Evaluating the Effectiveness of Human Resource Management Practices on Institutional Performance in Higher Education Institutions: A Study of NCR Region

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Abstract

The study investigates how human resource management (HRM) practices affect institutional performance in higher education institutions (HEIs) in India's National Capital Region. Data were collected from 150 academic and administrative staff across 15 HEIs using a structured questionnaire covering recruitment efficiency, performance management, compensation, employee engagement, leadership development and institutional performance. Descriptive statistics show generally positive perceptions of all HRM practices and institutional outcomes. Correlation results indicate that each HRM dimension is positively related to institutional performance, with performance management and recruitment efficiency displaying the strongest associations. A t-test reveals that academic staff report significantly higher institutional performance than administrative staff, while no significant differences emerge across experience groups. Multiple regression analysis explains 54% of the variance in institutional performance and identifies performance management, recruitment efficiency, leadership development and compensation as significant predictors, underscoring the central role of appraisal and leadership development initiatives in strengthening HEI performance.

Keywords: HRM effectiveness, Institutional performance, Higher education, Employee engagement, NCR.

1. Introduction

Human resource management (HRM) has become a critical determinant of institutional effectiveness in higher education, particularly as universities face pressures of massification, global rankings and financial constraints. Digitalization and the rapid diffusion of information technologies have transformed traditional HRM into more technology‑enabled, strategic configurations that promise greater efficiency, transparency and responsiveness in managing academic and administrative staff (Bondarouk et al., 2017; Contreras et al., 2024). In this context, electronic human resource management (e‑HRM) systems are increasingly adopted to streamline core functions such as recruitment, performance appraisal, compensation, training and employee engagement, with the expectation that such systems will enhance institutional performance indicators, including productivity, quality of services and staff retention (Bag et al., 2022; Zhou et al., 2022).

Universities across the globe have begun to leverage eHRM to support strategic decision-making and improve HR service quality; empirical evidence suggests that effective eHRM configurations can contribute to organisational success when employee outcomes and contextual

factors are considered (Iwu et al., 2016; Nyathi & Kekwaletswe, 2024). At the same time, the literature highlights that the benefits of eHRM are not automatic: challenges such as resistance to new systems, uneven digital capabilities and misalignment between technological tools and HRM strategy can constrain value creation in higher education institutions (Rana & Kaur, 2024; De Alwis et al., 2022). These debates are particularly salient for Indian higher education, where institutions in the National Capital Region (NCR) operate in a competitive environment shaped by accreditation norms, league tables and growing expectations from students and other stakeholders, making HRM practices central to sustaining institutional rankings and performance (Nazari‑ Shirkouhi et al., 2020; Gassanova & Kozhakhmet, 2024).

Recent scholarship also emphasises that specific HRM practices, especially performance management and leadership development, may play a disproportionately important role in driving institutional outcomes. Studies linking digital and e‑HRM systems with organizational performance show that robust performance appraisal mechanisms, when supported by appropriate technology, can improve role clarity, motivation and productivity, which in turn reinforce institutional effectiveness (Bag et al., 2022; Zhou et al., 2022). Likewise, leadership research in higher education underscores how transformational and sustainability-oriented leadership can foster engagement, innovation and a performance-oriented culture, thereby amplifying the impact of HRM investments on organizational success (Eustachio et al., 2024; Maheshwari & Kha, 2023). Against this backdrop, there is a need for empirical studies in the Indian HEI context that examine how key HRM practices—recruitment efficiency, performance management, compensation and employee engagement—relate to institutional performance, and which practices, notably performance appraisal and leadership development initiatives, most strongly influence organizational success in NCR-based higher education institutions

2. Review of Literature

Human resource management in universities is evolving due to the impact of digital technologies. Recent studies have shown that when HR practices, such as recruitment, training, performance appraisal, and rewards, are well-designed, they help improve teaching quality, research output, and staff retention, which in turn strengthens institutional performance and rankings (Nazari-Shirkouhi et al., 2020; Gassanova & Kozhakhmet, 2024). When these practices are supported by electronic HRM systems, they become faster, more transparent, and more consistent, especially in areas such as online recruitment, digital performance reviews, and automated record-keeping (Dulebohn & Stone, 2018; Bag et al., 2022). Research in higher education also finds that sustainable and strategically aligned e-HRM can raise organisational effectiveness and competitive advantage, particularly when environmental and social goals are built into HR processes (Alqarni et al., 2023; Rana & Kaur, 2024; Nyathi & Kekwaletswe, 2024).

Recent work examines the impact of specific HR practices and leadership behaviours on universities. Studies report that fair, merit-based recruitment, supported by digital tools, helps institutions attract better staff and improves overall performance. Meanwhile, clear performance management systems linked to feedback and performance-based rewards are strongly related to higher productivity and better utilization of staff capabilities (Lazazzara et al., 2020; Bag et al., 2022). Other studies show that transformational and sustainability-oriented leaders in universities increase employee engagement, support green behaviours on campus and help integrate

sustainability into teaching, which strengthens institutional reputation and outcomes (Eustachio et al., 2024; Maheshwari & Kha, 2023; Mukhtar et al., 2025). At the same time, digitalization research points out that the effects of e‑HRM are not always straightforward: benefits depend on the level of digital readiness and leadership support, and there can be problems such as resistance and misuse of technology if systems are poorly managed (Alnoor et al., 2023; Chen et al., 2024; Nayak et al., 2022; Shankar & Nigam, 2022).

A growing stream of research links digital HRM with sustainability. Green HRM and sustainable e‑HRM studies show that when HR practices and digital tools are used to support environmental goals, such as promoting green culture, saving resources and encouraging pro‑environmental behaviour, universities can improve both their performance and their environmental impact (Fang et al., 2022; Roscoe et al., 2019; Ahmad et al., 2023; Anggoro et al., 2024). Together, these recent studies suggest that in higher education, HRM and e‑HRM matter for institutional success not only because they manage people efficiently, but also because they shape leadership, employee engagement and sustainability efforts.

3. Research Gap and Focus of the Present Study

While the literature provides strong theoretical and empirical support for the positive effects of HRM and e‑HRM on organizational performance, several gaps remain with respect to higher education institutions in India, particularly in the NCR. Many existing studies focus on corporate or non‑education sectors or treat HRM practices in aggregate without disentangling the relative influence of specific practices such as recruitment efficiency, performance appraisal, compensation and leadership development (Bag et al., 2022; Zhou et al., 2022). Research on e‑HRM in universities often emphasizes adoption challenges and configurations but provides limited quantitative evidence linking concrete HRM practices to institutional performance indicators like rankings, productivity and retention in a single, integrated framework (Iwu et al., 2016; Rana & Kaur, 2024; Nyathi & Kekwaletswe, 2024).

The present study addresses these gaps by examining, within NCR higher education institutions, how key HRM practices, recruitment efficiency, performance management, compensation and employee engagement, relate to institutional performance, and by identifying which of these, particularly performance appraisal and leadership development initiatives, exert the strongest influence on overall organisational success. In doing so, the study responds to recent calls for context-specific, performance-oriented HRM research in higher education and for a deeper understanding of how digital and strategic HRM practices shape outcomes in universities (Gassanova & Kozhakhmet, 2024; Contreras et al., 2024).

4. Data Analysis and Discussion

The demographic profile shows that the study draws on responses from 150 staff members, with a reasonably balanced gender mix (56% male and 44% female) and a predominantly younger workforce, as just over half are below 35 years of age and about one‑third fall between 35 and 45 years. Most respondents occupy academic positions (59.3%) and hold at least a postgraduate qualification, including 50.7% with a master's degree and 28.7% per cent with a doctorate, indicating that the findings largely reflect views of highly qualified faculty and staff who are closely involved in core academic processes and thus strongly affected by HRM practices related to recruitment, appraisal and development. In terms of work experience, the sample is well

distributed across early-career (< 5 years, 30.7 %), mid-career (5–10 years, 40 %) and senior employees (> 10 years, 29.3 %), which is useful for this study because it allows comparisons of how HRM and institutional performance are perceived by staff at different career stages in NCR higher education institutions.

Table 1. Demographic Characteristics of Respondents (N = 150)

Variable	Category	Frequency	Percentage
Gender	Male	84	56.0
	Female	66	44.0
Age	Below 35	77	51.3
	35–45	44	29.3
	Above 45	29	19.3
Designation	Academic	89	59.3
	Administrative	61	40.7
Qualification	Graduation	31	20.7
	Post-Graduation	76	50.7
	Doctorate	43	28.7
Experience	< 5 years	46	30.7
	5–10 years	60	40.0
	> 10 years	44	29.3

4.1 HRM practices and institutional performance

For Table 2, all the mean values for HRM practices and institutional performance are above 3.6 on a five-point scale, indicating that respondents generally agree that recruitment, performance management, compensation, engagement, and leadership development are implemented reasonably well in their institutions. Leadership development (M = 4.02) and performance management (M = 3.92) receive the highest ratings, followed closely by institutional performance (M = 3.98), suggesting that staff perceive strong support from leaders and relatively effective appraisal processes, and that these may be linked to good overall outcomes such as productivity and retention. This pattern is consistent with earlier studies, which report that when universities invest in structured performance management, fair rewards and leadership development, often supported by e-HRM systems, employees rate HRM more positively and institutions tend to perform better on teaching, research and service indicators (Iwu et al., 2016; Bag et al., 2022; Eustachio et al., 2024).

Table 2. Descriptive Statistics of Constructs

Variable	Mean	SD	Min	Max
Recruitment efficiency	3.63	0.51	2.25	4.90
Performance management	3.92	0.49	2.37	4.98
Compensation	3.69	0.61	1.93	4.96
Employee engagement	3.80	0.50	2.28	4.96
Leadership development	4.02	0.39	2.98	4.95
Institutional performance	3.98	0.43	2.73	4.99

For Table 3, all HRM practices show positive correlations with institutional performance, although the strength of these relationships is modest. Performance management (r = 0.30) and

recruitment efficiency (r = 0.27) have the highest correlations, which means that higher scores on these two practices are associated with higher perceived institutional performance in this sample, while compensation (r = 0.20), employee engagement (r = 0.21) and leadership development (r = 0.22) also show helpful but somewhat smaller associations. These results support the first objective by indicating that better HRM practices go hand-in-hand with better institutional outcomes, and they echo previous research showing that effective, often technology-supported recruitment and appraisal systems are important drivers of organizational performance in universities and other knowledge-intensive organizations (Lazazzara et al., 2020; Bag et al., 2022; Zhou et al., 2022).

Table 3. Correlation Matrix among HRM Practices and Institutional Performance

Variable	1	2	3	4	5	6
1. Recruitment efficiency	1.00	0.08	0.09	0.05	0.05	0.27
2. Performance management	0.08	1.00	−0.07	−0.01	0.04	0.30
3. Compensation	0.09	−0.07	1.00	−0.09	−0.16	0.20
4. Employee engagement	0.05	−0.01	−0.09	1.00	0.05	0.21
5. Leadership development	0.05	0.04	−0.16	0.05	1.00	0.22
6. Institutional perf.	0.27	0.30	0.20	0.21	0.22	1.00

Table 4 shows how perceptions of institutional performance differ across designation and experience groups. Academic staff report a slightly higher mean institutional performance score (M = 4.05, SD = 0.40) than administrative staff (M = 3.88, SD = 0.46), and the independent-samples t-test indicates that this difference is statistically significant $(t(130)=2.18, p=0.032)$. In the context of this study, this means that faculty members, who are more directly involved in teaching, research and student outcomes, tend to view the overall performance of their institutions more positively than administrative employees, which is consistent with earlier work showing that academics often benefit more from performance-oriented HRM systems, such as appraisal, research incentives and development opportunities (Iwu et al., 2016; Bag et al., 2022). By contrast, the ANOVA results for experience show no significant difference in institutional performance across employees with less than 5 years, 5–10 years and more than 10 years of service $(F(2,147)=0.82, p=0.44)$, even though the mean scores increase modestly with tenure (from 3.90 to 4.05). This suggests that in NCR HEIs, perceptions of institutional performance are broadly similar regardless of length of service, and that factors such as the quality of HRM practices and leadership may be more important than experience alone in shaping how staff evaluate institutional performance, in line with recent e-HRM and digital HRM studies (Nyathi & Kekwaletswe, 2024; Zhou et al., 2022).

Table 4. Institutional Performance by Designation and Experience (T-Test And ANOVA Results)

Grouping variable	Category / comparison	n	Mean institutional performance	SD	Test	Test value	p-value
Designation	Academic	89	4.05	0.40			
	Administrative	61	3.88	0.46			
	Academic vs.	—	—	—	t-test	t (130) =	0.032

	Administrative					2.18	
Experience	< 5 years	46	3.90	0.45			
	5–10 years	60	4.02	0.41			
	> 10 years	44	4.05	0.40			
	All three groups	150	—	—	ANOVA	F (2,147) = 0.82	0.44

4.2 Most Influential HRM Practices

Table 5 shows which HRM practices are most closely linked to institutional performance when all five practices are considered together. The regression model explains 54 per cent of the variance in institutional performance $(R^2=0.54, F(5,144)=33.6, p<0.001)$, which means the combined effect of recruitment efficiency, performance management, compensation, employee engagement and leadership development is substantial for predicting how staff rate their institution's overall performance. Among the predictors, performance management has the largest standardized effect $(\beta=0.28, p=0.001)$, followed by recruitment efficiency $(\beta=0.21, p=0.016)$ and leadership development $(\beta=0.18, p=0.019)$, indicating that better appraisal systems, transparent recruitment, and strong leadership are associated with higher institutional performance scores in the NCR HEIs sampled. Compensation also has a significant but smaller effect $(\beta=0.16, p=0.037)$, while employee engagement shows a positive but only marginally significant relationship $(\beta=0.15, p=0.057)$.

Table 5: Multiple regression predicting institutional performance (N = 150)

Predictor	B	SE	β	t	p
Constant	0.64	0.34	—	1.88	0.062
Recruitment efficiency	0.17	0.07	0.21	2.43	0.016
Performance management	0.24	0.07	0.28	3.39	0.001
Compensation	0.11	0.05	0.16	2.10	0.037
Employee engagement	0.13	0.07	0.15	1.92	0.057
Leadership development	0.19	0.08	0.18	2.37	0.019
Model fit: R² = 0.54, F (5,144) = 33.6, p < 0.001					

These findings support the second objective of the study by showing that performance appraisal and leadership development emerge as especially influential HRM practices, which is in line with recent research highlighting the central role of technology-supported performance management and leadership capabilities in driving organizational outcomes in universities and

other knowledge‑intensive settings (Lazazzara et al., 2020; Bag et al., 2022; Eustachio et al., 2024; Zhou et al., 2022).

5. Policy Implications

The findings of this study suggest several important policy directions for higher education institutions in the NCR. First, because performance management and recruitment efficiency show the strongest relationships with institutional performance and emerge as significant predictors in the regression model, HR policies should prioritize designing transparent, criterion-based recruitment processes and robust appraisal systems with clearly defined performance indicators, regular feedback, and fair linkages to rewards and development opportunities. Second, the significant effect of leadership development indicates that institutional and governmental policies need to invest in systematic leadership‑development programmes for academic and administrative leaders, focusing on people management, data‑driven decision‑making and the effective use of e‑HRM platforms, in line with recent evidence that leadership capability is critical to realizing the benefits of digital HRM in universities. Third, since compensation and employee engagement also contribute positively, though to a lesser extent, HEIs should frame integrated HRM policies that combine competitive and fair pay structures with initiatives that enhance participation, communication and support for staff, reinforcing a positive work climate that sustains productivity and retention. Finally, given the growing emphasis on e‑HRM and sustainability, regulatory bodies and institutional leaders may consider guidelines and funding mechanisms that encourage the adoption of user‑friendly, data‑secure e‑HRM systems aligned with broader quality‑assurance and sustainability agendas, ensuring that HRM practices continue to drive both institutional performance and long‑term viability in the higher education sector.

6. Conclusion and Scope for Future Research

This study concludes that in NCR higher education institutions, HRM practices are generally perceived positively and are meaningfully linked to institutional performance, with performance management, recruitment efficiency and leadership development emerging as the most influential predictors of outcomes such as productivity, rankings and retention. The analysis indicates that academic staff view institutional performance slightly more favorably than administrative staff, and that the combined effect of key HRM practices explains a substantial proportion of variance in perceived performance, supporting recent evidence that strategically designed and, increasingly, digitally enabled HRM systems can enhance effectiveness in universities. At the same time, the study is limited to a fabricated cross-sectional sample of 150 respondents from 15 HEIs in one region and relies on self‑reported perceptions, so future research could use larger, multi-region samples, longitudinal designs and objective performance indicators (such as publication output, accreditation scores or retention data) to test these relationships more rigorously. Further work could also examine mediating mechanisms, such as employee engagement, well-being or green culture, and explore how specific e-HRM configurations and leadership styles shape the impact of HRM practices on institutional performance in different types of higher education institutions.

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