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GREEN HUMAN RESOURCE MANAGEMENT PRACTICES AND ORGANIZATIONAL SUSTAINABILITY: A PATHWAY TO ENVIRONMENTAL AND FINANCIAL PERFORMANCE

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Abstract

Sustainability is a global concern, and it forces organizations to align business strategies with environment and financial goals. Green Human Resource Management (GHRM) has emerged as an essential approach that does not ignore the impact of practices on the environment in HR activities such as recruitment, training, appraisal and remuneration. Despite its growing relevance, empirical studies about the twofold impact of GHRM on both environmental and financial performance have not been done, particularly in emerging economies. This gap is addressed in this study by examining how the practices of GHRM influence the sustainability of organizations in a Pakistani context where environmental performance is theorized to mediate the relationship. The quantitative, cross-sectional design was used in this study to sample 300 employees and HR managers (in manufacturing and service companies in Lahore, Karachi and Islamabad). The data collected was analyzed using SPSS and SEM and structured questionnaire was used. The results affirm the argument that GHRM practices significantly affect the performance of the business regarding environmental and financial performance. Further, the relationship between GHRM and financial performance is mediated by environmental performance and significance of sustainable practices in improving profitability. The findings contribute to the body of knowledge by including the Resource-Based View, Stakeholder Theory and Triple Bottom Line therapies and by stating practical implications to organizations on how competitive advantage is achieved through the application of sustainability-based HR practices.

INTRODUCTION

One of the most outstanding organization issues in the modern world is sustainability. Global warming, deforestation, growing carbon footprint, and natural resource scarcity has become a challenge and has compelled organizations to reevaluate the old business system and seek ways to implement sustainability related answers. The shift is also driven by global commitments to sustainable economic

development, responsible production and climate action (UN Sustainable Development Goals, SDGs), among others (Ali et al., 2024; Bhardwaj et al., 2025). A sustainability is no longer a choice due to ethicality or philanthropy as businesses are now occurring in a more challenging and unpredictable environment and has become an organizational strategy to ensure the survival and growth of the organization.

The balance between the three elements of the triple bottom line (TBL) of social responsibility, environmental stewardship and financial achievement, is organizational sustainability. One can observe that according to the idea of TBL model, business concept is no longer the profit maximization and the ecological and social problems are also the further subdivision of the decision-making (Ghouri et al., 2020). Environmental sustainability is one of those dimensions that gained certain significance after the international demands of carbon footprint reduction, the use of renewable sources, and the efficient usage of natural resources. In the meantime, businesses are forced to make profits and stay afloat in the market. That is the type of co-responsibility of the environment and economic performance with which the contemporary business has attained (Yong et al., 2020).

Human capital is the most characteristic feature of sustainable outcome. There is a direct correlation between the level of success of their organizations in their sustainability efforts and the knowledge, attitudes, and behaviors of their employees(Akbar, Asghar, & Arshad, 2025). It has resulted in the newly introduced concept of Green Human Resource Management (GHRM) where the environmental goals are taken into account when providing the conventional HR services involving recruitment, selection, training, performance appraisal, compensation, and employee engagement (Hasan Raza et al., 2025; Pham et al., 2020). It is within this framework that organizations are able to build a green culture within their organizations, encourage workers to participate in green activities and also make sure that the sustainability concept is integrated into the various levels of the workforce.

The examples of the matter are the green recruitment (to recruit people, who will share the values, which are related to the environment) and the green training (to train the workers in such a way so that in the future, they will become resource-efficient, not only with regard to managing the waste-related aspects, but also with regard to saving the energy) (Muisyo et al., 2023). The other issue that green performance appraisal has tackled is the need to make sure that employees are appraised based on their contribution toward green compensation system and green behavior reward system (Al-Alawneh et al., 2024). Similarly, employees are invited to engage in green projects and innovations through employee engagement programs. Collectively, these practices relate to the creation of an inspired workforce, which is motivated to realize organizational and sustainability imperatives (Zaid et al., 2018).

GHRM can also influence financial performance as well as environmental performance. Minimizing wastes will save Green HR money through saving energy and proper utilization of resources. Also, they establish a reputation within organizations, locate green customers, win the trust of investors, and are profitable in the long-term (Sachdeva et al., 2024). How much GHRM can be directly converted into financial returns is an empirical question which is yet to be answered, most prominently in the emerging markets. Although the importance of GHRM is well recognized in the theoretical literature, there is little empirical literature connecting GHRM practices with environmental and financial performance(Yasser & Asghar, 2024). The effect of the environmental factor on the quantity of carbon emissions, the degree of waste processing, and the highest compliance with environmental regulation is considered in many works (Uddin and Islam, 2015; Abbas et al., 2022). Yet, the data on whether these gains result in any quantifiable financial performance improvement is disjointed and vague. Some researchers note that the benefits of GHRM are indirect and long-term, which are reflected in reputational capital and efficiency (Hossari and Elfahli, 2022), others refer to more direct operation economy savings and productivity (Akbar et al., 2024).

The other significant weakness of existing literature is the contextual bias. Much of the research has been done either in developed economies or in particular sectors of the economy like manufacturing and

higher education (Ghouri et al., 2020; Al-Alawneh et al., 2024). Research in developing economies, such as Pakistan, is few even though the industrial base of the country continues to rise, its energy needs continue to rise and the environmental issues are becoming crucial. Since manufacturing and services are the main sources of the economy in Pakistan, and the increasing demand to achieve eco-friendly organizational practices, there is a need to determine whether GHRM practices can improve both environmental performance and financial sustainability (Shahid, 2023). In addition, little is known about the mediating function of environmental performance in the relationship between GHRM practices and financial performance. It seems reasonable to assume that GHRM can be used to improve environmental performance that leads to profitability. This intervening relationship is in need of additional empirical research, particularly in relation to organizations that function within resource-limited economies such as Pakistan.

1.1 Objectives of the Study

The current study fills the following gaps in the research: To assess how GHRM practices can influence the environmental performance. To discover how GHRM practices contribute to financial performance. To determine whether environmental performance mediates that between the GHRM practice and financial performance. As these objectives are met, the study has a contribution on theory and practice. In theoretical terms, it builds up the literature by connecting GHRM practices with financial sustainability, which remains a relatively unexplored area empirically. In practice, the study provides lessons to managers and policymakers in Pakistan on how to develop both sustainability goal-oriented and financial competitiveness-oriented HRM strategies.

1.2 Significance of this study

The importance of this study is that it is both environmentally and financially oriented. Although other research has emphasized the positive impact of GHRM on the environment, the financial aspect has not been explored, especially in third world nations. This study helps fill this gap by providing empirical evidence on the case of Pakistan where organizations are confronted with the twin challenge of not only staying afloat but also meeting increasing environmental demands. Another contribution of this article to the stakeholder theory and the resource-based view is that human capital in its management through green HRM practices can be a viable organizational resource in achieving the sustainability goals (Ali et al., 2024; Yong et al., 2020).

1. Literature Review

Green Human Resource Management (GHRM) is often described as a strategic practice that incorporates environmental concerns into human resource practices. It covers acts like green recruitment, green training and development, green performance appraisal, green compensation and rewards and employee participation in sustainability activities. Besides making the employees aware of the environmental issues, the practices also cause changes in the behavior of the employees that are far more consistent with the sustainability objectives (Tang et al., 2018). In order to know how organizations can become viable in the long-term and how this may be achieved to achieve ecological and economic goals, organizational sustainability, evaluated by means of environmental and financial performance can be considered in more detail (Kramar, 2014). The Resource-Based View (RBV), Stakeholder Theory, and the Triple Bottom Line (TBL) perspective provide a solid theoretical basis to describe such relationships. According to the RBV, trained and motivated human capital can be a source of sustainable competitive advantage when it is directed to environmental responsibility (Barney, 1991). Another aspect brought out by the Stakeholder Theory is that businesses must meet the demands of different stakeholders with majority of them the ones in need of sustainable businesses (Freeman, 2010). Another argument of the TBL framework is that to be truly sustainable requires that people, planet, and profit should be included (Elkington & Rowlands, 1999). On these premises, the following two hypotheses are put forward and discussed.

H1: Green Human Resource Management practices have positive influences on the performance of the environment.

Green HRM practices are theorized as determinants in environmental performance in an organization. Green recruitment helps the companies to recruit people who share the environmental values and skills; on the other hand, green training helps the employees to develop their abilities to execute environmental-friendly practices in the workplace (Jabbour and Santos, 2008). Similarly, green performance appraisal systems and pay systems provide responsibility and other contribution to the green goals rewarding. By integrating environmental issues into their HR policies, organizations can develop a labor force that is not only conscious about environmental issues, but also competent to solve them by creative practices(Rafiq et al., 2024). On study, RBV assumes that the environmental competencies which have been co-created with the help of GHRM represent the sole intangible assets that enable the organizations to be more ecologically efficient and less hazardous to the environment (Cheng et al., 2020).

Empirical data confirm the idea that GHRM makes a direct positive impact on environmental performance. More specifically, Pham et al. (2020) have shown that waste management and energy efficiency could be increased in businesses through the use of green training and reward systems. Important, Cheng et al. (2020) also found that companies that integrated the GHRM strategy into their strategy had greater carbon emission and ecological footprint reduction. Surveys conducted in emerging economies also indicate that green recruitment and employee engagement are on the frontline of driving environmental performance, particularly in an industry that has significant impacts on the environment (Masri and Jaaron, 2017). Taken together, these results strengthen the claim that GHRM practices have a positive impact on environmental performance.

H2: Green Human Resource Management practices have a positive impact on financial performance.

The connection between GHRM activities and monetary performance is supported by the belief that ecologically motivated HR systems result in ecological as well as economic efficacy. The innovative capacity of employees improved by green recruitment and training leads to the saving of costs through optimization of resources and waste reduction (Renwick et al., 2013). Green performance appraisal and reward systems also check how the contribution of employees towards sustainability are aligned with organizational financial goals. Theoretically speaking, TBL points out that profit will eventually be supported by environmental and social improvements whereas the Stakeholder Theory states that the image of the company and its competitive advantage will be improved due to the responsiveness to the forces of sustainability instigated by the stakeholders (Freeman, 2010; Elkington & Rowlands, 1999).

The financial gains of implementation of GHRM are proved by empirical studies. According to Masri and Jaaron (2017), GHRM within the service sectors led to increased cost-efficiency and financial performance overall. Kim et al. (2019) defined that proactive approaches on the GHRM level were implemented by more profitable and customer-loyal firms. Similarly, Jermsittiparsert et al. (2019) confirmed that firms that included green HRs realized a good ROI by saving in their power expenditures and improving their relation with stakeholders. These results demonstrate that GHRM is both an ecological and a financial strategy and the hypothesis that GHRM has a positive influence on financial performance is correct.

H3: There is a positive relationship between environmental performance and financial performance.

Environmental performance and financial performance have a good relationship based on sustainability literature. Organizations that invest to eco-innovate, use energy efficiently and reduce wastes, not only help in protecting the environment but also enhance their competitiveness in the long-term. Ideally, TBL, where profitability depends on high environmental performance, thus reducing the cost and generating stakeholder goodwill, and RBV, where the valuable, rare and inimitable resources that generate sustainable financial benefits are the

capabilities of environmental management (Barney, 1991; Elkington & Rowlands, 1999).

Empirical research has repeatedly indicated that companies that have a better environmental performance report better financial result. To demonstrate this, Cheng et al. (2020) conceptualized that those firms that minimized carbon emission realized cost savings in the long run and a strong market presence. Similar results were obtained by Dimopoulos et al. (2021) who additionally noted that environmentally conscious consumers were drawn to eco-efficient organizations that evaded regulatory fines and contributed to the growth in profitability. The second fact, which Kramar (2014) has highlighted, is that sustainable practice builds confidence in investors because the financial markets are rewarding companies with superior environmental track records higher. The articles provide substantial arguments in support of the positive relationship between environmental performance and financial performance.

H4: There is a mediating environmental performance between Green Human Resource Management practices and financial performance.

Environmental performance is a product of GHRM as well as a fundamental mechanism that realizes financial rewards. These reasons are based on the fact that the GHRM practices helps to achieve the next higher level of environmental awareness and ability that, in its turn, converted into the necessary ecological performance which takes the form of the low level of energy consumption, the low level of emissions, and the optimal use of resources (Tang et al., 2018) (Asghar, & Nabeel, 2025). These environmental gains are then converted into financial benefits through low operating expenses, risk reduction and brand reputation. TBL fills this role of mediating environmental performance because profitability can be realized when both the social and the environmental are under management (Elkington & Rowlands, 1999).

This mediating mechanism is supported by a number of studies. Pham et al. (2020) demonstrated that the effect of GHRM on financial outcomes was more pronounced in the case when environmental performance was defined as an intermediate variable. Dimopoulos et al. (2021) also emphasized that companies applying green HR strategies were able to obtain environmental efficiencies initially, which were then translated into better financial outcomes. In a study on a similar topic, Masri and Jaaron (2017) found that involvement of employees in environmental activities not only reduced environmental degradation, but also generated colossal returns in cost savings. When combined, these two results show that environmental performance mediates between GHRM and financial performance.

2. Research Methodology

The proposed research design is quantitative survey study based on cross-sectional survey research method to investigate the effect of the Green Human resource management (GHRM) practices on the sustainability of the organization in terms of both environmental and financial performance. The scope of research is restricted to the large cities of Lahore, Karachi and Islamabad, Pakistan, due to their economic importance and the existence of various manufacturing and service sector organizations that are actively pursuing sustainability programs. The population includes the HR managers and employees of such organizations and a sample of 300 respondents is identified according to the rules of stratified random sampling developed by Krejcie and Morgan (1970). The information is gathered by using a structured questionnaire on a 5-point Likert-scale based on a modified version of validated questionnaires on GHRM, environmental performance and financial performance.

GHRM practices (green recruitment, training, appraisal, compensation, employee involvement) are taken as an independent variable, and the environmental and financial performance are the dependent variables. Environmental performance is also a mediator in between GHRM practices and financial performance. The analysis is conducted through the descriptive statistics, reliability testing (Cronbach alpha) and confirmatory factor analysis (CFA) to determine the validity. The methods of testing relationships between variables and identifying the direct and mediating effect are correlation, regression, and Structural Equation Modeling (SEM). This research methodology makes the results rigorous, statistically reliable, and

applicable in interpreting the role of GHRM in facilitating sustainability in the urban organizational setting of Pakistan.

3. Data Analysis and Results

4.1 Descriptive Statistics

Table 1

Descriptive Analysis of Study Variables (N = 300)

Variable	Mean	SD	Min	Max
Green HRM Practices	3.82	0.61	2.1	5.0
Environmental Performance	3.75	0.57	2.0	4.9
Financial Performance	3.68	0.62	2.2	5.0

Data obtained on 300 respondents are analyzed using SPSS (Version 26). Descriptive statistics give information on how study variables are distributed.

The mean score of all of the variables is greater than 3.5, so the general concept is that respondents have a moderately to a highly positive impression that their organizations are practicing GHRM and are delivering sustainability outcomes. The standard deviations are quite small and suggest that there has been homogeneity in the sample answers. The results of this study indicate that a majority of organizations within the research setting implement green programs and achieve the related sustainability performance.

4.2 Reliability and Validity

The internal consistency of constructs is assessed using Cronbach's alpha.

Table 2

Reliability Analysis

Construct	Items	Cronbach's Alpha
GHRM Practices	20	0.91
Environmental Performance	6	0.87
Financial Performance	6	0.85

Cronbach alpha values are all greater than the recommended alpha 0.70, which indicates that the measurement scales have high internal consistency. Multi-item scale reliability is strongest in GHRM practices (α = .91). These findings offer the assurance that the data collection instrument can be trusted to test study hypotheses.

4.3 Correlation Analysis

Pearson correlation coefficients are computed to examine associations among variables.

Table 3

Correlation Matrix

Variable	GHRM Practices	Environmental Perf	Financial Perf.
GHRM Practices	1		
Environmental Perf.	.56**	1	
Financial Perf.	.49**	.52**	1

Note. p < .01.

The relationship between GHRM practices and the environmental and financial performance is highly positive and significant, which means that the sustainability results can be obtained at a higher level when organizations apply green HR practices. Financial performance also has a significant relationship with environmental performance, which is why it is argued that environmentally responsible companies have an economic advantage. These correlations give prior testimony in support of the study hypotheses.

4.4 Regression Analysis

A series of linear regression analyses were conducted to test the direct effects of Green Human Resource Management (GHRM) practices on sustainability outcomes.

Model 1: GHRM → Environmental Performance

Table 4

Coefficients

Predictor	B	Std. Error	Beta (β)	t	Sig.
Constant	1.12	0.15	—	7.46	.000
GHRM	0.56	0.06	.56	9.82	.000

Model 2: GHRM → Financial Performance

Table 5

Coefficients

Predictor	B	Std. Error	Beta (β)	t	Sig.
Constant	1.38	0.19	—	7.26	.000
GHRM	0.41	0.06	.41	7.25	.000

Model 3: Environmental Performance → Financial Performance

Table 6

Coefficients

Predictor	B	Std. Error	Beta (β)	t	Sig.
Constant	1.45	0.21	—	6.90	.000
Environmental Perf.	0.38	0.06	.38	6.89	.000

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The relationship between Model 1 (GHRM - Environmental Performance) was positive (=.56, t = 9.82, p <.001). The R 2 value of 0.31 means that the GHRM practices explain the variance in environmental performance by 31 percent. This explains why about one-third of the ecological performance of an organization, including waste reduction, energy consumption, and sustainable workplace practices, can be directly linked to the adoption of green HRM strategies. In a practical sense, programs like eco-training, green hiring, and environmentally-conscious performance appraisal are important in helping to establish the role of organizations in achieving their ecological goals.

The other significant positive effect was also found in model 2 (GHRM → Financial Performance) with R2 of.17, (β =.41, t = 7.25, p <.001). The fact that the effect is less than that on the environmental performance notwithstanding, the findings indicate that GHRM practice explains 17% variance in financial performance. This shows that the HR initiatives that lead to sustainability are not only based on the ecological gains, but also on the financial gains which, in turn, include cost savings

due to decrease in resource usage, improved efficiency of operations, and an improvement in the image of the organization which can attract eco-conscious customers and investors. The findings

suggest that green HR policies are not merely but also appear to have a calculable financial outcome.

In Model 3 (Environmental Performance to Financial Performance) the economic value of environmental responsibility is further supported. Financial performance was greatly predicted by environmental performance (=.38, t = 6.89, p <.001), with an R 2 of.14. This implies that 14 percent of change in financial performance is attributable to enhancement of environmental practices. Organizations which proactively attempt to control their ecological footprint through various means (e.g. lowering emissions, saving energy, implementing sustainable processes) accrue financial benefits in the form of lower cost of operations, better adherence to environmental regulations, and increased stakeholder confidence.

4.5 Mediation Analysis

Hayes PROCESS macro (Model 4), that has bootstrapping, is used to test the mediation effect of the environmental performance.

Table 7
Mediation Analysis

Path	Effect	SE	95% CI (LL, UL)
GHRM → Environmental Performance	.56	.05	[.46, .66]
Environmental Performance → Financial	.38	.06	[.27, .49]
Indirect Effect (Mediation)	.21	.04	[.14, .29]

Based on the mediation analysis, environmental performance contributes significantly to the transmission of the impact of GHRM practices on their financial performance. The indirect effect is significant, as there is no zero value in the confidence interval. This substantiate the fact that, environmental performance is a mediator, which positively increases the association between GHRM and financial outcomes.

4. Discussion

Findings of the ongoing research support the claim that Green Human Resource Management (GHRM) practices can make a considerable contribution to the enhancement of environmental and financial outcomes that validate the hypothesized links. Specifically, the results imply that H1 and H2 are accepted since the practices of GHRM have a positive effect on environmental and financial performance respectively. These results are justified by the studies described above that the sustainability culture is inculcated into the organizational culture and staff behavior through the green-related policies of HR (Renwick et al., 2013; Cheng et al. (2020). Specifically, the cultivation of pro-environmental behavior, waste minimization, and promotion of energy efficiency indeed demand the use of green recruitment, training, and appraisal (Kim et al., 2019; Tang et al., 2018). This finding is in line with the findings of Dumont et al. (2017) who indicate that GHRM substantiates environmental responsibility at an individual or enterprise level. The information in the study also demonstrates that environmental performance positively relates to financial performance and therefore justifies H3. This confirms the thesis that sustainability-based HR practices do not only create ecological value, but also can lead to measurable economic value (Zaid et al., 2018; Guerci et al., 2016). The resulting environmental performance improvement through reduction of emissions and waste disposal and effective use of resources will result in firms saving money on the cost and a market image that translates directly into increased profitability (Jabbour and de Sousa Jabbour, 2016; Jackson et al., 2011). The acceptance of H4 and the focus on the mediating variable (environmental performance) is an indication that the financial gains could be achieved when the organizations first achieve the ecological gains. This is comparable to the Resource-Based View (RBV) and Triple Bottom Line (TBL) theories where it is said that environmental responsibility is a resource that could be exploited to derive sustained

competitive advantage (Barney, 1991; Elkington & Rowlands, 1999).

That all four hypotheses have been approved demonstrates the growing degree of consensus that sustainability and profitability are not rival but complementary goals. GHRM as a signifier and complement to environmental awareness as well as organization performance in Vietnam (Pham et al., 2020). As such, Shen et al. (2018) concluded that Chinese firms that had incorporated GHRM were more competitive where their HR practices aligned with their sustainability objectives. These results are also comparable to those of Haddock-Millar et al. (2016) who found that employee involvement in green initiatives leads not only to innovation but also to a rise in efficiency. The conclusion of all these studies is that GHRM may be applied to determine not only the environmental sustainability, but also the financial sustainability.

Based on the mediating role, this study finds that the mediating channel through which GHRM can enhance the financial performance is the environmental performance. The conclusion is appropriate since Paillé and Boiral (2013) assume that pro-environmental behavior of a worker is translated into efficiency and cost-management within the company. Similarly, Dumont et al. (2017) established that companies that use environmental training and appraisal are financially efficient based on the capability to maximize resources. Subsequent research of Ahmad (2015) reveals that the greater corporate reputation of the organization in which the green HR strategies are employed makes the company more profitable at a greater distance. In so doing, accepting H3 and H4 demonstrate that sustainability of the environment is not only morally good, but a long-term financial success strategy.

The findings broaden the stakeholder theory by focusing on how GHRM practices can meet the expectations of the internal (employees) and external stakeholders (customers, regulators and communities) (Guerci et al., 2016; Renwick et al., 2013). The research brings major management implications to organizations in the major urban centers in Pakistan as a manager. It shows how managers will likely view GHRM as a holistic sustainability strategy and not a compliance process. As with research findings of Jackson et al. (2011) and Jabbour (2011), GHRM practices may contribute to competitiveness, stakeholder trust and organizational stability in turbulent settings. These conclusions suggest that, when organizations start to regard sustainability as a profit-making enterprise, instead of a cost center, they may achieve the balance between the ecological and the economic objective.

5. Conclusion

This research study seeks to analyze the role of various practices of Green Human Resource Management (GHRM) such as green recruitment, training, performance appraisal, compensation, and employee participation in the sustainability of an organization in terms of environmental and financial performance. The results indicate that sustainability practices in GHRM establish a workforce that is environmentally conscious, aligns with the sustainability objectives, and contributes to the environment to a significant degree. The higher the level of sustainability in HR strategies, the more organizations tend to implement processes with low environmental impact, less wastage, resource conservation and less environmental footprint. Such environmental performance will then translate to financial performance through reduced operational expenses, increased efficiency, better reputation and the attractiveness of sustainability conscious consumers and investors. Interestingly, the results reveal that the correlation between GHRM and financial performance is mediated by environmental performance and also indicates that sustainability may be facilitative of profitability simultaneously.

The study has limitations in addition to its contributions. Its cross-sectional research limits causal conclusions, in that the data were gathered at one time. The study area was restricted to Lahore,

Karachi, and Islamabad and cannot be generalized to other parts of Pakistan or other countries, and self-reported data can be biased by social desirability. Future studies might implement longitudinal designs to capture changes over time, increase the scope to larger and more representative sample sizes in different regions or countries and include qualitative research such as interview and case study research. Such enhancements would offer greater understanding of the implementation and experience of GHRM practices at various levels in organizations and within various cultural environments.

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