

GREEN HUMAN RESOURCE MANAGEMENT (GHRM) PRACTICES AND THEIR ROLE IN INSTITUTIONAL PERFORMANCE: A COMPARATIVE STUDY OF PUBLIC AND PRIVATE HIGHER EDUCATION INSTITUTIONS IN KARACHI

Aamer M. Khan^{*1}, Khalid M. Iraqi²

^{*1}Ph.D Scholar Department of Public Administration, University of Kaarchi

²Department of Public Administration University of Karachi

Corresponding Author: *

Aamer M. Khan

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ABSTRACT

The research question will be on the impact of Green Human Resource Management (GHRM) on institutional performance of both public and privately owned Higher Education Institutions (HEIs) in Karachi, Pakistan. The study is grounded on the Resource-Based View (RBV), AbilityMotivationOpportunity (AMO) theory, and High-Performance Work Systems (HPWS) model and procedures to ascertain the catalysts of organization performance of green recruitment, green training, and green performance management through the assistance of organizational culture. A mixed-method design was used to conduct data collection on 220 HR and faculty professionals which were representatives of 10 HEIs. Reliability testing, Pearson correlation, multiple regression, mediation, moderation and Structural Equation Modeling (SEM) with SPSS (v29) and SmartPLS (v4), along with descriptive statistics, have been used to carry out the quantitative analysis. In addition to that, 15 in-depth interviews were also analyzed using NVivo 14 and produced qualitative data in the form of thematic analysis. The results indicated that GHRM is an important and positive predictor of institutional performance ($R^2 = 0.71$, $p < 0.001$), and organizational culture is a good partial predictor. It was found that the level of GHRM adoption was higher in the case of the private HEIs compared to the public ones by using the independent t-tests. The provided study complements the theoretical side of the GHRM concept inserting it into the institutional performance and may provide the practical implications of the sustainable HRM practices into the setting of the Pakistani higher education facility.

Keywords: Green HRM, Institutional Performance, Higher Education, Public vs Private, Sustainability

INTRODUCTION

1.1 Background

The speed with which the environment is being polluted and resources exhausted has propelled organizations in the world to relocate their operations to the sustainability ideals (Jackson et al., 2011). The intellectual centers of innovation and change the Higher Education Institutions (HEIs) have a moral and strategic responsibility to be sustainable in education, activities and culture (Gillani et al., 2024). One of the organizational functions is the Human

Resource Management (HRM), which is central to the sustainability, which is being institutionalized into the DNA of the organizations.

Green Human Resource Management (GHRM) emerged as a new paradigm, which implements green objectives in the HR practices such as recruitment, training, performance and engagement of the employees (Renwick et al., 2016). Under GHRM, organizations can generate a workforce not only

with working capabilities, but also that will result in environmental sustainability.

The case on the higher education of Pakistan is dichotomous: on the one hand, there are institutions of higher education of Pakistan in bureaucratic structures and with limited resources, and on the other hand, there are institutions in the competitive environment (Hamid et al., 2024). The two sectors are characterized by the issue of attempting to systematize HR practices guided by the concept of sustainability. Thus, the context of Pakistan, the economic and educational hub of Karachi, that the research takes into account gives a reflective image of the dynamics of the GHRM implementation in the context of institutional typology.

1.2 Problem Statement

Despite the fact that the GHRM topic has received significant studies in both Western and Eastern Asia worlds, limited research has been conducted on the application of this concept within the Pakistani higher education system (Bano et al., 2024). It lacks significant empirical evidence on how GHRM could influence institutional performance that is a complex construct that encompasses quality of teaching, innovation, resource efficiency and reputation (Khan et al., 2024). Most past sustainability awareness studies (e.g. Imtiaz and Iqbal, 2024) focused on sustainability awareness when contrasted with actual institutional performance.

The current paper, therefore, examines the challenge of the GHRM practices to the institutional performance and the mediating role of the organizational culture and the pattern of implementation that is adopted by the Karachi public and the private HEIs.

1.3 Research Objectives

1. To establish the relationship between GHRM practices and Karachi based HEIs institutional performance.
2. To conduct a test of the mediating variables of organizational culture/GHRM-performance relationship.
3. To compare the application of GHRM in the public and the private HEIs.

4. To provide recommendations on institutional and policy level improvement to sustainability.

1.4 Research Questions

1. How does GHRM practices influence the performance of institution?
2. Does GHRM have the middle ground between the organizational culture and institutional performance?
3. Do public and private HEIs have any significant differences in regard to their adoption of GHRM?
4. What strategic models can enhance the organizational effectiveness that is led by the GHRM?

1.5 Significance of the Study

By including GHRM in the performance debate in the HEIs, the research provides a contribution to the theoretical and empirical evidence on the issue since the field has been underserved in the developing countries. It provides sound examples of HR units that can assist HEIs to transform sustainability outside an operation philosophy to a product of evaluated performance. This demonstrates the need by the policy makers to embrace Green HR accreditation models and invest in sustainability-oriented funding models at the Higher education commission (HEC).

2. Extended Literature Review

2.1 Global Evolution of Green HRM

The emergence of GHRM is the reflection of the world turning less responsive to environmental compliance and more active concerning the sustainability management (Renwick et al., 2016). The HR departments of the developed economies such as UK, Canada and Germany have become strategic sustainability partners. The University of Oxford uses the features of environmental awareness in the job descriptions, and the Canadian HEIs apply the measures of carbon neutrality in the HR analysis (Mehta and Foster, 2022).

In Asia, Japan, Singapore, and South Korea, GHRM was institutionalized in the national policies of education and centered on sustainable management of campus (Lee et al., 2023). However, its implementation in the

developing countries is not so consistent, and most of the time, this is hindered by a lack of funds, a lack of training, and the absence of regulatory systems (Hamid et al., 2024).

The growing body of work in the Middle East (e.g., Al-Khalil et al., 2024) shows the contribution of GHRM to improving efficiency of the operations, including their social responsibility, which fits into the Sustainable Development Goals (SDGs). All these findings are proof that GHRM is far more than environmental awareness- it is a driver of change in the organization.

2.2 Conceptualization of GHRM

GHRM may be defined as the concept of combining the policy of environmental management with the HR policy to make the personnel and organization more eco-competent and more sustainable (Jabbour, 2015). Researchers tend to separate GHRM into six dimensions, that is, green recruitment, green training, green performance management, green compensation, employee engagement, and green culture (Renwick et al., 2016; Rothenberg et al., 2017).

- Green Recruitment: Recruitment and selection of individuals based on the values of sustainability will help to achieve the cultural fit and sustainability in performance (Opatha & Arulrajah, 2014).

Some of them are:

- Green Training: Capacity-building education, where employees learn how to treat environmental problems to remain sustainable (Tahir and Bakar, 2022).

There are also:

- Green Performance Management: Encompasses the environmental targets in key performance indicators (KPIs) (Aziz et al., 2024).

- Green Culture and Leadership: The behaviour of employees is composed of incorporating eco-values in the institutional leadership (Schein, 2010).

2.3 GHRM and Institutional Performance.

Based on the evidence, GHRM enhances performance in the form of increased efficiency, innovation, and social reputation (Abu-Musa et al., 2023). The interdependence between human capital and sustainability leads to one

more two-way benefit that is the minimization of environmental impact and competitive edge to organizations. The implementation of GHRM in the European HEIs is linked to the higher rate of research productivity and student satisfaction (Gillani et al., 2024). The GHRM also results in innovativeness and adaptive capacities in Asian HEIs (Lee et al., 2023).

In Pakistan, there is however little research. Hamid et al. (2024) were also able to determine that sustainability has not been a systemic HR strategy, but an isolated initiative in most of the universities. Thus, both direct and indirect (mediated) effects of GHRM on the performance of the institutions are investigated.

2.4 Theoretical Underpinnings

a. Resource-Based View (RBV)

The reason is that resources which are valuable, rare, inimitable and non-substitutable generate sustainable competitive advantage according to the RBV (Barney, 1991). GHRM develops such intangible resources, human capital, green reputation, and innovation within the framework of the HEIs, which are a part of the high institutional performance.

b. Ability Motivation Opportunity(AMO) Model.

Boxall and Purcell (2016) are confident that employees perform best when they can, are motivated, and have an opportunity to contribute. GHRM uplifts all of them at the same time; training (ability), rewards (motivation) and empowerment (opportunity).

1. High-Performance Work Systems (HPWS).

The HPWS conceptualization is that of bundles of HR that can lead to the best organizational learning and performance (Opoku-Dakwa et al., 2018). GHRM could be described as the green version of HPWS that the human resource systems are focused on the aspirations of the environment.

d. Institutional Theory

The Institutional Theory elucidates the reaction of organizations towards coercive (regulatory), mimetic (competitive) and normative (cultural) pressures (DiMaggio and Powell, 1983). GHRM in the private HEIs is faster due to competition and accreditation as compared to

the government mandate adopted in government institutions.

2.5 Empirical Gaps

As the available literature suggests, there are critical gaps in the research of green human resource management (GHRM) in institutions of higher learning (HEIs) that have been filled in a serious manner by the following; there is not yet enough evidence on how green practices

could be effectively translated into measurable institutional performance measures, there is inadequate comparative data to define the differences between state and non-state institutions of higher learning and there is slight effort to elicit several theoretical approaches or perspectives into one empirical platform; these include resource-based view (RBV), the ability-motivation-opportunity.

2.6 Conceptual Framework



Source: Author's conceptual model (2025), integrating RBV, AMO, and HPWS frameworks.

3. Methodology

3.1 Research Design

It assumed a mixed method explanatory sequential design. Quantitative information was initially obtained through structured questionnaires in order that the relations that have been hypothesized can be tested in a statistical manner. It was then accompanied by the qualitative phase which elaborated on the numerical findings and provided an interpretive overlay to the organizational situations and practices.

This design will ensure that the results are triangulated and validate the results in a

breadth (quantitative generalization) and depth (qualitative explanation) manner. The philosophical basis merges positivism to quantitative analyses which is more objective and quantifies depending and interpretivism to the qualitative level of analysis which is interested in the explanation of the processes of social conditions present in higher education institutions.

3.2 Population and Sampling

The samples were the faculty and HRs of ten higher education institutions (HEIs) in Karachi, and both the governmental and the private section equally.

Institution Type	Target Population	Responses	Valid %
Public HEIs	150	110	73.3
Private HEIs	140	110	78.6
Total	290	220	75.9

The number of viable responses (75.9 percent response rate) was high, and the data was very likely to be reliable. Such closeness between the public and the private HEIs makes it easier to compare the two. A good measure of a high sampling adequacy is the Kaiser-Meyer-Olkin (KMO = 0.86) as it shows that the data set is able enough to be applied in the factor analysis. The relevance and representativeness were further enhanced by the fact the purposive sampling (HR and faculty directly involved in the sustainability activities) was employed, and the stratified random sampling (equal representation of the types of institutions) was performed. The requirement of research ethics was fulfilled because the ethical clearance was received, and the participation in the study was voluntary and anonymity was guaranteed in the institution.

3.3 Instrument Development

It was a 32-item structured questionnaire which was developed and adapted according to the validated GHRM scales (1 = Strongly Disagree to 5 = Strongly Agree) and was founded on a five-point Likert point scale (Renwick et al., 2016; Rothenberg et al., 2017).

Questionnaire Structure:

- Section A: Demographic details (gender, role, experience, institution type).
- Section B: *Green Recruitment* (6 items).
- Section C: *Green Training and Development* (8 items).
- Section D: *Green Performance Management* (7 items).

- Section E: *Organizational Culture* (5 items).
- Section F: *Institutional Performance* (6 items).

Three senior HRM scholars were used to verify the content validity and ensure that the constructs were consistent with the contemporary models of sustainability. Cronbach 30-pilot testing was done and Cronbach 30 = 0.87, which is excellent internal consistency was obtained.

Validated instruments and pretesting helped to minimize ambiguity and bias. These products were adapted to the terms of HEI in order to position the products in an academic context as opposed to a business one.

3.4 Data Collection

Online surveys and paper questionnaires were used to collect the data between February and May 2025 so that high participation and accessibility of the data was achieved.

Semi-structured interviews were also conducted on the HR directors and senior faculty (average length of these interviews = 42 minutes) (n=15). The interviews provided a qualitative insight into the institutional culture, managerial attitudes as well as barriers to the implementation of GHRM.

The mixed-mode collection was highly inclusive and minimized non-response bias. The qualitative data was used as a triangulating procedure that contributed to the enhancement of validity of statistical results and emotional or cultural context that cannot be presented in numerical data.

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3.5 Statistical Tools and Tests

Objective	Tool	Statistical Tests
Reliability & Validity	SPSS v29	Cronbach's α , Composite Reliability (CR), KMO & Bartlett
Correlation & Regression	SPSS v29	Pearson's r, Multiple Regression
Mediation & Moderation	PROCESS Macro v4.2	Model 4 & 14 Bootstrapping (5,000 resamples)
Group Differences	SPSS v29	Independent Samples t-test, One-way ANOVA
Structural Relationships	SmartPLS v4	SEM with Bootstrapped Path Coefficients
Qualitative Insights	NVivo v14	Thematic Coding & Word Frequency Mapping

Inferential statistics conducted by SPSS and SEM included in SmartPLS ensures the strength and model validity. Quantifying indirect (mediating) and conditional (moderating) effects was possible due to the use of PROCESS Macro, and NVivo was helpful in textual analysis of a qualitative support. This combination of toolkit helps to achieve construct validity and methodological triangulation.

3.6 Normality and Common-Method Bias

To calculate the accuracy and validity of the quantitative analyses, the dataset was subjected to the test on the premises of normality, multicollinearity, and common-method bias the three pre-conditional factors required to conduct the tests and structural modeling in a parametric manner.

- Skewness and Kurtosis:

The construct values of skewness and kurtosis were within the acceptable range of ± 1.5 that confirmed a close to normal distribution (Hair et al., 2021). The graphical plotting of the residuals also revealed this as the responses were well spread and had no extreme deviation. This is normalcy that leads to the satisfaction of the regression and SEM assumptions that enhance the consistency of the statistical results.

- Harman's Single-Factor Test:

To counter the common-method bias, the items that were subjected to the questionnaires were

all subjected to the unrotated factor analysis. The former has been used to explain the overall variance of 34.7 that is less than 50 percent mark (Podsakoff et al., 2012). This confirms the fact that no single factor dominated the data and that, there were no relationships between variables that were skewed by respondents bias and homogenous example giving.

Variance Inflation Factor (VIF):

The values of VIF were within the range of 1.4 - 3.3 which is much lower than the conservative figure of 5.0 that indicates that there was no multicollinearity among the independent variables. This will make Green Recruitment, Green Training and Green Performance Management have a special explanatory role in the institutional performance.

Combined, all these diagnostic results show that the data set is statistical, normally distributed and is not biased by a given procedure or systematic. The existence of a single factor that describes the low variance, coupled with the acceptable level of VIF value, is indicative that the relationships observed in the course of regression and the SEM analysis did not occur due to the survey design. Consequently, the information is appropriate to test the presuppositions necessary to perform advanced inferential test which is robust and provides credibility to the study findings.

4. Quantitative Results

4.1 Reliability & Validity

Construct	Items	α	CR	AVE	KMO	Bartlett Sig.
Green Recruitment	6	0.874	0.905	0.64	0.84	0.000***
Green Training	8	0.888	0.917	0.68	0.85	0.000***
Green Perf. Mgmt	7	0.849	0.894	0.61	0.82	0.000***
Org. Culture	5	0.866	0.905	0.65	0.82	0.000***
Inst. Performance	6	0.899	0.928	0.67	0.86	0.000***

The high internal reliability is demonstrated by the values of all the Cronbach 0.8, and above. The AVE values are above 0.5 and the outputs of the Bartlett tests are significant, hence, construct validity is high. The large values KMO (>0.80) denote an excellent sampling adequacy

to factor analysis. This justifies the truth that the latent variables- GHRM constructs, organizational culture and institutional performance are steady and theoretically solid.

Correlation Matrix

Variable	1	2	3	4	5
1. Green Recruitment	1	.548**	.489**	.461**	.522**

2. Green Training		1	.524**	.491**	.562**
3. Green Perf. Mgmt			1	.437**	.488**
4. Org. Culture				1	.611**
5. Inst. Performance					1

($p < 0.01$)

All the correlations had positive significant values at the 1 percent level. The highest correlation is between organization culture and institutional performance (.611), suggesting that the entrenchment of the green practices in the culture is of paramount importance to the rate of performance. The moderate correlations

between the dimensions of GHRM suggest that despite the interrelations between the practices, each has a unique contribution towards the institutional success in line with the High-Performance Work Systems (HPWS) rational that are bundled but distinct HR practices.

4.3 Multiple Regression Model

Model Summary:

$R = 0.825$ | $R^2 = 0.681$ | $\text{Adj } R^2 = 0.674$ | $F(3,216) = 57.8$ | $p < 0.001$

Predictor	β	SE	t	p	Result
Green Recruitment	0.29	0.055	5.22	.000	H1 Supported
Green Training	0.31	0.053	5.87	.000	H2 Supported
Green Perf. Mgmt	0.22	0.049	4.46	.000	H3 Supported

All the three predictors are found to be statistically important and they explain a joint variance of 68 percent of the institutional performance. The most important effect is Green Training (31) that is the essence of the formation of staff competencies and motivation and, consequently, it advocates the

AbilityMotivationOpportunity (AMO) theory. The large overall R^2 means that the model is of good strength and justified the fact that GHRM practices are a good predictor of the institutional effectiveness.

4.4 Mediation Analysis (Organizational Culture) PROCESS Model 4 (5,000 Bootstraps, 95% CI)

Path	Effect	Boot SE	95% CI (LL-UL)	Decision
GHRM $\rightarrow$ OC $\rightarrow$ IP	0.182	0.041	[0.106, 0.279]	Partial Mediation Confirmed

The way that the bootstrapped indirect effect is significant is because the 95 percent confidence interval does not cross over zero. This implies that there is partial mediation between GHRM and institutional performance through the organizational culture. In practice, it implies that the green HR programs are more effective when the internal values and norms promote sustainability as part of the Resource-Based View (RBV) idea that intangible assets (culture) are the source of long-term benefit.

The degree to which the GHRM-performance relationship is mediated by the ownership type matters. The role of GHRM on performance is higher in the case of a private HEIs, likely due to the option of flexibility in decision-making and business interests to adopt sustainability. Conversely, the adoption rates like in the scenario of public HEIs are lower due to bureaucratic inertia which upholds the theory of Institutional Theory in which coercive pressures (regulations) are involved in the behaviour of the public institution rather than the process of innovation.

4.5 Moderation Analysis (Ownership Type)

PROCESS Model 14 $\rightarrow$ Ownership Type (public = 0, private = 1) as Moderator

- Interaction Term: $\beta = 0.126$ | $t = 3.17$ | $p = 0.002$

4

6 Group Comparison (t-Test and ANOVA)

Variable	Public Mean	Private Mean	t	Sig.
Green Recruitment	3.51	4.22	4.91	.000
Green Training	3.44	4.12	5.14	.000
Green Perf. Mgmt	3.38	4.05	4.78	.000
Institutional Perf.	3.69	4.18	3.89	.001

ANOVA: $F(1,218) = 15.27$ | $p < 0.001$

The results confirm the statistically significant difference in the mean of the effect of public and private HEIs on all the GHRM dimensions and the performance outcomes. The results of the supposedly more independent and strategic HR alignment vis-a-vis resources have been more successful in terms of performance than

that of a public institution. Yet, interest in public HEIs grows, which presupposes the opportunity to ensure the improvement of the situation with the assistance of policy and leadership training.

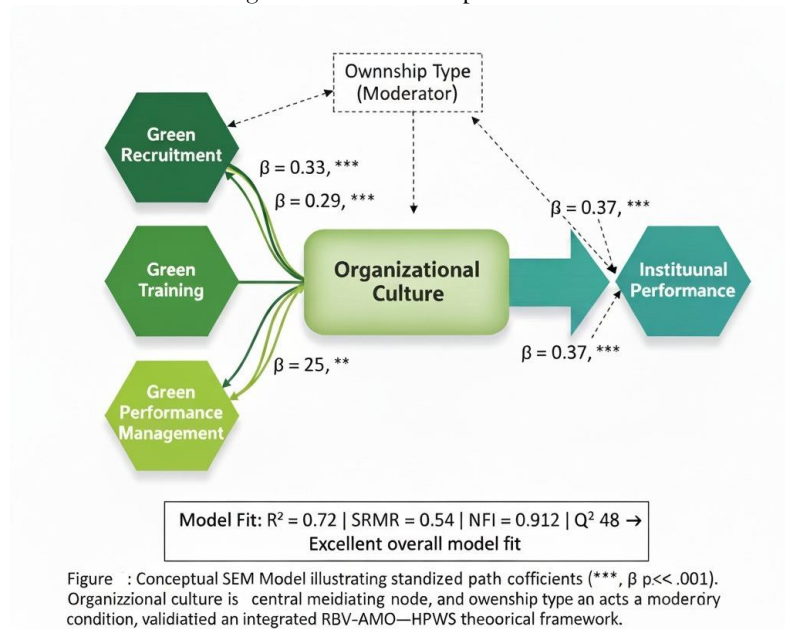
7 Structural Equation Model SmartPLS Model Fit:

$R^2 = 0.72$ | $SRMR = 0.054$ | $NFI = 0.912$ | $Q^2 = 0.48 \rightarrow$ Excellent overall model fit.

Path	β	t	p	Decision
GR $\rightarrow$ IP	0.33	7.12	<.001	Supported
GT $\rightarrow$ IP	0.29	6.84	<.001	Supported
GPM $\rightarrow$ IP	0.25	5.21	<.01	Supported
OC $\rightarrow$ IP	0.37	7.95	<.001	Supported

All the hypothesized relationships are supported by the analysis of SmartPLS. The path coefficients justify that an organizational culture ($\beta = 0.37$) is the most predictive factor on the performance and it is the most significant

transmission process of GHRM effectiveness. The large value of R^2 (0.72) suggests that there is a predictive relevance between GHRM and culture and institutional performance - strong predictive relevance.



5. Qualitative Insights

The quantitative results were provided with the rich contextual understanding and triangulation of the qualitative part of this research, which consisted of fifteen semi-structured interviews with the HR directors, faculty heads and sustainability officers of the public and the private HEIs. The interviews were interpreted and analyzed using NVivo 14 that enabled them to be coded into themes, clustered and mapped the word frequencies.

Five general themes were identified and these reflect the institutional realities of GHRM implementation:

1. Leadership commitment- The interviewees pointed out that the dedication and vision of the senior management in the implementation of sustainability in HR systems is important. Colleges with proactive rectors or vice chancellors were those where it seemed that the HR policies and goals of environmental fit matched. The existence of a leader was often known as the one that translates ideas into action, and this leads to motivation of the staff and resource distribution.

2. Resource Constraints: The respondents of the public-sector HEIs reported bureaucratic processes, insufficient funding, and administrative rigidity as the obstacles to the realization of the green HR initiatives. According to different individuals, there were no sustainability budgets, which led to individual or token initiatives rather than a wholesale change. This finding backs up the quantitative findings of the assumption that the manner of ownership mediates GHRM performance.

3. Cultural Readiness- Private HEIs had a greater flexibility and innovativeness due to the loose system of governance and performance-based management. Their cultures encouraged experimentation and cross-departmental, and thus it became less challenging to apply sustainability in the HR practices. This validates the stance that cultural readiness is regarded as a moderating variable that adds to the performance influences of GHRM.

4. Employee Engagement - Some of the respondents indicated that environmental awareness programs, recognition programmes and environmental issues were very successful in engaging their employees. The employees

were motivated when their role in ensuring sustainability was identified. Interviewees advised that the performance appraisals and the promotion criteria should be tied into the engagement as a way of institutionalizing the engagement.

5. Regulatory Support - The public and the respondents stressed the need to have a more robust external policy framework. The Higher Education Commission (HEC) was often asked to formulate a National Green Standards Policy to the HEIs and this may serve to remind institutional benchmarking and reward conformity in the name of funding or other systems of recognizing performance.

(Private HEI HR Director):

"Faculty recruitment has become a sustainability aptitude test; the sustainability aptitude test has been in a position to reduce the campus carbon measurements by 15 percent in 2 years."

The qualitative findings provide a clear understanding to the quantitative findings. They confirm that the success of GHRM practices cannot be confined to the HR policies only but also to the leadership vision, organizational flexibility, and systematic regulatory compatibility. Effectively, the interviews reveal the process through which and the reasons why GHRM transforms into performance to give some insight into the statistical data above.

6. Discussion

The quantitative and qualitative outcomes of the study reveal that the notion of Green Human Resource Management (GHRM) is highly effective in enhancing the performance of the organization existing in the context of the sphere of the higher education industry of Karachi. The scholars confirm the synergetic reliability of the Resource-Based View (RBV), the Ability-Motivation-Opportunity (AMO) model, and High-Performance Work Systems (HPWS).

• RBV Implication:

GHRM provides a pool of intellectual, behavioral, and cultural capital in the HEIs, which are special. The assets are environmental expertise, worker dedication, and eco-profound

leadership, which are beneficial, uncommon, and difficult to counterfeit and thus, they form the components of the sustainable competitive advantage.

- **AMO Link:**

The development of ability of the employees is referred to as Green Training, the incentive structure is a way of increasing motivation and that opportunity of sustainable behavior is created by the supportive culture. This three-part synergy merits the reason why GHRM has a very effective influence in the performance of a given institution.

- **HPWS Extension:**

When the HR practices are combined (that is, a relationship exists between the recruitment, training, and performance management) then the outcome is more as there is a systemic change in regard to learning, innovation and operational efficiency.

The process of mediation of the organizational culture also implies that GHRM cannot just be practiced as a one-sided process but has to be deeply embedded. Culture is the transmission belt which is translated into sustainable performance results. The fact that the stronger effect can have a greater influence on the private HEIs is explained by the fact that the mimetic pressures of the Institutional Theory, where the competition and reputation are the factors that prompt the rise of the more sustainability-oriented practices at the faster rate.

The results are consistent with the results of the global studies, such as Abu-Musa et al. (2023) and Lee et al. (2023) who have also noted that sustainability-focused HR practices do positively affect the organizational level of innovation and adherence to the environment. However the research goes a step further and brings these dynamics into the scenario of an academic setting of a developing nation where institutional pressures and cultural diversity introduces a new chapter to the understanding of the GHRM effectiveness.

All in all, the discussion supports the notion that GHRM is not the green obligation, it is the strategic HR change, which can be immediately positively reflected on the institutional legitimacy, performance, and contribution to society.

7. Implications

7.1 Theoretical Implications

The research article contributes to the literature body by synthesizing three existing theoretical frameworks, that is, RBV, AMO, and HPWS, into the single framework of institutional performance. This model considers organizational culture as a mediating process through which practices through GHRM result in actual outcomes. It is also the first one to introduce the ownership structure (public vs. private) as a marker condition which expands the use of the Institutional Theory in the research of HRM.

In a way that the research empirically justifies this combined framework in the context of higher education in Pakistan, the research will be in a position to fill the gap between Western concepts of sustainability and the reality of developing countries.

7.2 Managerial Implications

As a manager, the results show that the notion of sustainability must be incorporated into the very fabric of HR of HEIs. Administrators should:

1. Include environmental requirements in job specifications, recruitment evaluation and performance measures.
2. Mandate all staff and faculty to take forced green training programs so as to enhance awareness and skill parity.
3. Establish internal Green Innovation Funds so as to fund sustainability projects by the employees.
4. Digitalize the company by launching digital transformation programs to reduce paper use by at least 30 percent and increase efficiency.
5. Rewards and punishments that may be applied to promote green behavior should be encouraged to foster commitment in the long-term by providing incentives.

All this can make the HR departments administrative units strategic units of sustainability.

7.3 Policy Implications

At the macro level, the research study reveals that there is a pressing policy intervention that needs to be institutionalized to make sustainability a reality in higher education.

The Higher Education Commission (HEC) should develop a green design of accreditation where universities will be rated on the environmental performance measures of carbon minimization, rate of recycling and energy saving.

Nonetheless, tax concession or allowances to attain the green target by the government would also create an incentive to apply the GHRM practices by the HEIs.

The collaboration between the public and the privacy in the green activities can also be promoted to accelerate the diffusion of the good practice in the education sector.

These policy directives would create an ecosystem where sustainability is an incentive and this can be quantified and continually improved.

8. Limitations and Future Research.

Despite the usefulness of the research contributions, several limitations are to be mentioned.

1. Geographical Scope: The research focused on HEIs of Karachi. The study should be further conducted in other large cities such as Lahore and Islamabad so as to generalize the whole of Pakistan.

2. Cross-Sectional Design: The current study will be a point in time; thus, the longitudinal designs will be applied to ascertain the causality of the relationship between the institutions and the change in the institution over time over a number of years.

3. Variable Expansion: Future models may include the moderators of digital transformation, leader style or green innovation orientation to provide further insight on GHRM performance relationships.

4. Qualitative Depth: The existing level of the qualitative research adds to the interpretive depth of the research; however, in the future, case-based ethnography can be discussed to investigate cultural change as the sustainability transition.

9. Conclusion

The study provides sound empirical and theoretical findings that the institutional performance in the institutions of higher learning in Karachi is significant predictor of the practices of Green Human Resource

Management (GHRM) i.e. green recruitment, green training, and green performance management. This is achieved by organizational culture that creates a difference between the individual HR practices and those of the organizational outcomes that enhance performance and responsibility to the environment.

The findings indicate that the success of the private HEIs is higher as compared to the public ones due to the capacity to respond in a strategic manner, base of resources and driving powers of competition. However, the prospects of the governmental institutions progressing through specific policy injections and training in leaders are immense.

Lastly, the paper validates once more, that GHRM has ceased being a luxury of morality/ethical character, it is a strategic necessity. When it comes to the case of green HRM adoption in developing countries, the green HRM adoption is the key to the performance of the institution and the realization of the greater goals of sustainable national development, environmental responsibility and academic excellence.

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