

# The Mediating Role of Job Satisfaction in the Relationship Between Human Resource Management Practices and Employee Loyalty: A Study of Medical Institutions in Lahore

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## Abstract

This study investigates the impact of human resource management (HRM) practices - recruitment and selection, training and development, rewards, and employee empowerment - on employee loyalty in medical institutions in Lahore, Pakistan, with job satisfaction as a mediating variable. A quantitative, cross-sectional design was employed, and data were collected through a structured online survey using purposive sampling to select faculty members with relevant experience of institutional HR practices. The sample size (N = 350) was determined using the Krejcie and Morgan formula. Partial Least Squares Structural Equation Modeling was applied to test the proposed relationships.

The findings reveal that recruitment and selection, training and development, and employee empowerment have significant positive effects on employee loyalty, whereas rewards show no significant impact. Additionally, job satisfaction does not mediate the relationship between HRM practices and employee loyalty, indicating that these practices exert a direct influence on loyalty.

Theoretically, this study extends the HRM and employee loyalty literature by providing empirical evidence from the healthcare education sector in a developing country context and by clarifying the non-mediating role of job satisfaction in this relationship. Practically, the findings guide institutional policymakers and administrators in prioritizing strategic recruitment, continuous professional development, and empowerment initiatives to foster long-term faculty commitment beyond monetary incentives.

However, the study is limited by its cross-sectional design, which restricts causal inferences, and its focus on a single geographical context, which may limit generalizability. Future research is recommended to adopt longitudinal designs, include multiple sectors or regions, and examine additional mediating or moderating variables to better understand the complexity of HRM-loyalty relationships.

**Categories:** Strategic Human Resource Management, Sustainable Human Resource, Human resources in hospitality

**Keywords:** employee loyalty, hrm practices, job satisfaction, recruitment and selection, training and development, rewards, employee empowerment

## Introduction

The healthcare education sector operates in a highly complex and demanding environment characterized by workforce shortages, increased service expectations, and growing competition for skilled professionals. Medical institutions depend heavily on qualified faculty members who contribute not only to academic excellence but also to the broader healthcare

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system.

However, high employee turnover, declining morale, and weak organizational attachment remain persistent challenges in healthcare and academic institutions globally. These challenges threaten institutional sustainability and service quality, making employee loyalty a strategic priority. This is particularly evident in the context of Lahore's medical education sector, where the scale and complexity of medical education amplify these concerns. Pakistan operates a substantial network of approximately 124 medical colleges and universities nationwide, with 66 institutions concentrated in Punjab province alone, collectively enrolling around 15,945 MBBS students annually (PMDC, 2024), where faculty members play a pivotal role in training future healthcare professionals, making sound HRM practices vital for institutional sustainability and success (Alajlani and Yesufu, 2022).

Employee loyalty refers to an employee's psychological attachment, commitment, and willingness to remain with and actively contribute to an organization (Kolibu and Dewi, 2023) (Dutta and Dhir, 2021). Loyal employees demonstrate cooperation, adherence to organizational values, and long-term engagement. Research shows that employee loyalty strengthens performance, institutional stability, and competitive advantage (Nuryanto et al., 2021) (Faniran and Velayutham, 2023). In academic settings, however, loyalty often coexists with concerns about salary fairness and managerial decisions, pointing to a complex dynamic where commitment persists despite job performance tensions (Pantha, 2023). Furthermore, organizational commitment serves as a mediator between HRM practices, workplace spirituality, and employee performance, reinforcing its centrality in fostering loyalty (Labetubun and Dewi, 2022). In healthcare education settings specifically, weak loyalty can disrupt knowledge continuity, affect student training quality, and compromise institutional effectiveness.

Human Resource Management (HRM) practices are widely acknowledged as key determinants of employee attitudes and behaviors. Recruitment and selection processes play a crucial role in fostering employee loyalty and work commitment, with well-structured HR policies positively influencing employee performance (Wiguna and Hermina, 2023). Recruitment & selection, training & development, rewards, and employee empowerment have consistently been linked with positive employee outcomes (Eromafuru and Baovi, 2024) (Owolabi et al., 2024), with broader societal implications for healthcare education standards and service delivery (Kuncorowati et al., 2022). Addressing employee turnover is equally critical, as effective HRM practices enhance loyalty particularly in healthcare settings (Rahman et al., 2023). Employee loyalty is further shaped by these HR practices, enhancing engagement, work-life balance, and overall performance (Lamsir, 2025) (Goyal, 2023). Studies suggest that supportive HR practices foster reciprocal positive behaviors under Social Exchange Theory (SET) (Cropanzano et al., 2017); however, empirical findings remain inconsistent across contexts, particularly in medical institutions where training, performance management, and engagement initiatives have been shown to boost job satisfaction and consequently strengthen employee loyalty (Athamneh, 2024).

Regarding specific HRM dimensions, rewards and compensation have emerged as particularly significant. Research at Bunda Margonda Hospital demonstrated that education, training, and competence development significantly enhanced nurse performance, with rewards positively mediating this effect, highlighting the need for ongoing skill development and fair remuneration (Rianti et al., 2021). Aligned with Expectancy Theory, compensation and career development increase organizational commitment when employees perceive a clear link between effort, performance, and reward outcomes (Astuti et al., 2024). While some studies report that rewards significantly enhance loyalty (Abdullah et al., 2021), others find that monetary incentives have weak or non-significant direct effects (Aloysius, 2013), indicating mixed evidence on the compensation-loyalty relationship. Fair compensation, supportive work environments, and effective leadership collectively foster loyalty and positive employee attitudes (Sediqian, 2023), while nurse loyalty in healthcare is further influenced by workload, work-life balance, and compensation, with job satisfaction moderating these relationships (Basem et al., 2022).

Employee empowerment similarly presents a nuanced relationship with loyalty. Empowerment has been found to directly influence loyalty in certain contexts (Wulandari et al., 2021), with studies in Erbil confirming that employee empowerment and job satisfaction directly enhance loyalty through effective delegation and need fulfillment (Saleem and Sherwani, 2022). In the banking sector, empowerment, service quality, and retention strategies are identified as

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essential for financial performance (Mazahir and Rehman, 2021). A supportive work environment further boosts employee confidence, loyalty, and organizational citizenship behavior (Hermawati et al., 2023), while HRM practices that empower employees in decision-making strengthen motivation, retention, and organizational support (Yakut and Kara, 2022). However, other research identifies job satisfaction as a necessary mediating mechanism between empowerment and loyalty (Alkahtani et al., 2021).

Training and development have also shown both direct and indirect relationships with loyalty (Elsafty and Oraby, 2022). Training programs aligned with institutional needs significantly improve employee efficiency, emphasizing the importance of strategic HRM policies that correspond with organizational objectives (Abdullahi and Bunza, 2024). These mixed findings indicate a literature gap regarding the consistency and mechanism of HRM-loyalty relationships across contexts.

Moreover, much of the existing research has been conducted in banking, hospitality, telecom, or general healthcare sectors (Siregar, 2022) (Ghimire, 2024), with limited empirical evidence from healthcare education institutions in developing countries (Sackey and Selassie, 2022). Evidence from Yemen further suggests that HRM practices play a crucial role in employee retention, with job satisfaction mediating loyalty and reducing attrition, while compensation, supervision, and satisfaction significantly impact workforce stability in both academic and medical institutions (Alhebshi et al., 2025). In Lahore's medical institutions specifically, studies examining multiple HRM practices simultaneously and testing job satisfaction as a mediator remain scarce, despite growing recognition of HRM-leadership principles as critical for faculty retention globally (Stamouli and Gerbeth, 2021) (Hussain and Amanullah, 2024). This represents both a contextual and theoretical gap in understanding whether loyalty is shaped directly by HR practices or indirectly through satisfaction.

Theoretically, this study integrates SET (Homans, 1958) (Cropanzano et al., 2017), Herzberg's Two-Factor Theory, which suggests that job satisfaction is influenced by motivators and hygiene factors (Herzberg et al., 1959), and Maslow's Hierarchy of Needs (Maslow, 1943) to examine whether HRM practices generate loyalty directly or through job satisfaction as a psychological mechanism. Collectively, this body of research reinforces the critical role of HRM practices in promoting employee loyalty, job satisfaction, and productivity across sectors. Practically, the findings provide evidence-based guidance to medical institutions seeking to reduce turnover and strengthen faculty commitment in a resource-constrained environment.

### **Theoretical foundation and model justification**

This study integrates SET, Herzberg's Two-Factor Theory, and Maslow's Hierarchy of Needs to explain the direct and mediated relationships between HRM practices, job satisfaction, and employee loyalty.

SET posits that employees engage in reciprocal exchanges with their organization, where favorable treatment leads to positive behavioral responses such as loyalty (Homans, 1958) (Cropanzano et al., 2017). In this study, HRM practices, including recruitment and selection, training and development, rewards, and employee empowerment, represent organizational investments in employees. When employees perceive these practices as supportive and fair, they develop a sense of obligation and reciprocate through loyalty behaviors. This theoretical lens supports the direct relationship between HRM practices and employee loyalty, as well as the positive association between job satisfaction and loyalty.

Herzberg's Two-Factor Theory distinguishes between motivators, such as recognition, growth, and responsibility, and hygiene factors, such as salary and supervision (Herzberg et al., 1959) (Alrawahi et al., 2020), and is widely supported in job satisfaction research, with motivation factors consistently identified as more crucial in driving satisfaction (Alshmemri et al., 2017). In this study, HRM practices such as training and development and employee empowerment function as motivators, enhancing intrinsic satisfaction, whereas rewards operate as hygiene factors that prevent dissatisfaction but may not necessarily generate strong behavioral outcomes. This framework explains how HRM practices influence job satisfaction and further clarifies why satisfaction may act as a psychological mechanism linking HRM practices to employee loyalty.

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Maslow's Hierarchy of Needs provides an additional explanatory layer by suggesting that employees are motivated to fulfill both lower-order needs, such as job security and financial stability, and higher-order needs, such as esteem and self-actualization (Maslow, 1943) (Benson and Dundis, 2003). In this context, recruitment and rewards address lower-order needs, while training, development, and empowerment fulfill higher-order needs. The fulfillment of these needs enhances job satisfaction, which in turn strengthens employee loyalty.

Collectively, these theories provide a comprehensive explanation of the study framework by justifying both the direct effects of HRM practices on employee loyalty and the indirect effects through job satisfaction. While SET explains the reciprocal nature of employee responses, Herzberg's and Maslow's theories clarify the psychological mechanisms through which HRM practices influence satisfaction and subsequent loyalty.

### **Hypotheses development**

H1: HRM practices have a significant effect on employee's loyalty.

H1a: Recruitment & selection have a significant effect on employee's loyalty.

Effective recruitment ensures person-organization fit, which enhances long-term commitment (Veloso et al., 2021). While some studies confirm a positive association (Abbasi et al., 2022), limited evidence exists within healthcare education institutions in developing countries. Additionally, prior studies often treat recruitment as part of bundled HR systems rather than examining its independent effect (Assefa and Kassa, 2021). This gap justifies further empirical investigation.

H1b: Training & development have a significant effect on employee's loyalty.

Training enhances competence and engagement (Elsafty and Oraby, 2022). However, some research indicates that training influences loyalty indirectly through satisfaction or motivation (Siregar, 2022), while others suggest direct effects (Siddiqui, 2025). These mixed findings highlight uncertainty regarding its direct role, particularly in medical academia.

H1c: Rewards have a significant effect on employee's loyalty.

Rewards are traditionally viewed as drivers of retention (Abdullah et al., 2021). However, evidence also suggests that financial rewards alone may not guarantee loyalty (Aloysius, 2013). This inconsistency signals a theoretical gap regarding whether rewards directly influence loyalty or operate through satisfaction mechanisms.

H1d: Employee empowerment has significant effect on employee's loyalty.

Empowerment strengthens autonomy and engagement (Wulandari et al., 2021). Yet, other studies report that its effect is mediated by job satisfaction (Alkahtani et al., 2021). The absence of consensus, particularly in healthcare education settings, warrants further empirical testing.

H2: HRM practices have a significant effect on job satisfaction.

H2a: Recruitment & selection have a significant effect on job satisfaction.

Previous studies show that HRM practices enhance job satisfaction (Ismael et al., 2021) (Kumari et al., 2021). However, limited research simultaneously examines multiple HR dimensions within a unified framework in medical institutions. This fragmented approach leaves gaps in understanding the relative importance of different HR practices.

H2b: Training & development have a significant effect on job satisfaction.

Training and development significantly influence job satisfaction by enhancing employees' skills, knowledge, and competencies. Well-structured training programs contribute to a positive work environment, making employees feel more valued and engaged, ultimately leading to higher job satisfaction (Ismael et al., 2021).

H2c: Rewards have a significant effect on job satisfaction.

Rewards play a significant role in enhancing job satisfaction by fulfilling employees' intrinsic and extrinsic needs. Financial incentives serve as strong motivators, while non-monetary rewards such as recognition and appreciation contribute to a sense of fulfillment. When employees feel valued and acknowledged, their job satisfaction increases,

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leading to greater engagement and commitment (Kumari et al., 2021).

H2d: Employee empowerment has a significant effect on job satisfaction.

Employee empowerment has a significant effect on job satisfaction by fostering a sense of trust, autonomy, and commitment among employees. When employees are given more control over their tasks and decision-making, they feel valued and motivated, leading to higher job satisfaction. Additionally, empowerment strengthens organizational commitment, ultimately enhancing overall performance and productivity (Alkahtani et al., 2021).

H3: Job satisfaction mediates the influence of HRM practices on employee's loyalty.

H3a: Job satisfaction mediates the influence of recruitment & selection on employee's loyalty.

Job satisfaction mediates the influence of recruitment and selection on employee loyalty by enhancing employees' overall work experience and commitment. Effective recruitment and selection processes ensure a good job fit, which positively impacts job satisfaction. In turn, satisfied employees are more likely to remain loyal to the organization, demonstrating higher levels of engagement and performance (Alkandi et al., 2023).

H3b: Job satisfaction mediates the influence of training & development on employee's loyalty.

Job satisfaction mediates the influence of training and development on employee loyalty by enhancing employees' skills, confidence, and engagement. Effective training and development programs improve job competence, leading to greater job satisfaction, which in turn fosters higher employee loyalty and long-term commitment to the organization (Lestari et al., 2021).

H3c: Job satisfaction mediates the influence of rewards on employee's loyalty.

Monetary rewards have a weak direct impact on employee loyalty; however, job satisfaction plays a crucial role in strengthening this relationship. When employees are satisfied with their rewards, their commitment and loyalty toward the organization increase, making job satisfaction a significant mediator in this process (Aloysius, 2013).

H3d: Job satisfaction mediates the influence of employee empowerment on employee's loyalty.

Research on medical staff in Vietnam found that empowerment leadership enhances employee loyalty, with job satisfaction acting as a key mediator. Empowered employees experience higher job satisfaction, which strengthens their commitment to the organization (Pham, 2023). This highlights the crucial role of non-financial factors in fostering loyalty, especially in healthcare settings.

H4: Job satisfaction has a significant effect on employee's loyalty.

Research on Zain Telecommunication employees found a strong positive relationship between job satisfaction and employee loyalty. Job satisfaction, influenced by career development, motivation, and a positive work environment, fosters employee commitment and loyalty. Satisfied employees are more likely to stay dedicated to their organization, reinforcing the link between job satisfaction and employee loyalty (Ateeq et al., 2023).

## Research Method

### Research design and sampling

This study adopted a quantitative, cross-sectional research design with a deductive approach to test the proposed framework. A survey methodology was employed, utilizing an adopted questionnaire as the primary data collection instrument (Nazir et al., 2021).

The target population comprised faculty members working in medical institutions in Lahore. Focusing on academic staff (professors, lecturers, instructors, and clinicians involved in teaching) allowed the research to capture insights from the internal stakeholders most directly involved in the core mission of these institutions.

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A purposive sampling technique was used to select participants, aiming to include respondents who had sufficient experience with their institution's HR policies. The sample size was determined using the Krejcie and Morgan formula for finite population sampling, which recommended a sample size of around 346 for a population in the low thousands. Accordingly, 350 faculty members were targeted to ensure a robust sample size (Krejcie and Morgan, 1970). This sample size is considered adequate for the use of Partial Least Squares Structural Equation Modeling (PLS-SEM) and to generalize findings within the context. Survey responses were collected through an online questionnaire distributed via institutional email lists and professional networks. Participants were assured of confidentiality and anonymity to encourage honest and unbiased responses, aligning with research ethics protocols.

This study adhered to the ethical principles outlined in the Declaration of Helsinki and complied with the institutional research ethics guidelines relevant to social science research. It was entirely up to the participants whether they chose to take part. Before collecting data, all participants were informed about the purpose of the study, that their answers and data would be kept confidential, and that their responses would remain confidential. Before completing the online questionnaire, all participants provided informed consent. No information that could be used to identify a person was collected.

### Measures and instrumentation

The survey instrument consisted of structured items to measure each construct in the research model. Established scales from prior literature were adapted to the context of medical institutions for measuring HRM practices, job satisfaction, and employee loyalty (Park et al., 2017), (Parrey et al., 2019), (Khan et al., 2017), and (Khan et al., 2019). Specifically, each HRM practice was measured with multiple Likert-scale items (e.g., Recruitment & Selection - 5 items; Training & Development - 5 items; Rewards - 5 items; Employee Empowerment - 4 items) that capture the effectiveness and perception of those practices by employees. Job Satisfaction was measured with a 5-item scale reflecting employees' contentment with various facets of their job role and work environment. Employee Loyalty was assessed with a comprehensive 10-item scale covering dimensions such as commitment to the institution, intention to remain, and advocacy for the organization. All survey items were rated on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree), where higher scores indicate greater presence of the construct (e.g., higher perceived empowerment, higher satisfaction, higher loyalty).

To ensure content validity, the questionnaire was reviewed by HR academics and pilot-tested on a small group of faculty (n = 30) prior to full deployment. The reliability of the instrument was supported by prior studies from which the scales were adapted (each had reported Cronbach's alpha > 0.70 in those studies). In this study, internal consistency and validity of the scales were rigorously evaluated as part of the measurement model assessment (described in the Data Analysis section).

### Data analysis technique

PLS-SEM was chosen for data analysis, using the Smart PLS 4 software (Hair et al., 2021). PLS-SEM is appropriate for this research for several reasons. Following recommended practices, a two-step analytical approach was employed: first assessing the measurement model, and then evaluating the structural model.

## Results And Discussion

### Data analysis technique

PLS-SEM was chosen for data analysis, using the Smart PLS 4 software (Hair et al., 2021). PLS-SEM is appropriate for this research for several reasons. Following recommended practices, a two-step analytical approach was employed: first assessing the measurement model, and then evaluating the structural model.

Measurement model assessment: We evaluated indicator reliability, internal consistency reliability, convergent validity, and discriminant validity for all constructs (Hair et al., 2017). Indicator reliability was checked via the outer loadings of each survey item on its intended construct. Internal consistency was examined using Cronbach's alpha and Composite

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Reliability (CR). All constructs exceeded the recommended threshold of 0.70 for both Cronbach's alpha and CR, demonstrating satisfactory reliability. Convergent validity was assessed via the Average Variance Extracted (AVE) for each construct. After removing the aforementioned low-loading items, all AVE values met or exceeded the 0.50 benchmark.

Discriminant validity was confirmed through multiple criteria. First, the Fornell-Larcker criterion was satisfied. Second, all item cross-loadings were higher on their respective construct than on others. Third, the Heterotrait-Monotrait (HTMT) ratios were computed and found to be below the conservative threshold of 0.85 for all construct pairs.

Structural Model Assessment: The model's potential issues with multicollinearity were checked via Variance Inflation Factor values for the predictor constructs, all of which were well below the threshold of 5, indicating no multicollinearity concerns. The hypothesized paths were then examined by observing the path coefficients ( $\beta$ ), their significance levels ( $p$ -values), and  $t$ -statistics obtained through a bootstrapping procedure with 5,000 resamples (bias-corrected). The model's explanatory power was evaluated using the R-squared ( $R^2$ ) values for the endogenous constructs, and effect sizes ( $f^2$ ) were computed for significant paths to gauge their relative impact.

## Results

### *Descriptive Statistics of Respondents and Constructs*

The respondent pool consisted of faculty across various medical institutions in Lahore, including public and private medical colleges and teaching hospitals. Among the 350 faculty respondents, approximately 58% were male and 42% female. The majority were in the age range of 30-50 years. In terms of academic rank, around 40% were lecturers or instructors, 35% assistant professors, 20% associate professors or professors, and a small remainder were administrative faculty. The average tenure of respondents at their current institution was about 5.8 years, indicating a fairly experienced sample. These demographics suggest that the survey captured a broad cross-section of faculty members, lending credibility to the findings on loyalty and satisfaction.

Descriptive statistics for the key variables indicated generally high perceptions of HRM practice effectiveness and above-moderate levels of job satisfaction and loyalty. For instance, on a scale of 1 to 5, the mean values ( $\pm$ SD) were: Recruitment & Selection = 3.9 ( $\pm$ 0.8), Training & Development = 3.7 ( $\pm$ 0.9), Rewards = 3.5 ( $\pm$ 0.9), Employee Empowerment = 3.8 ( $\pm$ 0.8). Job Satisfaction averaged 3.8 ( $\pm$ 0.7) and Employee Loyalty 4.0 ( $\pm$ 0.7). These averages suggest that faculty overall feel positively about their institution's HRM practices and report fairly high loyalty, though the reward systems were rated somewhat lower relative to other practices. The moderate standard deviations indicate a reasonable spread of opinions, which is suitable for regression analysis. Table 1 presents the descriptive statistics and normality assessment of items for all study constructs measured on a 5-point Likert scale. The mean values of most items exceed 3, reflecting general agreement among respondents, while standard deviation values indicate moderate variability. Skewness and kurtosis values fall within acceptable ranges, confirming that the data distribution is approximately normal and suitable for further statistical analysis.

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Construct	Items	Mean	SD	Kurtosis	Skewness
Recruitment & Selection (RS)	RS1	3.218	1.069	-0.595	-0.261
	RS2	3.012	1.130	-0.877	-0.118
	RS3	3.672	0.982	0.631	-0.914
	RS4	2.792	1.181	-1.042	0.020
	RS5	3.169	1.167	-0.754	-0.294
Training & Development (TD)	TD1	3.767	0.794	1.598	-0.901
	TD2	3.491	0.975	0.320	-0.791
	TD3	3.519	0.962	0.306	-0.759
	TD4	3.794	0.848	1.691	-1.038
	TD5	3.610	0.910	0.593	-0.776
Rewards (R)	R1	4.010	1.136	0.354	-1.090
	R2	4.392	0.825	2.894	-1.584
	R3	2.357	1.247	-0.776	0.570
	R4	3.571	1.036	-0.152	-0.492
	R5	3.968	1.029	0.291	-0.896
Employee Empowerment (EE)	EE1	3.290	1.088	-0.512	-0.469
	EE2	3.268	1.063	-0.316	-0.526
	EE3	3.690	0.961	0.607	-0.877
	EE4	3.434	1.056	-0.211	-0.608
	EE5	3.141	1.115	-0.693	-0.152
Job Satisfaction (JS)	JS1	2.519	1.156	-0.992	0.250
	JS2	2.623	1.110	-0.695	0.305
	JS3	2.725	1.080	-0.748	0.174
	JS4	3.256	1.169	-0.689	-0.340

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	JS5	3.266	1.094	-0.618	-0.256
Employee Loyalty (EL)	EL1	4.037	0.819	1.461	-0.939
	EL2	3.749	0.904	1.001	-0.837
	EL3	3.943	0.865	1.487	-0.997
	EL4	3.859	0.853	0.869	-0.762
	EL5	3.151	1.093	-0.547	-0.338
	EL6	3.948	0.845	1.834	-1.064
	EL7	3.774	0.961	0.715	-0.830
	EL8	3.573	1.099	-0.132	-0.626
	EL9	3.809	0.969	0.910	-0.940
	EL10	4.027	0.886	1.721	-1.126

**TABLE 1: Descriptive Statistics and Normality Assessment of Measurement Items**

This table reports the mean, standard deviation, skewness, and kurtosis values for all measurement items used in the study. These statistics provide information regarding the distributional characteristics of the data.

#### *Measurement Model Results*

As described in the methodology, the measurement model demonstrated adequate reliability and validity, as presented in Table 2. All constructs exceeded the acceptable threshold for reliability ( $\alpha$  and CR > 0.70), confirming internal consistency. The highest reliability was observed for Employee Loyalty ( $\alpha = 0.921$ ), reflecting the robust measurement of this 10-item scale. Other constructs had reliability coefficients in the 0.85-0.90 range, except job satisfaction which was slightly lower ( $\alpha = 0.774$ ) but still within acceptable limits. The composite reliability values were similarly high, reinforcing the consistency of the indicators with their underlying latent variables.

Convergent validity was supported by AVE values all above 0.59 after the removal of two low-loading items.

These findings offer a nuanced understanding of how HRM practices function in this context, indicating that improving certain HRM areas can directly boost loyalty, but simply making employees “satisfied” in their jobs is not a sufficient or necessary pathway to loyalty in these institutions.

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Constructs	No of Items	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Employee Empowerment	4	0.904	0.905	0.933	0.777
Employee Loyalty	10	0.921	0.929	0.934	0.591
Job Satisfaction	4	0.774	0.814	0.852	0.594
Recruitment & Selection	5	0.853	0.862	0.895	0.632
Rewards	5	0.853	0.866	0.895	0.630
Training & Development	5	0.897	0.897	0.924	0.709

**TABLE 2: Reliability and Convergent Validity of Study Constructs**

This table presents the internal consistency reliability and convergent validity statistics for all study constructs. Cronbach's alpha, composite reliability ( $\rho_a$  and  $\rho_c$ ), and average variance extracted (AVE) were used to assess the measurement properties of the scales.

*Discriminant Validity (HTMT)*

Table 3 presents the HTMT values confirming discriminant validity, as all values fall below the 0.85 threshold, ranging from 0.114 (Job Satisfaction & Rewards) to 0.678 (Employee Empowerment & Training & Development).

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	Employee Empowerment	Employee Loyalty	Job Satisfaction	Recruitment & Selection	Rewards	Training & Development
Employee Empowerment						
Employee Loyalty	0.647					
Job Satisfaction	0.353	0.160				
Recruitment & Selection	0.643	0.531	0.281			
Rewards	0.304	0.252	0.114	0.189		
Training & Development	0.678	0.593	0.186	0.609	0.188	

**TABLE 3: Discriminant Validity Assessment Using Heterotrait-Monotrait Ratio (HTMT)**

This table presents the correlations among the latent constructs used to assess discriminant validity according to the Heterotrait-Monotrait Ratio (HTMT). Discriminant validity is established when each construct is empirically distinct from the others.

*Determination of Coefficient*

Table 4 presents the R<sup>2</sup> and Adjusted R<sup>2</sup> values, indicating weak-to-moderate predictive accuracy, with the model explaining 42.7% of variance in Employee Loyalty and 11.1% in Job Satisfaction, with Adjusted R<sup>2</sup> values closely aligned, confirming model fit is not inflated by predictors.

Variables	R-square	R-square adjusted
Employee Loyalty	0.427	0.420
Job Satisfaction	0.111	0.102

**TABLE 4: Coefficient of Determination (R<sup>2</sup>) of Endogenous Constructs**

This table presents the R<sup>2</sup> and adjusted R<sup>2</sup> values for the endogenous constructs, indicating the proportion of variance explained by the predictor variables in the structural model.

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## Discussion

The results of this study provide important insights into the dynamics between HRM practices, job satisfaction, and employee loyalty, with implications for both theory and practice. Several findings corroborate prior research, while others diverge, highlighting the role of context and the complexity of employee attitudes in the academic healthcare environment. Below, we interpret the key results in light of existing literature and discuss their broader significance.

**Employee Empowerment as a Driver of Loyalty:** Consistent with expectations and prior studies, employee empowerment emerged as a crucial determinant of loyalty. As shown in Table 5, the strong positive effect of empowerment on loyalty ( $\beta = 0.378$ ,  $p = 0.000$ ) and job satisfaction ( $\beta = 0.301$ ,  $p = 0.000$ ) aligns with the findings of Mohzana et al. (Mohzana et al., 2023) who also observed that empowering leadership and granting employees greater autonomy foster higher engagement and commitment, thereby strengthening loyalty. In our context, faculty members who feel empowered - for example, through involvement in departmental decisions or curriculum development - likely develop a stronger emotional attachment to their institution. Empowerment also had a significant positive impact on job satisfaction in this study, echoing the conclusions of Alkahtani et al. (Alkahtani et al., 2021).

However, the anticipated mediating role of job satisfaction in the empowerment-loyalty link was not supported here, which is an interesting divergence from some literature. For example, Pham (Pham, 2023) found that in a healthcare setting, job satisfaction significantly mediated the effect of empowerment on loyalty. It is possible that empowered faculty in Lahore's medical institutions feel loyal directly because they value the empowerment itself (e.g., feeling respected and valued by the administration), regardless of their general job satisfaction. Another consideration is that empowerment might interact with other cultural factors; in some contexts, empowerment may translate more readily into satisfaction and then loyalty, while in ours it translated directly into loyalty without needing the satisfaction step. This nuance contributes to theory by suggesting that empowerment's effect pathway can vary sometimes it is direct, other times it is indirect through satisfaction or other mediators like trust (as Pham's study also included employee trust as a mediator).

**Recruitment & Selection importance for loyalty, not for Job Satisfaction:** Table 5 confirms that recruitment and selection significantly predicted employee loyalty ( $\beta = 0.141$ ,  $p = 0.007$ ) but not job satisfaction ( $\beta = 0.120$ ,  $p = 0.053$ ), which is in line with prior evidence from different settings. Munaty et al. (Munaty et al., 2022) highlighted that fair and well-structured hiring practices enhance employee performance and satisfaction, ultimately boosting loyalty. Our study confirms that in a university/hospital context, when faculty perceive that their institution hires the right people (merit-based recruitment, clear selection criteria, and others), they develop a stronger commitment to stay (Khan, 2023).

**Training & Development-Direct Retention Benefits without Satisfaction Gains:** Table 5 reveals a significant positive link between training and development and employee loyalty ( $\beta = 0.231$ ,  $p = 0.000$ ), confirming the theoretical expectation that investing in employees' skills and career growth engenders a sense of commitment, though no significant effect on job satisfaction was observed ( $\beta = -0.075$ ,  $p = 0.307$ ). Elsafty and Oraby (Elsafty and Oraby, 2022) found that structured training programs increased employee retention in the Egyptian private sector, and our results align with this in a Pakistani academic health sector context. The lack of a significant effect of training on job satisfaction in our study, however, is somewhat unexpected and contrasts with some prior research. Ismael et al. (Ismael et al., 2021) suggested that training and development initiatives foster job satisfaction by increasing employees' competencies and engagement at work. Our findings did not show this benefit, which could imply a few things. It might be that the content or implementation of training in these institutions is not perceived as directly relevant or rewarding enough to impact day-to-day satisfaction.

**Rewards - Rethinking the Role of Incentives:** As presented in Table 5 one of the most striking outcomes is that the rewards system did not significantly influence either faculty loyalty ( $\beta = 0.073$ ,  $p = 0.100$ ) or job satisfaction ( $\beta = -0.021$ ,  $p = 0.760$ ), covering salary, bonuses, benefits, and recognition. This finding challenges conventional wisdom and several studies that underscore the importance of rewards. For instance, Abdullah et al. (Abdullah et al., 2021) and Kumari et al. (Kumari et al., 2021) both reported that a mix of financial and non-monetary rewards can improve job satisfaction and commitment.

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Hypotheses	$\beta$ -value	Std. error	t-value	p-values	R <sup>2</sup>	Decision
Employee Empowerment -> Employee Loyalty	0.378	0.057	6.684	0.000	0.427	Supported
Employee Empowerment -> Job Satisfaction	0.301	0.073	4.115	0.000		Supported
Job Satisfaction -> Employee Loyalty	-0.062	0.048	1.295	0.000		Supported
Recruitment & Selection -> Employee Loyalty	0.141	0.052	2.693	0.007		Supported
Recruitment & Selection -> Job Satisfaction	0.120	0.062	1.939	0.053		Not supported
Rewards -> Employee Loyalty	0.073	0.044	1.646	0.100		Not supported
Rewards -> Job Satisfaction	-0.021	0.068	0.306	0.760		Not supported
Training & Development -> Employee Loyalty	0.231	0.062	3.752	0.000		Supported
Training & Development -> Job Satisfaction	-0.075	0.074	1.022	0.307		Not supported

**TABLE 5: Structural Model Results and Hypothesis Testing**

This table reports the structural path coefficients ( $\beta$ ), standard errors, t-values, p-values, and hypothesis testing results obtained from the structural equation modeling analysis. The table also reports the coefficient of determination (R<sup>2</sup>) for endogenous variables.

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It is plausible that in public or non-profit medical institutions, extrinsic rewards are not the primary motivator for employees. Many faculty members may be driven by intrinsic factors such as passion for teaching/medicine, professional ethics, or the social impact of their work. Our results seem to echo that sentiment. Furthermore, the fact that job satisfaction did not mediate the (nonexistent) link between rewards and loyalty reinforces that offering rewards alone neither increases satisfaction nor loyalty strongly enough to detect. This contradicts studies like Ackah et al. (Ackah et al., 2025) who found that job satisfaction can strengthen the connection between compensation and retention.

**The Puzzling Case of Job Satisfaction and Loyalty:** Perhaps the most theoretically intriguing finding is the negative coefficient for the job satisfaction → loyalty relationship. This result diverges from the bulk of literature where job satisfaction and loyalty are positively related. Ateeq et al. (Ateeq et al., 2023), for example, found in a study of telecom employees that higher job satisfaction (fueled by factors like career development and motivation) led to greater employee loyalty and improved job performance. In our case, when controlling for the direct effects of specific HRM practices, those faculty who reported higher satisfaction were, if anything, slightly less likely to indicate strong loyalty, it raises interesting considerations. One interpretation is the “satisfaction paradox” in academic environments: highly satisfied faculty might be those who have achieved a lot (publishing, recognition, and are content in their role) and thus become attractive to competitors or confident in their mobility. Meanwhile, those less satisfied might paradoxically stay due to fewer external options or inertia. It is also possible the negative sign is an artifact of how the model accounts for variance: with empowerment, training, and others, in the model, perhaps a lot of the “positive” covariance between satisfaction and loyalty was already captured by the way those practices improve both outcomes, leaving a residual negative relation. In any case, this finding suggests that maximizing job satisfaction alone is not a foolproof strategy to retain faculty.

**Contextual Factors and Theoretical Implications:** The overall pattern of findings indicates that some classic HRM-outcome linkages hold in our context (empowerment, training, recruitment boosting loyalty) but others do not (rewards, satisfaction mediation). This mix suggests that contextual factors such as organizational culture, employee values, and industry norms significantly shape these relationships. In line with our hypothesis, this highlights a key theoretical contribution: HRM effectiveness is context-dependent, underscoring the need to tailor practices to specific organizational and cultural contexts.

#### *Practical Implications*

This study makes several important theoretical contributions.

First, it extends SET by demonstrating that HRM practices do not uniformly translate into reciprocal loyalty through job satisfaction. While SET suggests that positive organizational treatment leads to attitudinal and behavioral responses, the findings indicate that certain HRM practices, particularly employee empowerment and training, influence loyalty directly without the mediating role of job satisfaction. This suggests that reciprocity mechanisms may operate in a more immediate and direct manner in professional settings.

Second, the study refines Herzberg’s Two-Factor Theory by empirically distinguishing the effects of intrinsic and extrinsic HRM practices. The insignificant role of rewards supports the argument that hygiene factors may prevent dissatisfaction but are insufficient to generate stronger outcomes such as loyalty, whereas intrinsic factors such as empowerment play a more critical role in shaping employee attitudes.

Third, the study contributes to Maslow’s Hierarchy of Needs by demonstrating that higher-order need fulfillment, such as personal growth and autonomy, has a stronger influence on employee loyalty compared to lower-order needs such as financial rewards. This finding highlights the importance of intrinsic motivational factors in knowledge-intensive and academic environments.

Finally, the study challenges the commonly assumed mediating role of job satisfaction in HRM research by showing that satisfaction does not always function as a necessary mechanism linking HRM practices to loyalty. This suggests the need for future research to reconsider simplified mediation models and explore alternative pathways, including contextual and cultural influences, in explaining employee behavior.

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## Conclusions

In conclusion, this study reinforces some classic tenets of HRM's influence on employee attitudes while also challenging others. It underscores that employee loyalty in professional organizations like medical institutions is multi-faceted. HRM practices have the potential to strengthen loyalty directly, but managers should not rely on indirect effects via job satisfaction alone. Future strategies should be holistic - combining empowerment, fair processes, development opportunities, and a supportive culture - to cultivate a dedicated and stable faculty body that will enhance organizational performance and continuity.

Limitations: The use of a cross-sectional survey design means that all data were collected at one point in time, which limits causal inferences. Another limitation is the focus on faculty in medical institutions in one city, Lahore. The study also did not include external factors such as labor market conditions; during the time of data collection, if there were unique economic or industry dynamics, those could influence responses. Finally, while our model included a mediating variable, it is possible that a more complex model with multiple mediators or moderators would capture the phenomena more fully. We encourage caution in interpreting the negative satisfaction-loyalty link until further research can verify it and explain the mechanism.

Future research directions: While this study provided valuable insights, it also opened several avenues for future investigation. Researchers could explore additional mediators or moderators in the HRM-loyalty relationship. Additionally, conducting longitudinal studies would be beneficial to examine how these relationships evolve over time. Another area for future work is comparative studies: comparing the findings from Lahore's medical institutions with other regions or sectors. Furthermore, qualitative research could complement these quantitative findings. Conducting interviews or focus groups with faculty could unravel why, for instance, satisfaction did not translate to loyalty in some cases - perhaps revealing motivational nuances or concerns not captured by the survey. Qualitative insights might also illuminate what specific aspects of empowerment or training programs faculty value most, guiding more effective HR interventions.

## Appendices

### SURVEY QUESTIONNAIRE

The Mediating Role of Job Satisfaction in the Relationship Between HRM Practices and Employee Loyalty: A Study of Medical Institutions in Lahore

#### Gender

Male

Female

#### Age

18-25

26-35

36-45

46-55

Above 55

#### Academic qualification

MBBS

MBBS/M.Phil

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MBBS/FCPS/FRCs

MBBS/M.Phil/PhD

Others

#### **Work experience**

1 or less than 1 year

2-5 years

6-10 years

11-15 years

16 years or above

#### **Designation**

Lecturer / Demonstrator / Registrar / MO / WMO

Assistant professor

Associate professor

Professor

#### **RESPONSE SCALE**

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

#### **RECRUITMENT & SELECTION (RS)**

Recruitment is the process of generating a pool of capable people to apply for employment to an organization, while selection involves gathering information to evaluate and decide who should be employed in particular jobs." (Bratton and Gold, 2017) (Armstrong and Taylor, 2020)

SR1: The recruitment and selection processes in this institution are impartial.

SR2: Favoritism is not evident in any of the recruitment decisions made here.

SR3: Interview panels are used during the recruitment and selection process in this institution.

SR4: This institution does not need to pay more attention to the way it recruits people.

SR5: All appointments in this institution are based on merit (i.e., the best person for the job is selected regardless of their personal characteristics).

#### **TRAINING & DEVELOPMENT (TD)**

"Training enhances employees' skills, knowledge, and performance through structured organizational efforts to bridge skill gaps." (SHRM, 2023)

TG1: The training will help me resolve substantive matters in the workplace.

TG2: The trainer gave me evaluation and feedback about my learning after the training.

TG3: The training focused on the problems to be resolved in the workplace.

TG4: The training helps me improve my work capability.

TG5: The training matches my work requirements.

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### **REWARDS (R)**

"Rewards are incentives, monetary or non-monetary, aimed at motivating employees and aligning their efforts with organizational goals." ([Management 3.0, 2023](#))

RS1: I like management to give rewards when staff do a good job.

RS2: I believe pay levels should be increased.

RS3: I believe the current level of pay is sufficient for the number of hours worked.

RS4: The employer should increase penalty rates to compensate for unusual working hours.

RS5: I would work harder if I were paid more.

### **EMPLOYEE EMPOWERMENT (EE)**

"Empowerment gives employees the authority and resources to make decisions, fostering engagement and ownership." ([Management 3.0, 2023](#))

EE1: I feel that I am valued by management/my institution.

EE2: I feel my ideas are listened to and acted upon by management.

EE3: In my job, I feel that I am part of a team.

EE4: I am given the opportunity to give feedback on patients' needs and wants to management.

EE5: Management does not recognize the efforts I make.

### **JOB SATISFACTION (JS)**

"Job satisfaction reflects employees' contentment with their role, influenced by factors like work conditions, recognition, and growth opportunities." ([BetterUp, 2023](#))

JS1: I feel I am being paid a fair amount for the work I do.

JS2: I am not satisfied with the benefits I receive.

JS3: Many of our rules and procedures make doing a good job difficult.

JS4: Those who do well on the job stand a fair chance of being promoted.

JS5: The goals of this organization are not clear to me.

### **EMPLOYEE LOYALTY (EL)**

"Loyalty is the emotional commitment of employees to their organization, marked by advocacy, effort, and alignment with company values." ([Shiftbase, 2023](#)) ([HRDQ Store, 2023](#))

EL1: I am enthusiastic about my job.

EL2: Defends the organization when other employees criticize it.

EL3: Shows pride when representing the organization in public.

EL4: Actively promotes the organization's products, facilities, and services to potential users.

EL5: Remaining in this institution even for a lower salary.

EL6: Making a greater effort to succeed in this institution.

EL7: Recommending this institution to others as a place to work.

EL8: I am happy to work at my institution until I retire.

EL9: I am proud to be an employee of this institution.

EL10: I feel loyalty toward this institution.

## **Additional Information**

### **Author Contributions**

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

**Concept and design:** Muhammad Farooq, Muhammad Waqas

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**Acquisition, analysis, or interpretation of data:** Muhammad Farooq, Muhammad Waqas

**Drafting of the manuscript:** Muhammad Farooq

**Critical review of the manuscript for important intellectual content:** Muhammad Farooq, Muhammad Waqas

**Supervision:** Muhammad Waqas

## Disclosures

**Human subjects:** Consent was obtained or waived by all participants in this study. Research Ethics Committee (ERC) Minhaj University, Lahore issued approval (MUL/CRD/26/01). This study involves human participants. Data were collected from employees of medical institutions in Lahore through structured questionnaires. Prior to participation, respondents were informed about the purpose of the study, and their participation was voluntary. Informed consent was obtained from all participants. Confidentiality and anonymity of the respondents were strictly maintained, and the data were used solely for academic and research purposes. This study underwent formal ethical review. At Minhaj University, the Board of Advanced Studies and Research (BOASAR) serves as the institutional ethics committee, operating under the national ethical framework provided by the Higher Education Commission (HEC) of Pakistan. The research protocol and instruments were submitted to BOASAR for evaluation. Upon approval of the draft proposal, BOASAR authorized the commencement of data collection with the explicit stipulations that: (1) informed consent must be secured from all participants, and (2) data collected must be used strictly for academic and educational purposes. **Animal subjects:** All authors have confirmed that this study did not involve animal subjects or tissue. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

## Data Availability Statements

The datasets (and/or code) supporting this study are available from the corresponding author upon reasonable request.

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