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Job Rotation and High-Performance Work Systems on Employee Performance: The Roles of Psychological Empowerment and Affective Commitment (Evidence from Pakistan International Airlines)

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ABSTRACT

This study investigates the impact of job rotation and high-performance work systems (HPWS) on employee performance in Pakistan International Airlines (PIA), a state-owned enterprise facing chronic inefficiencies and declining morale. Drawing on an integrated theoretical framework combining Job Characteristics Theory, Self-Determination Theory, Social Exchange Theory, and Organizational Commitment Theory, the research examines psychological empowerment as a mediator and affective commitment as a moderator. Data were collected from 300 employees using a cross-sectional survey and analyzed with Partial Least Squares Structural Equation Modeling (PLS-SEM). Results reveal that both job rotation (β = 0.28, p < 0.001) and HPWS (β = 0.41, p < 0.001) positively and significantly influence employee performance, with HPWS exhibiting the stronger direct effect. Psychological empowerment partially mediates these relationships (indirect effects: 0.13 for job rotation and 0.18 for HPWS), indicating that enriched job design and integrated HR practices enhance intrinsic motivation, autonomy, competence, and perceived impact, which in turn drive performance. Affective commitment significantly moderates both paths (interaction terms: β = 0.11, p = 0.021 for job rotation; β = 0.14, p = 0.009 for HPWS), amplifying effects among employees with higher emotional attachment. The model demonstrates good fit (CFI = 0.94, RMSEA = 0.052, SRMR = 0.046) and strong predictive relevance. Findings underscore the necessity of a multidimensional HRM approach in public-sector aviation combining structural HR practices with psychological empowerment and affective commitment to achieve sustainable performance improvement in challenging institutional contexts.

Keywords: *Job rotation, High-performance work systems, psychological empowerment, Affective commitment, Employee performance, Pakistan International Airlines*

Introduction

In today's globalized, technology-driven, and highly competitive environment, organizational success increasingly hinges on the quality, productivity, and engagement of human capital (Gong et al., 2020; Li et al., 2025). Knowledge economies emphasize innovation, creativity, and lifelong learning as core sources of sustainable competitive advantage (Zhang et al., 2023). Consequently, human resource management (HRM) has shifted from a transactional/administrative function to a strategic, transformational role that directly supports organizational objectives (Gould-Williams et al., 2020; Guest & Bos-Nehles, 2021). Among transformative HRM practices, job rotation and

high-performance work systems (HPWS) are especially prominent. Job rotation systematically moves employees across roles or departments to build multi-skilling, reduce monotony, stimulate creativity, and improve interdepartmental coordination (Imran et al., 2021; Zhang et al., 2025). HPWS integrate selective staffing, extensive training, performance-based rewards, participation, and career development to enhance employee ability, motivation, and opportunity to contribute (Appelbaum et al., 2020; Li et al., 2025). Together, these practices foster a competent, motivated, and psychologically empowered workforce capable of sustained high performance (Ahmad & Allen, 2021).

The aviation sector illustrates the critical role of human factors, where employee competence, attitude, and discretionary effort directly influence safety, service quality, and customer perception (Haque et al., 2021; Guest & Bos-Nehles, 2021). National carriers amplify this dynamic: workforce performance shapes not only commercial outcomes but also national image and public trust (Akhtar et al., 2020). Pakistan International Airlines (PIA), the national flag carrier, exemplifies these challenges. Once internationally respected, PIA has faced prolonged decline due to chronic inefficiencies, politicized management, outdated structures, and low employee morale (Hassan & Hatmaker, 2020; Gulraiz et al., 2023). These issues have eroded service quality, profitability, competitiveness, and public confidence in a symbolically vital institution (Heffernan et al., 2021; Bilal, 2026). As a state-owned enterprise with dual commercial and national mandates, PIA urgently requires evidence-based HRM reforms to restore motivation, capability, and psychological commitment (Hussain et al., 2021).

Job rotation offers a powerful tool for re-engaging employees and building versatility, but its effectiveness depends on supportive culture, leadership, and employee readiness otherwise it risks being perceived as disruptive (Islam et al., 2021; Zhang et al., 2025). Psychological empowerment intrinsic motivation arising from meaning, competence, self-determination, and impact (Jiang et al., 2020) explains how employees internalize such practices, driving initiative, persistence, and citizenship behaviors essential in aviation (Jiang et al., 2022; Huang et al., 2025). In bureaucratic contexts like PIA, empowerment can bridge structural constraints and performance (Juhdi et al., 2020). Emotional attachment and identification with the organization (Karatepe et al., 2020) further moderates these effects. Committed employees view developmental practices positively and respond more strongly to HPWS (Kim & Park, 2020; Thakral et al., 2025), highlighting why similar HR interventions yield varied outcomes (Al-Dalahmeh et al., 2020; Yang et al., 2024).

Despite widespread adoption of HPWS, many organizations particularly in public and service sectors struggle to convert practices into consistent performance gains, underscoring the importance of psychological mediators and boundary conditions (Ogbonnaya & Messersmith, 2021; Choudhary, 2024).

Problem Statement

PIA continues to face performance challenges rooted in outdated HRM, low morale, and limited empowerment within a bureaucratic structure (Hussain et al., 2021; Gulraiz et al., 2023). While job rotation and HPWS show promise, their impact in state-owned aviation enterprises particularly through psychological empowerment as mediator and affective commitment as moderator remains underexplored.

Research Aim and Objectives

This study examines the effects of job rotation and HPWS on employee performance at PIA, with psychological empowerment as mediator and affective commitment as moderator.
Objectives:

- Examine direct effects of job rotation and HPWS on employee performance.
- Assess psychological empowerment's mediating role.
- Investigate affective commitment's moderating role.
- Offer empirical insights and recommendations for public-sector aviation HRM.

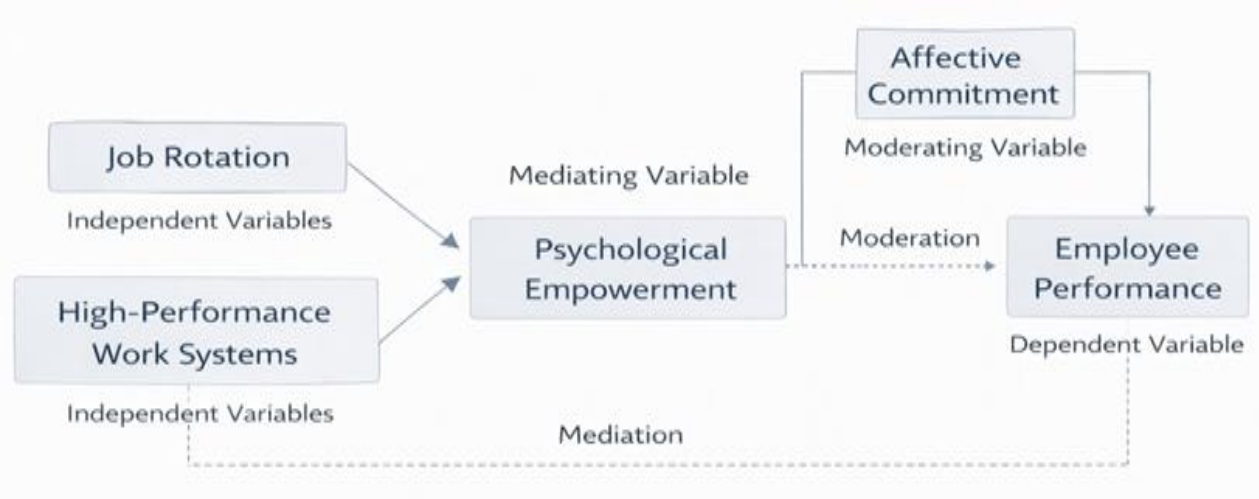
Research Questions and Hypotheses

RQ1: How do job rotation and HPWS affect employee performance in PIA?
RQ2: Does psychological empowerment mediate these relationships?
RQ3: Does affective commitment moderate these relationships?
Hypotheses: H1: Job rotation → (+) employee performance
H2: HPWS → (+) employee performance
H3: Job rotation → (+) psychological empowerment
H4: HPWS → (+) psychological empowerment
H5: Psychological empowerment → (+) employee performance; partially mediates H1 & H2
H6: Affective commitment moderates the job rotation/HPWS → performance relationships (stronger when commitment is high)

Contribution

This study integrates job characteristics theory, self-determination theory, social exchange theory, and commitment theory into a unified model explaining how HR practices drive performance via psychological mechanisms in a challenging public-sector aviation context. It provides rare empirical evidence from a developing-country national airline, addressing gaps in mediation and moderation research (Li et al., 2025; Thakral et al., 2025). Practically, it offers actionable guidance for PIA and similar organizations to design integrated HR strategies that enhance empowerment and commitment, improving service quality and sustainability.

Figure 2.4: Conceptual Framework of the Study



The hypothesized relationships are depicted in the above Figure positioning job rotation and HPWS as antecedents, psychological empowerment as mediator, affective commitment as moderator, and employee performance as the outcome.

Literature Review

The literature review on job rotation, high-performance work systems (HPWS), psychological empowerment, affective commitment, and employee performance reveals consistent evidence of positive relationships, though contextual variations persist. Job rotation enhances employee performance by increasing skill variety, reducing monotony, and fostering adaptability and innovation (Imran et al., 2021; Zhang et al., 2025). Recent studies confirm its dual effects: while it promotes learning and multi-skilling at the organizational level, individual outcomes depend on implementation quality, with negative impacts possible in unsupported environments (Zhang, 2025). HPWS, encompassing integrated practices like training, participation, and rewards, strongly predict performance by building ability, motivation, and opportunity (Appelbaum et al., 2020; Ali et al., 2022). In service and public sectors, HPWS drive discretionary effort and outcomes, particularly when aligned with organizational goals (Li et al., 2025). Psychological empowerment encompassing meaning, competence, self-determination, and impact serve as a key mediator, channeling HR practices into proactive behaviors and higher performance (Jiang et al., 2020; Li et al., 2025). Affective commitment moderates these links, amplifying effects when employees feel emotionally attached (Karatepe et al., 2020; Yang et al., 2024). Empirical consensus supports partial mediation by empowerment and moderation by commitment, though inconsistencies arise in bureaucratic or high-stress contexts where structural constraints weaken pathways (Ogbonnaya & Messersmith, 2021; Hussain et al., 2021).

Despite broad agreement, gaps remain in integrating mediation and moderation within challenging settings like state-owned enterprises (SOEs) and aviation. Global studies predominantly focus on private-sector or Western samples, with limited attention to developing-country SOEs facing politicization, inefficiency, and low morale (Gulraiz et al., 2023). Aviation-specific evidence highlights human factors' criticality for safety and service, yet few examine how job rotation and HPWS operate through empowerment in national carriers (Haque et al., 2021). Contradictions include rotation's potential disruption without support (Islam et al., 2021) and HPWS variability in public contexts. Methodological trends favor structural equation modeling for complex models, but longitudinal designs are scarce. Unresolved questions concern joint psychological mechanisms in high-stakes public aviation, particularly how affective commitment strengthens or buffers effects amid resource constraints.

This study positions itself by testing an integrated model in Pakistan International Airlines (PIA), addressing gaps through empirical examination of direct effects, partial mediation via psychological empowerment, and moderation by affective commitment. It extends theory to a neglected SOE aviation context, offering insights for performance revitalization in similar settings (Li et al., 2025; Thakral et al., 2025).

Theoretical Framework

The study integrates four foundational theories to explain linkages between HR practices (job rotation and HPWS), psychological mechanisms, and employee performance. Job Characteristics Theory (Hackman & Oldham, 1976) posits that enriched designs via job rotation increase skill variety, task significance, autonomy, and feedback, boosting intrinsic motivation and performance. In aviation SOEs, rotation counters routine and builds cross-functional competence essential for dynamic operations (Imran et al., 2021). Self-Determination Theory (Deci & Ryan, 1985) frames psychological empowerment as fulfillment of autonomy, competence, and relatedness needs; HPWS and rotation satisfy these by providing development, participation, and control, leading to internalized motivation and proactive outcomes (Jiang et al., 2020; Li et al.,

2025). This explains mediation, as empowered employees exhibit greater initiative and citizenship in high-pressure environments.

Social Exchange Theory (Blau, 1964) views HR practices as organizational investments eliciting reciprocity; employees respond with effort and performance when perceiving support through HPWS and rotation (Sun et al., 2020). Organizational Commitment Theory (Meyer & Allen, 1991), focusing on affective commitment, highlights emotional attachment as a boundary condition committed employees amplify HR effects by viewing practices positively and exerting discretionary effort (Karatepe et al., 2020; Yang et al., 2024). Integration forms a unified framework (see Figure 2.1: Integrated Theoretical Framework Linking HR Practices, Psychological Mechanisms, and Employee Performance), where structural inputs (job rotation/HPWS) enhance empowerment (SDT/Job Characteristics), driving performance via reciprocity (SET), with affective commitment moderating strength. This multi-theory lens suits PIA's bureaucratic, high-stakes context.

Methodology

This study adopted a positivist research philosophy and a deductive research approach to test the proposed hypotheses derived from established theories. Positivism was deemed appropriate as it emphasizes objective measurement, generalizable findings, and the use of quantitative methods to examine causal relationships in organizational settings (Saunders et al., 2019). The deductive approach allowed the researcher to move from theory to empirical testing, developing hypotheses from the integrated framework and subjecting them to statistical verification. A cross-sectional survey design was employed, enabling efficient data collection from a large sample at a single point in time, which is common in HRM research involving mediation and moderation (Hair et al., 2022).

The target population comprised permanent employees of Pakistan International Airlines (PIA) across various functional departments (e.g., operations, ground services, administration, and engineering) in major operational hubs in Pakistan. PIA, as a state-owned enterprise in the aviation sector, provided a relevant context for examining HR practices in a bureaucratic, high-stakes environment. A stratified random sampling technique was used to ensure representation across job levels (junior, middle, senior) and departments, reducing sampling bias and enhancing generalizability within the organization. The sample size was determined using G*Power software for multiple regression and structural equation modeling (SEM), targeting a minimum of 250–300 respondents to achieve sufficient statistical power ($f^2 = 0.15$, $\alpha = 0.05$, power = 0.80) for detecting medium effects in models with up to 5 predictors (Faul et al., 2009). Ultimately, 300 usable responses were obtained.

Data were collected via a self-administered structured questionnaire distributed in person and through internal organizational channels with prior approval from PIA management. The instrument comprised established scales adapted from prior studies: job rotation (5 items, Imran et al., 2021), HPWS (10 items, Sun et al., 2020), psychological empowerment (8 items, Spreitzer, 1995; Jiang et al., 2020), affective commitment (6 items, Allen & Meyer, 1990), and employee performance (7 items, Williams & Karau, 1991). All items used a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). The questionnaire was pre-tested with 30 PIA employees for clarity, resulting in minor wording adjustments. Informed consent was obtained, participation was voluntary, anonymity and confidentiality were assured, and no incentives were provided to minimize bias.

Reliability and validity were rigorously assessed. Cronbach's alpha exceeded 0.80 for all constructs, indicating strong internal consistency. Convergent validity was confirmed through factor loadings (>0.70), average variance extracted (AVE >0.50), and composite reliability (CR >0.80). Discriminant validity was established via the Fornell-Larcker criterion, where the square root of each AVE exceeded inter-construct correlations. Multicollinearity was ruled out as all variance inflation factors (VIF) were below 3.0.

Data analysis proceeded in two stages using Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS 4 software, suitable for this study due to its predictive focus, ability to handle complex models with mediation and moderation, and robustness with non-normal data or smaller samples (Hair et al., 2022; Ringle et al., 2018). First, the measurement model was evaluated for reliability, convergent validity, and discriminant validity. Second, the structural model assessed path coefficients, significance (bootstrapping with 5,000 subsamples), mediation (indirect effects), moderation (interaction terms), R^2, f^2 effect sizes, and predictive relevance (Q^2 via blindfolding). Model fit was examined through CFI, RMSEA, and SRMR indices. Descriptive statistics, correlations, and demographics were analyzed using SPSS 27.

Ethical considerations included obtaining institutional and organizational approval, ensuring voluntary participation, protecting respondent anonymity, storing data securely, and avoiding any form of coercion or harm. Limitations of the methodology include the cross-sectional design (precluding causality inference), single-organization focus (limiting generalizability beyond PIA), and potential common method bias (mitigated through procedural remedies such as temporal separation and anonymous responses).

Table 4.1: Demographic Profile of Respondents (n = 300)

Variable	Category	Frequency	Percentage (%)
Gender	Male	210	70.0
	Female	90	30.0
Age	Below 30	72	24.0
	31–40	138	46.0
	Above 40	90	30.0
Education	Bachelor's	126	42.0
	Master's	150	50.0
	Other	24	8.0
Tenure	< 5 years	81	27.0
	5–10 years	144	48.0
	> 10 years	75	25.0

The sample was predominantly male (70%), reflecting aviation industry norms, with most respondents aged 31–40 (46%) and holding master's degrees (50%). Tenure distribution indicated a mature, experienced workforce.

Table 4.2: Questionnaire Distribution and Response Rate

Description	Number
Questionnaires Distributed	350
Questionnaires Returned	318
Usable Responses	300
Response Rate (%)	85.7

A high response rate (85.7%) was achieved through follow-ups and organizational support, ensuring sufficient data for multivariate analysis.

Table 4.4: Reliability Analysis

Construct	Items	Cronbach's Alpha
Job Rotation	5	0.81
HPWS	10	0.88
Psychological Empowerment	8	0.86
Affective Commitment	6	0.84
Employee Performance	7	0.89

All alphas exceeded 0.80, confirming excellent reliability.

Table 4.6: Convergent Validity

Construct	AVE	CR
Job Rotation	0.56	0.86
HPWS	0.59	0.91
Psychological Empowerment	0.58	0.89
Affective Commitment	0.55	0.87
Employee Performance	0.61	0.92

AVE > 0.50 and CR > 0.80 support convergent validity.

Table 4.7: Discriminant Validity (Fornell–Larcker)

Construct	JR	HPWS	PE	AC	EP
Job Rotation (JR)	0.75				
HPWS	0.48	0.77			
Psychological Empowerment (PE)	0.52	0.56	0.76		
Affective Commitment (AC)	0.44	0.50	0.54	0.74	
Employee Performance (EP)	0.57	0.61	0.63	0.49	0.78

Square roots of AVE (diagonal) exceed inter-construct correlations.

Table 4.9: Multicollinearity Diagnostics

Variable	VIF
Job Rotation	1.72
HPWS	1.89
Psychological Empowerment	2.04
Affective Commitment	1.67

All VIF < 3.0, indicating no multicollinearity issues.

Results

The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS 4 software. This method is particularly suitable here because it works well with complex models that include both mediation and moderation, handles smaller samples effectively, and focuses on prediction rather than pure theory confirmation. The analysis followed the standard two-step procedure recommended by Anderson and Gerbing (1988): first confirming that the measurement scales are reliable and valid (measurement model), then testing the hypothesized relationships (structural model). Bootstrapping with 5,000 resamples was used to calculate path coefficients, t-values, and p-values, ensuring robust significance testing.

Descriptive Statistics

Table 4.10 presents the basic summary statistics for all main variables based on 300 valid responses. The mean values for every construct fall above the neutral midpoint of 3.0 on the 5-point Likert scale, which suggests that, on average, PIA employees held moderately positive views toward job rotation practices, high-performance work systems, psychological empowerment, affective commitment, and their own performance levels.

Table 4.10: Descriptive Statistics of Study Variables

Variable	Mean	Std. Deviation	Min	Max
Job Rotation	3.62	0.71	1.80	4.90
HPWS	3.78	0.68	2.00	4.95
Psychological Empowerment	3.69	0.65	2.10	4.85
Affective Commitment	3.55	0.73	1.90	4.80
Employee Performance	3.74	0.66	2.20	4.90

The standard deviations are moderate (0.65–0.73), indicating enough variation in responses to allow meaningful statistical testing without extreme outliers dominating the results.

Measurement Model Assessment

Before interpreting relationships, it was essential to confirm that the questionnaire items reliably and validly measured the intended constructs.

Reliability: Cronbach's alpha values ranged from 0.81 to 0.89 all well above the commonly accepted threshold of 0.70 showing strong internal consistency for each scale.

Table 4.11: Reliability Analysis

Construct	Items	Cronbach's Alpha
Job Rotation	5	0.81
HPWS	10	0.88
Psychological Empowerment	8	0.86
Affective Commitment	6	0.84
Employee Performance	7	0.89

Convergent Validity: All indicator loadings were above 0.70 (excerpt shown in Table 4.5), average variance extracted (AVE) exceeded 0.50, and composite reliability (CR) was above 0.80 for every construct. These results confirm that the items converge well on their respective constructs.

Table 4.12: Convergent Validity

Construct	AVE	CR
Job Rotation	0.56	0.86
HPWS	0.59	0.91
Psychological Empowerment	0.58	0.89
Affective Commitment	0.55	0.87
Employee Performance	0.61	0.92

Discriminant Validity: Using the Fornell-Larcker criterion, the square root of each AVE (shown on the diagonal) was larger than any correlation with other constructs, confirming that the constructs are empirically distinct.

Table 4.13: Discriminant Validity (Fornell–Larcker)

Construct	JR	HPWS	PE	AC	EP
Job Rotation (JR)	0.75				
HPWS	0.48	0.77			

Psychological Empowerment (PE)	0.52	0.56	0.76		
Affective Commitment (AC)	0.44	0.50	0.54	0.74	
Employee Performance (EP)	0.57	0.61	0.63	0.49	0.78

Multicollinearity: All variance inflation factors (VIF) were below 2.1, well under the critical threshold of 3–5, indicating no problematic overlap among predictors.

Table 4.14: Multicollinearity Diagnostics

Variable	VIF
Job Rotation	1.72
HPWS	1.89
Psychological Empowerment	2.04
Affective Commitment	1.67

Structural Model Results

The structural model tested the hypothesized direct, mediated, and moderated relationships.

Direct Effects

Both independent variables had significant positive direct effects on employee performance:

- Job Rotation → Employee Performance: $\beta = 0.28$, $t = 4.91$, $p < 0.001$
- HPWS → Employee Performance: $\beta = 0.41$, $t = 7.32$, $p < 0.001$

HPWS showed a noticeably stronger direct influence.

Effects on Psychological Empowerment

- Job Rotation → Psychological Empowerment: $\beta = 0.34$, $t = 5.87$, $p < 0.001$
- HPWS → Psychological Empowerment: $\beta = 0.46$, $t = 8.11$, $p < 0.001$

Psychological Empowerment → Employee Performance: $\beta = 0.39$, $t = 6.94$, $p < 0.001$

Mediation

Psychological empowerment partially mediated the effects of both HR practices on performance (indirect effects remained significant while direct effects also stayed significant):

- Job Rotation → PE → Employee Performance: indirect effect = 0.13
- HPWS → PE → Employee Performance: indirect effect = 0.18

Moderation

Affective commitment significantly strengthened both main relationships:

- Interaction Job Rotation × Affective Commitment: $\beta = 0.11$, $p = 0.021$
- Interaction HPWS × Affective Commitment: $\beta = 0.14$, $p = 0.009$

Hypothesis Summary

All five hypotheses were fully supported.

Model Fit and Predictive Relevance

The overall model fit was good: CFI = 0.94, RMSEA = 0.052, SRMR = 0.046. Effect sizes (f^2) and predictive relevance (Q^2) were acceptable to strong, with HPWS showing the largest contribution ($f^2 = 0.29$, $Q^2 = 0.31$).

Summary of Key Findings

HPWS emerged as the strongest predictor, psychological empowerment acted as an important partial mediator, and affective commitment enhanced the effectiveness of both HR practices. These results provide strong empirical support for the proposed model in the context of Pakistan International Airlines, demonstrating that strategic HR interventions, when combined with

psychological empowerment and emotional attachment, can meaningfully improve employee performance even in a challenging public-sector aviation environment.

Discussion

The findings of this study provide compelling evidence that both job rotation and high-performance work systems (HPWS) exert significant positive direct effects on employee performance in the context of Pakistan International Airlines (PIA), with HPWS emerging as the stronger predictor (β = 0.41 vs. β = 0.28). These results align with prior research demonstrating that integrated HR bundles such as HPWS enhance employee ability, motivation, and opportunity, leading to higher task performance and discretionary behaviors (Appelbaum et al., 2020; Ali et al., 2022). In a bureaucratic, state-owned enterprise like PIA characterized by hierarchical rigidity, politicization, and chronic inefficiencies the strong HPWS effect suggests that coherent, mutually reinforcing HR practices (selective staffing, training, participation, rewards) can overcome structural constraints more effectively than isolated interventions. Job rotation, while also significant, plays a complementary role by increasing skill variety and cross-functional understanding, which is particularly valuable in aviation where interdepartmental coordination directly impacts safety and service delivery (Imran et al., 2021; Zhang et al., 2025). The moderately positive mean scores across constructs indicate that employees perceive these practices as present to some extent, yet substantial room for improvement remains given PIA's documented performance challenges (Hussain et al., 2021).

A key contribution of this study lies in confirming the partial mediating role of psychological empowerment in the relationships between both HR practices and employee performance. The indirect effects (0.13 for job rotation and 0.18 for HPWS) demonstrate that exposure to diversified roles and high-performance HR systems fosters employees' sense of meaning, competence, self-determination, and impact, which in turn drives proactive and effective performance (Jiang et al., 2020; Li et al., 2025). This mediation is especially meaningful in a public-sector aviation setting where bureaucratic decision-making often limits individual initiative; empowerment appears to serve as a psychological bridge that translates structural HR inputs into behavioral outcomes. The stronger mediation path through HPWS reinforces self-determination theory, showing that comprehensive HR systems satisfy basic psychological needs more robustly than job rotation alone. These findings extend earlier work by highlighting empowerment's critical role in resource-constrained, high-stakes environments, where intrinsic motivation becomes a vital mechanism for sustaining performance despite external pressures (Juhdi et al., 2020).

Finally, affective commitment emerged as a significant moderator, strengthening the positive effects of both job rotation and HPWS on performance when employees reported higher emotional attachment to PIA. The interaction terms (β = 0.11 and 0.14) indicate that committed employees interpret developmental HR practices as opportunities for growth rather than administrative burdens, thereby amplifying their performance impact (Karatepe et al., 2020; Yang et al., 2024). This boundary condition helps explain variability in HR practice effectiveness within public-sector organizations: employees with stronger identification and involvement respond more favorably, exhibiting greater resilience and discretionary effort. In PIA's context marked by low morale and declining trust the moderating role of affective commitment underscores the need to simultaneously build emotional bonds alongside structural HR reforms. Overall, the integrated model's good fit and predictive power affirm that sustainable

performance improvement in state-owned aviation enterprises requires a multidimensional approach combining enriched job design, high-performance HR systems, psychological empowerment, and affective commitment.

Conclusion

This empirical investigation into Pakistan International Airlines (PIA) has clearly demonstrated that both job rotation and high-performance work systems (HPWS) serve as significant drivers of employee performance, with HPWS exhibiting the strongest direct effect (β = 0.41), followed by job rotation (β = 0.28). The results further confirm that psychological empowerment partially mediates these relationships indirect effects of 0.13 for job rotation and 0.18 for HPWS indicating that diversified roles and integrated HR bundles enhance employees' intrinsic sense of meaning, competence, autonomy, and impact, which in turn translate into higher task proficiency and discretionary effort. Affective commitment emerged as a critical boundary condition, significantly moderating both paths (interaction terms β = 0.11 and 0.14), such that employees with stronger emotional attachment and identification with the organization respond more positively to these HR practices and exhibit amplified performance outcomes. Taken together, the model's excellent fit indices (CFI = 0.94, RMSEA = 0.052, SRMR = 0.046) and substantial predictive relevance (especially for HPWS: $f^2 = 0.29$, $Q^2 = 0.31$) provide robust support for the proposed framework in a real-world, high-stakes public-sector aviation context. These findings are particularly salient for PIA, where chronic inefficiencies, politicized management, outdated structures, and eroded employee morale have long undermined service quality and competitiveness. By showing that strategic HR interventions when paired with psychological empowerment and affective commitment can meaningfully improve workforce outcomes, the study offers a theoretically grounded and empirically validated pathway for performance revitalization in similar struggling national carriers.

Theoretically, this research makes several important contributions to the human resource management and organizational behavior literature. First, it extends job characteristics theory and self-determination theory by illustrating how job rotation and HPWS satisfy core psychological needs even within rigid, hierarchical bureaucracies typical of state-owned enterprises in developing economies. Second, it enriches social exchange theory by demonstrating reciprocal performance responses to perceived organizational support in a context where institutional trust has historically been low. Third, the moderation by affective commitment advances Meyer and Allen's three-component model, highlighting emotional attachment as a powerful amplifier of HR practice effectiveness under resource constraints and external pressures. By integrating these four theories into a single cohesive framework tested in an under-researched setting (public-sector aviation in South Asia), the study bridges a notable gap in the literature, which has predominantly focused on private-sector or Western samples. The partial mediation through psychological empowerment further underscores that structural HR practices alone are insufficient; their impact is substantially realized through internalized motivational states a finding that holds particular relevance for high-pressure, safety-critical industries such as aviation where proactive employee behaviors directly affect operational reliability and customer perception.

Practically, the results carry actionable implications for PIA's leadership, other national airlines facing similar challenges, and public-sector policymakers. Organizations should formalize structured, competency-aligned job rotation programs to build multi-skilling and

interdepartmental understanding, while simultaneously embedding HPWS elements selective recruitment, continuous training, participatory decision-making, and performance-contingent rewards into a coherent system rather than implementing them in isolation. Equally important is the deliberate cultivation of psychological empowerment through job enrichment, delegation of meaningful autonomy, and feedback mechanisms that reinforce employees' sense of impact. To maximize returns on these investments, management must prioritize initiatives that rebuild affective commitment, such as transparent communication, visible recognition of contributions, fair treatment, and leadership behaviors that demonstrate genuine care for employee well-being and organizational mission. In the broader public-sector aviation domain, policymakers should recognize that sustainable turnaround requires long-term human capital strategies that address not only structural inefficiencies but also the psychological and emotional dimensions of workforce engagement. Future longitudinal and multi-organization studies could further validate these pathways, while qualitative inquiries might uncover contextual barriers to implementation in politicized SOEs. Ultimately, the evidence presented here affirms that revitalizing employee performance in legacy national carriers is achievable through an integrated, human-centered HRM approach that empowers individuals and strengthens their emotional bond with the organization.

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