1016/j.jclepro.2008.09.001

Muisyo, P. K., & Qin, S. (2021). Enhancing the FIRM'S green performance through green HRM: The moderating role of green innovation culture. *Journal of Cleaner Production, 289,* 125720. https://doi.org/10.1016/j.jclepro.2020.125720

Navarro-García, A., Rey-Moreno, M., & Barrera-Barrera, R. (2017). *Commitment, resources, export enterprise and business results.*

Nelson, R. R. (1991). Why do firms differ, and how does it matter? *Strategic Management Journal, 12*(S2), 61–74. https://doi.org/10.1002/smj.4250121006

Newbert, S. L. (2007). Empirical research on the resource-based view of the firm: an assessment and suggestions for future research. *Strategic Management Journal, 28*(2), 121–146. https://doi.org/10.1002/smj.573

Norton, T. A., Zacher, H., & Ashkanasy, N. M. (2015). Pro-environmental organizational culture and climate. The Psychology of Green Organizations, 322–348. https://doi.org/10.1093/acprof:oso/9780199997480.003.0014

Penrose, E. T. (2009). *The Theory of the Growth of the Firm*. Oxford university press.

Peteraf, M. A. (1993). The cornerstones of competitive advantage: a resource-based view. *Strategic Management Journal, 14*(3), 179–191. https://doi.org/10.1002/smj.4250140303

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. *Tourism Management, 72*, 386–399. https://doi.org/10.1016/j.tourman.2018.12.008

Pla-Barber, J. (2001). The internalisation of foreign distribution and production activities: New empirical evidence from Spain. *International Business Review, 10*(4), 455–474. https://doi.org/10.1016/S0969-5931(01)00026-9

Porter, M. E. (2008). *Competitive advantage: Creating and sustaining superior performance*. simon and schuster.

Ravasi, D., & Schultz, M. (2006). Responding to organizational identity threats: Exploring the role of organizational culture. *Academy of Management Journal, 49*(3), 433–458. https://doi.org/10.5465/amj.2006.21794663

Rizwan, M., Yaseen, G., Nawaz, A., & Hussain, L. (2014). Incorporating attitude towards Islamic banking in an integrated service quality, satisfaction, trust and loyalty model. *International Journal of Accounting and Financial Reporting, 4*(2), 456–477.

Rodríguez, J. L., & Rodríguez, R. M. G. (2005). Technology and export behaviour: A resource-based view approach. *International Business Review, 14*(5), 539–557. https://doi.org/10.1016/j.ibusrev.2005.07.002

Rönkkö, M., & Evermann, J. (2013). A critical examination of common beliefs about partial least squares path modeling. *Organizational Research Methods, 16*(3), 425–448. https://doi.org/10.1177/1094428112474693

Roscoe, S., Subramanian, N., Jabbour, C. J. C., & Chong, T. (2019). Green human resource management and the enablers of green organisational culture: Enhancing a firm's environmental performance for sustainable development. *Business Strategy and the Environment, 28*(5), 737–749. https://doi.org/10.1002/bse.2277

Rubel, M. R. B., Kee, D. M. H., & Rimi, N. N. (2021). The influence of green HRM practices on green service behaviors: the mediating effect of green knowledge sharing. Employee Relations: *The International Journal, 43*(5), 996–1015. https://doi.org/10.1108/ER-04-2020-0163

Rubin, P. H. (1973). The expansion of firms. *Journal of Political Economy, 81*(4), 936–949. https://www.journals.uchicago.edu/doi/abs/10.1086/260089

Rumelt, R. P. (1984). Towards a strategic theory of the firm. *Competitive Strategic Management, 26*(3), 556–570.

Sarstedt, M., Ringle, C. M., Cheah, J.-H., Ting, H., Moisescu, O. I., & Radomir, L. (2020). Structural model robustness checks in PLS-SEM. *Tourism Economics, 26*(4), 531–554. https://doi.org/10.1177/1354816618823921

Selznick, P. (1997). *Leadership in administration: a sociological interpretation. University of California* Press Berkeley and Los Angeles.

Seroka-Stolka, O., & Fijorek, K. (2020). Enhancing corporate sustainable development: Proactive environmental strategy, stakeholder pressure and the moderating effect of firm size. *Business Strategy and the Environment, 29*(6), 2338–2354. https://doi.org/10.1002/bse.2506

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. *Technological Forecasting and Social Change, 150, 119762*. https://doi.org/10.1016/j.techfore.2019.119762

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*(May 2019), 119762. https://doi.org/10.1016/j.techfore.2019.119762

Sodhi, M. S. (2015). Conceptualizing social responsibility in operations via stakeholder resource-based view. *Production and Operations Management, 24*(9), 1375–1389. https://doi.org/10.1111/poms.12393

Song, W., Wang, G., & Ma, X. (2020). Environmental innovation practices and green product innovation performance: A perspective from organizational climate. *Sustainable Development, 28*(1), 224–234. https://doi.org/10.1002/sd.1990

Stead, J. G., & Stead, W. E. (2015). *Management for a small planet*. Routledge.

Stinchcombe, A. L. (1965). Organizations and social structure. *Handbook of Organizations, 44*, 142.

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal, 18*(7), 509–533. https://doi.org/10.1002/(SICI)1097-0266(199708)18:7%3C509::AID-SMJ882%3E3.0.CO;2-Z

Trujillo-Gallego, M., Sarache, W., & Sellitto, M. A. (2021). Identification of practices that facilitate manufacturing companies' environmental collaboration and their influence on sustainable production. *Sustainable Production and Consumption, 27,* 1372–1391. https://doi.org/10.1016/j.spc.2021.03.009

Werts, C. E., Linn, R. L., & Jöreskog, K. G. (1974). Intraclass reliability estimates: Testing structural assumptions. *Educational and Psychological Measurement, 34*(1), 25–33. https://doi.org/10.1177/001316447403400104

Wu, H., Li, Y., Hao, Y., Ren, S., & Zhang, P. (2020). Environmental decentralization, local government competition, and regional green development: Evidence from China. *Science of the Total Environment, 708*, 135085. https://doi.org/10.1016/j.scitotenv.2019.135085

Zupic, I., & Drnovsek, M. (2014). Firm growth: Research front and intellectual structure. *Academy of Management Proceedings, 1*, 12367.