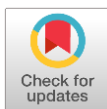


Innovative Computing Review (ICR)

Volume 6 Issue 1, Spring 2026

ISSN(P): 2791-0024, ISSN(E): 2791-0032

Homepage: <https://journals.umt.edu.pk/index.php/ICR>



Article QR



- Title:** **Effect of Faculty Development Model on University Teachers' Performance: An Exploratory Study**
- Author (s):** Abdul Shakoor Rana, Muhammad Tahir Khan Farooqi, Khalid Saleem, and Shehzad Ahmad
- Affiliation (s):** University of Okara, Pakistan
- DOI:** <https://doi.org/10.32350/icr.61.05>
- History:** Received: January 23, 2026, Revised: February 25, 2026, Accepted: April 24, 2026, Published: June 25, 2026
- Citation:** A. S. Rana, M. T. K. Farooqi, K. Saleem, and S. Ahmad, "Effect of faculty development model on university teachers' performance: An exploratory study," *Innov. Comput. Rev.*, vol. 6, no. 1, pp. 65–77, December. 2026, doi: <https://doi.org/10.32350/icr.61.05>.
- Copyright:** © The Authors
- Licensing:**  This article is open access and is distributed under the terms of [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)
- Conflict of Interest:** Author(s) declared no conflict of interest



A publication of
School of Systems and Technology
University of Management and Technology, Lahore, Pakistan

Effect of Faculty Development Model on University Teachers' Performance: An Exploratory Study

Abdul Shakoor Rana^{*id}, Muhammad Tahir Khan Farooqi^{id}, Khalid Saleem^{id}, and Shehzad Ahmad^{id}

University of Okara, Pakistan

ABSTRACT The prosperity of a country largely depends upon the knowledge, skills, expertise, and attitude of its human resources. These qualities can be accomplished by developing effective human workforce development programs. Such development programs aims to boost skills, knowledge, and overall human capabilities. These programs offer a strategic process of imparting competencies like knowledge, skills, and values. Many countries have achieved an economic miracle by developing their human resources. Faculty development initiatives are crucial for improving the quality of higher education. The purpose of this study is to investigate the impact of faculty development programs on the faculty and institutional development. Moreover, it aims to solicit a faculty development model for improvement in the existing level of faculty performance. The sample of the study included, faculty members of social sciences departments, executive, and administrative heads, and HR managers of six randomly selected universities from both public and private sectors. Data was collected using an adapted and piloted questionnaire (HRD-AS). The data was then analyzed using statistical software AMOS version 24, and a faculty development model was proposed using structural equation modeling. The statistical results of the study revealed that the suggested model would significantly enhance faculty performance as well as institutional performance if applied in true spirit.

INDEX TERMS faculty development, human resource development, Pakistani universities, structural equation modeling

I. INTRODUCTION

Human resource development (HRD) is a systematic process wherein people are trained in groups or individually to expand their proficiency and to make them self-reliant for the realization of organizational goals. In the opinion of [1], HRD is a framework that helps employees to develop their skills, knowledge, abilities, leading to organizational development. Similarly, [2] conceptualized HRD as a progression strategy that expands employee's work-based knowledge, expertise, and productivity. Similarly, [3] exemplified HRD as a crucial activity and procedure

that plays a decisive and citing part in recognizing the concealed talent of the workforce of an organization. In the opinion of [4], HRD is an incessant course of action wherein organizational members are offered the opportunities to gain knowledge of the basic skills to meet short and long-term organizational objectives. Furthermore, [5] portrayed HRD as planned learning activities to perk up organizational performance and personal growth. Likewise, [6] declared that HRD is a logical and planned activity that comprises selection and staffing, orientation, employee training, mentoring,

*Corresponding Author: ranaashakoor4@gmail.com

promotion practices, performance appraisal, compensation and benefits, career development, and working environment. An organizational development activity relates more to long-term strategies aiming at the holistic development of the organization [7]. New technologies are required for organizational development and a skilled workforce is crucial to effectively to cover it up.

Similarly, [8], publicized that human resources are the most valuable assets of an organization which brings significant change with their potential. According to [9], HRD leverages talent and energies of employees which are potential contributors to the achievement of organizational goals. Human resources development practices are key components for dynamic and growth-oriented organizations and can be developed into a dynamic and progressive model by promoting the key competencies of their human resources [10].

A. SELECTION & RECRUITMENT

The vibrant inflow and outflow of the populace within an organization needs to match the necessities of an institute. The performance of any firm mainly depends on the usefulness of its human resources. In various characteristics, human resources HRs have the advantages over other resources as other resources can be employed, maintained, and discarded at any time but human resources demand special treatment. Recruiting and selecting talented and experienced individuals is the first step in building an effective workforce. In the opinion of [11], recruitment and selection is a process of searching an adequate number of potential candidates to meet the organizational needs. In other words, selection means to choose an individual amongst the prospective candidates to fill the vacant position in an organization. An

organizational development activity relates more to long-term strategies aiming at its holistic development. New technologies are required for organizational development and a skilled workforce is better to cover it up. As stated by [12], selecting the right people for the right job should be the priority of management. Selecting and staffing are parts of the recruitment process in which outstanding candidates are selected. Merit-based selection reduced the training expenditures as a capable individual has a higher- grasping potential.

B. ORIENTATION

After the selection and recruitment of talented candidates, the organization needs to guide them in the appropriate execution of their roles. Orientation aims at informing newly recruited personnel about their expected role and helps them manage the pressure of transition [13]. Orientation might be in briefing shape or informal introduction and induction training to familiarize new recruiters with the rules, regulations, hierarchical structure, policies, and targets of the organization. Orientation also intends to greet the recruits and make them feel comfortable. The purpose of these practices is to improve employee performance and productivity [14]. Such practices can play a significant role in developing organizational commitment if executed properly. In the opinion of [15], every orientation program intends to familiarize the newly inducted workforce with organizational objectives, and policies and introduce them to managers and co-workers. Avoiding orientation may create mystification in their minds and they may take more time to perform their tasks. In the opinion of [16], a successful orientation enables new employees to feel comfortable in the execution of their assigned duties and socialize them into the working environment. An organizational

development activity relates more to long-term strategies aiming at the holistic development of the organization. In an educational setting, the newly selected teachers/ faculty members also require orientation. They require knowledge about rules and regulations, goals and objectives, mission statements, and the administrative hierarchy of their organization.

C. PERFORMANCE APPRAISAL PRACTICES

Performance appraisal practice is a central component of an organizational performance management system. The purpose of these practices is to improve employee productivity and performance [14]. Such practices can play a significant role in developing organizational commitment if executed properly [17]. The objectives of appraisal mechanisms are to compare the current and past performance to get better [18]. An ideal workplace is characterized as where there is a low level of stress and maximum job satisfaction and job security. Job security is the most important component of HR development practices. In the opinion of [19] the working environment is comprised of physical setting, organizational culture and geographical surroundings. In simplest words working environment is the composition of job characteristics e.g. workload, working hours, organizational culture and history, facilities, opportunities for promotion and career development, market conditions, and local and labor market [20]. A performance appraisal system is an essential part of the human resources development model which includes observation and judgments [21]. Performance appraisal is a multidimensional practice aiming at good performance by removing shortcomings and providing the guiding principle to rationalize management decisions [22].

Similarly, [19], propagated that performance appraisal practice provides opportunities to identify the skills they need to acquire for organizational development. It guarantees that the workforce stays focused on efficient performance [23]. Performance appraisal practice and monitoring improve the productivity and performance of the workforce [14]. An appropriate explanation and supervision of performance lead to higher performance. Employee productivity and commitment can be improved by applying a performance appraisal system. Keeping in view its importance, it is indispensable to carry out performance appraisals after every six to twelve months [24].

D. ORGANIZATIONAL DEVELOPMENT

Organizational development aims at strengthening harmonization among various groups, units, and all other stakeholders. Organizational growth demands long-term sustainable planning to swell up overall production. From the perspective of higher education institutions (HEIs) of Pakistan, the faculty development program of Pakistani universities lacks such sustainable planning and strategies. The study of [25], revealed that the faculties of Pakistani higher education institutions are professionally less proficient. This causes a reduction in organizational output and growth. Correspondingly, [26] studied the impact of the supportive role of organizational atmosphere and employee prosperity. Organizational development limelight the performance of the organization as a whole [9]. Similarly, [27] elaborated organizational development as a long-term exertion assisted by higher administration to perk up organizational vision using learning and problem-solving processes. This can be possible through continuing,

shared management of an organization that improves the effectiveness and well-being of the employees. An organizational development activity relates more to long-term strategies aiming at the holistic development of the organization [7]. New technologies are required for organizational development and a skilled workforce is better to cover it [28]. The ultimate goal of HRD is to; increase the capabilities of individuals, groups, teams, and the entire organization.

E. WORKING ENVIRONMENT

The working surroundings of an organization play a pivotal role in magnetizing and engaging employees. If the working conditions are conducive the performance of the employees will improve significantly [29]. An ideal workplace is characterized as where there is a low level of stress and maximum job satisfaction and job security. Job security is the most important component of HR development practices. In the opinion of [30], the working environment is comprised of a physical setting, organizational culture geographical surroundings. In simplest words working environment is the composition of job characteristics e.g. workload, working hours, organizational culture and history, facilities, opportunities for promotion and career development, market conditions, and local and labor market [21]. The study of [31], indicated that the working environment and employee's job satisfaction significantly influence organizational performance. According to [32], physical safety means protecting employees from accidental injuries that can be caused during duty. It is a fact that environmental factors like health, safety, and compensation benefits considerably influence the performance of the employees [33]. Again [21], declared that the working environment and worker's

attitude and performance are correlated. As far as higher education is concerned, there is a serious lack of pragmatic practices to probe the campuses environment and employee's job commitment. The coordination between the campus environment and employee job commitment leads to a well-established structure. According to [34], a supportive HRD environment is crucial for organizational development. Similarly, [35], concludes that the working environment and employee performance are strongly correlated.

F. PURPOSE OF THE STUDY

This study aims to analyze the existing faculty development practices being executed in public and private sector universities in Pakistan. Moreover, this study will also investigate the relationship between various HR development practices. Based on the statistical estimation an appropriate and practicable model would be suggested for faculty developmental programs for Pakistani universities. Due to various constraints, the study is limited to the universities functioning within the public and private sectors in the Punjab province of Pakistan.

G. HYPOTHESES

The following hypotheses have been formulated to assess the impact of various HR development factors on organizational development.

H1: There is a significant correlation between selection and recruitment practices and organizational development.

H2: There is a substantial relationship between orientation practices and organizational development.

H3: There is a significant relationship between performance appraisal

mechanisms and organizational development.

H4: There is a significant association between organizational working conditions and organizational development.

H5: Human resources development practice significantly influences organizational development.

II. METHODOLOGY

To carry out the study data was collected from faculty members, executive and administrative heads of departments of social sciences using a proportionate sampling technique. An adapted questionnaire was used to gather the opinions of the selected sample. A total of 750 questionnaires were administered but

525 shared their responses showing a 70% response rate. The data were analyzed using by AMOS software version 24 and structural equation modeling was employed to develop the faculty development model.

A. SAMPLE OF THE STUDY

Using a random sampling technique, six universities from both public and private sectors on equal proportionate were selected as a sample of the study. Data were collected from 525 faculty members, executive and administrative heads, and HR managers of social sciences departments of these universities.

III. RESULTS

Results of the analysis and conclusion drawn are presented below.

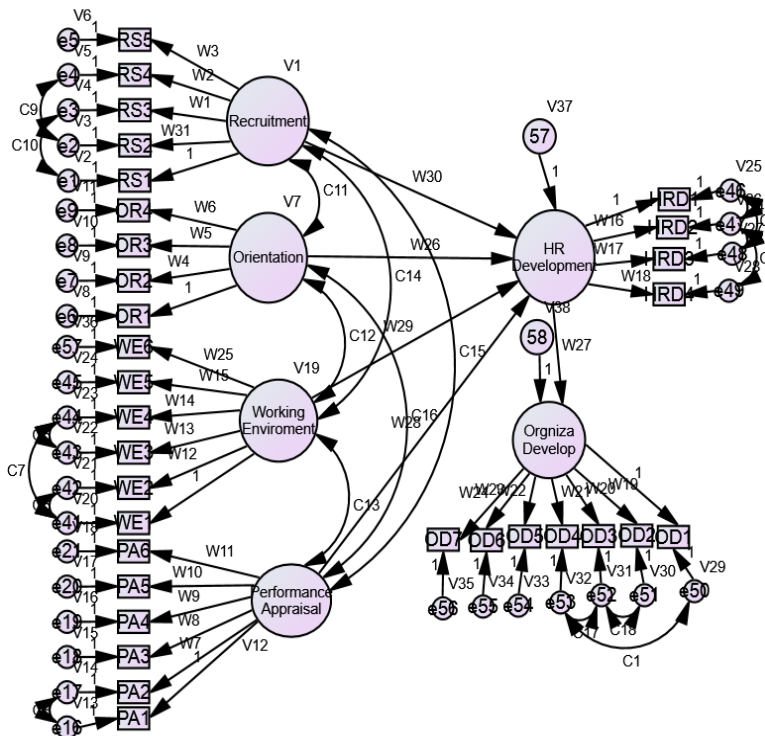


FIGURE 1. Faculty development model for university teachers

TABLE I
THRESHOLD OF MODEL FIT

Measures	CMIN/DF	CFI	RMR	RMSEA	PCLOSE
Terrible	>5	<0.90	>0.10	>0.08	<0.01
Acceptable	>3	<0.95	>0.08	>0.06	<0.05
Excellent	>1	>0.95	<0.08	<0.06	>0.05

Source: [36], thresholds values of Fit Indexes Analysis: Conventional Criteria versus New Alternatives")

TABLE II
MODEL FIT MEASURES OF THE STUDY

Measures	CMIN	df	CMIN/ df	CFI	RMR	RMSEA	p Close
Threshold	---	---	Between 1 and 3	>0.95	<0.08	<0.06	>0.05
Estimate	756.227	430	1.759	0.935	.049	.038	1.000
interpretation	-----	----	Excellent	Acceptable	Excellent	Excellent	Excellent

TABLE III
CMIN (MINIMUM DISCREPANCY)

Model	NPAR	CMIN	df	p	CMIN/ df
Default model	98	756.227	430	.000	1.759
Saturated model	528	.000	0		
Independence model	32	5520.414	496	.000	11.130

Statistically, determining model fit measures revealed that there is no definite threshold for a good model fit. The CMIN value ought to be within 1 to 3 for a good

model fit. The CMIN/DF value of the suggested model was 1.759. The produced value revealed the recommended model as a good fit (See Tables 1 & 3).

TABLE IV
BASELINE COMPARISON OF THE STRUCTURAL MODEL

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.863	.842	.936	.925	.935
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Comparative Fit Index (CFI) reflects on the whole perfection of the suggested model. The cutoff CFI value for the adequacy of a good model fit ought to be ≥ 0.90 . The estimated value of the developed model was .935 which epitomizes the goodness of

the projected model. (See table 1 & 4). Besides these indices, two other criteria were also kept into account for establishing the goodness of the developed model [37]. The criterion is reflected below.

TABLE V
ROOT MEAN SQUARE ERROR OF APPROXIMATION

Model	RMSEA	LO90	HI90	P Close
Default model	.038	.034	.042	1.000
Independence model	.139	.136	.142	.000

Root Mean Square Error of approximation approximates the degree of inexactness of data by considering the complexity of the model. An RMSEA value $\leq .05$ is measured as a good model and $< .08$ represents the adequacy of a good model fit [38]. The

maximum-likelihood technique was used to calculate the goodness of the 6-factors model. The calculated value of the proposed model was .038 which established the goodness of the developed model (See Table 1 & 5).

TABLE VI
ROOT MEAN SQUARE (RMR) AND GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.049	.918	.900	.748
Saturated model	.000	1.000		
Independence model	.313	.307	.262	.288

The goodness of fit Index is an absolute model fit index. A GFI is analogous to a model R2 in multi-regression analysis. The value for GFI 0.90 or above indicated the adequacy of a model fit. The GFI, AGFI,

and PGFI values of the proposed model were .918, .900, and .748 respectively which established the goodness of the suggested model (See Tables 1 & 6).

TABLE VII
PARAMETER SUMMARY

	Weights	Co variances	Variances	Means	Intercepts	Total
Fixed	40	0	0	38	2	80
Labeled	31	29	38	0	0	98
Unlabeled	0	0	0	0	32	32
Total	71	29	38	38	34	210

TABLE VIII
CORRELATIONS OF VARIOUS FACTORS: (DEFAULT MODEL)

Factors		Correlation Estimation	Estimate
Recruit__ Selection	<-->	Performance__ Appraisal	.731
Recruit__ Selection	<-->	Working__ Environment	.668
Performance__ Appraisal	<-->	Working__ Environment	.887
Orientation	<-->	Working__ Environment	.705
Recruit__ Selection	<-->	Orientation	.756
Orientation	<-->	Performance__ Appraisal	.872

TABLE IX
COVARIANCE: (DEFAULT MODEL)

Constructs	Estimation	S.E	C.R	p	Label	Constructs
Recruit –Selection <--> Performance Appraisal	.201	.029	7.050	***	par_54	
Recruit – Selection <--> Working Environment	.224	.030	7.435	***	par_55	
Perform – Appraisal <--> Working Environment	.414	.044	9.329	***	par_56	
Orientation <--> Working Environment	.329	.040	8.140	***	par_57	
Recruit- Selection <--> Orientation	.207	.031	6.719	***	par_58	
Orientation <--> Performance Appraisal	.333	.041	8.114	***	par_59	

IV. DISCUSSION

The study analyses the effect of different human resource development practices on organizational development. The progress of a country mainly relies upon the excellence of education, higher education which is directly influenced by the competence of its faculty members. The standards of university teachers' teaching need an instantaneous and concrete uplift. Many faculty development models exist globally, but given Pakistan's unique educational and socio-economic context, the study has proposed a tailored faculty development model. The recommended model stands on various human resource development constructs viz selection and recruitment, orientation, performance appraisal system, and working environment. Human resource development acts as a mediator in the proposed faculty development model.

H1: The analysis endorsed that selection recruitment and organizational development were strongly correlated. Merit-based recruitment and selection significantly drastically improve the professional standard of university faculty. The principle of selecting the right person for the right job highly contributes to the faculty development program. The findings of the present paper are in line with the study carried out by [16], who established

that skilled and capable people can give better results if recruited.

H2: The analysis of the second hypothesis endorsed that job-specific orientation improve the performance of newly inducted faculty. The analysis of the study was consistent with the findings of similar research carried out by [15], in which they affirmed that orientation and faculty performance of employees were positively and strongly interconnected.

H3: The analysis revealed that performance appraisal practices and faculty development programs are positively correlated. A performance appraisal system is a multi-dimensional tool that helps in removing shortcomings and providing a guiding principle to meet organizational set standards. The results of this study are in line with a similar study carried out by [22] wherein the researchers claimed that performance appraisal practices provide opportunities to identify the skills needed to achieve organizational objectives.

H4: The analysis also explored that working environment and faculty job satisfaction extensively contribute to organizational development. If the working conditions are conducive, the employee's performance will improve considerably. The study of [37], authenticated the findings of the present study. Similarly, the study of [21], also supported the results and

asserted that working environment, employees' attitude, and organizational development are strongly correlated.

H5: HRD is a process that develops employee's work-based knowledge, expertise, productivity, and satisfaction. It is evident from the study of [39], that human resource development and organizational development are strongly correlated. The hypothesis was tested and results revealed that human resource development and organizational development are significantly and positively interconnected. Similar findings were drawn from the study of McLean and McLean (2001), wherein the researchers conceptualized human resource development as a process that develops employees' knowledge, expertise, productivity, and resultantly organizational development.

A. CONCLUSION

It is globally accepted that the development of any organization predominantly depends on the development of its human capital. The significance of HR development practices and their appropriate implementation has already been accredited by the university administration which is taking adequate measures for execution. Recognizing its importance, the government of Pakistan in collaboration with higher education has taken several initiatives for faculty development. The majority of the universities have instituted HRD departments and are applying various HR development practices. An organizational development activity relates more to long-term strategies aiming at the holistic development of the organization. New technologies are required for organizational development and a skilled workforce is better to cover it up. Despite all this, much more needs to be done to

promote higher education and make it more vibrant. HEI needs to institute a well-designed and well-powered HR department for faculty and ministerial staff development to cope with future challenges.

B. RECOMMENDATIONS

Based on the discussion above, the following recommendations are proposed made for faculty development.

- 1- Transparent and merit-based selection and recruitment mechanisms should be established and implemented in both public and private sectors universities.
- 2- Orientation practices should be inculcated before every event/ program as it minimizes the chance of errors and mistakes. Furthermore, participation in the orientation sessions must be made mandatory for new recruiters at all levels.
- 3- A permanent and vigilant performance appraisal mechanism should be established at the university level. The performance appraisal must be unbiased and transparent. Employees should be held accountable for their performance. A good performer should be rewarded and poor performers should be treated accordingly.
- 4- The working environment of every institution/organization should be pleasant and employees friendly. There should be arrangements for health and physical security. Job, physical, and psychological security provides mental satisfaction to the employees. Resultantly, they feel motivated to devote themselves to organizational development.

Author Contribution

Abdul Shakoor Rana: Muhammad Tahir Khan Farooqi: Khalid Saleem: Shehzad Ahmad:

Conflict of Interest

The authors of the manuscript have no financial or non-financial conflict of interest in the subject matter or materials discussed in this manuscript.

Data Availability Statement

Data supporting the findings of this study will be made available by the corresponding author upon request.

Funding Details

No funding has been received for this research.

Generative AI Disclosure Statement

The authors did not use any type of generative artificial intelligence software for this research.

REFERENCES

- [1] A. Hameed and A. Waheed, "Employee development and its affect on employee performance: A conceptual framework," *Int. J. Bus. Soc. Sci.*, vol. 2, no. 13, pp. 224–229, July 2011.
- [2] B. Gilbreath and M. U. Montesino, "Expanding the HRD role: Improving employee well-being and organizational performance," *Hum. Resour. Dev. Int.*, vol. 9, no. 4, pp. 563–571, Dec. 2006, doi: <https://doi.org/10.1080/13678860601032684>.
- [3] R. R. Sims, *Human Resource Development: Today and Tomorrow*. Greenwich, CT, USA: Information Age Publishing, 2006.
- [4] B. Pattanayak, *Human Resource Management*, 6th ed. New Delhi, India: PHI Learning, 2020.
- [5] M. M. Harris, Ed., *Handbook of Research in International Human Resource Management*. Mahwah, NJ, USA: Lawrence Erlbaum Associates, 2007.
- [6] J. M. Werner and R. L. DeSimone, *Human Resource Development*, 6th ed. Mason, OH, USA: South-Western Cengage Learning, 2012.
- [7] R. J. Baumgartner and R. Rauter, "Strategic perspectives of corporate sustainability management to develop a sustainable organization," *J. Clean. Prod.*, vol. 140, pp. 81–92, Jan. 2017, doi: <https://doi.org/10.1016/j.jclepro.2016.04.146>.
- [8] T. Deb, *Human Resource Development: Theory and Practice*. New Delhi, India: Ane Books, 2006.
- [9] S. Singh, "Key components of human resource development (HRD)," *Res. J. Soc. Sci. Manag.*, vol. 1, no. 9, pp. 118–124, Jan. 2012.
- [10] M. S. Cardon and C. E. Stevens, "Managing human resources in small organizations: What do we know?," *Hum. Resour. Manag. Rev.*, vol. 14, no. 3, pp. 295–323, Sep. 2004, doi: <https://doi.org/10.1016/j.hrmr.2004.06.001>.
- [11] J. A. Breugh and M. Starke, "Research on employee recruitment: So many studies, so many remaining questions," *J. Manag.*, vol. 26, no. 3, pp. 405–434, June 2000, doi: <https://doi.org/10.1177/014920630002600303>.
- [12] S. Newell, "Recruitment and selection," in *Managing Human Resources: Personnel Management in Transition*, S. Bach, Ed. Oxford, UK: Blackwell Publishing, 2005, pp. 115–147.

- [13] L. R. Gomez-Mejia, D. B. Balkin, and R. L. Cardy, *Managing Human Resources*, 7th ed. Upper Saddle River, NJ, USA: Pearson/Prentice Hall, 2012.
- [14] M. Brown and J. S. Heywood, "Performance appraisal systems: Determinants and change," *Br. J. Ind. Relat.*, vol. 43, no. 4, pp. 659–679, Dec. 2005, doi: <https://doi.org/10.1111/j.1467-8543.2005.00478.x>.
- [15] S. P. Robbins, M. A. Coulter, and D. A. DeCenzo, *Fundamentals of Management*, 11th ed. Harlow, UK: Pearson, 2019.
- [16] G. Dessler, *A Framework for Human Resource Management*, 4th ed. Upper Saddle River, NJ, USA: Pearson/Prentice Hall, 2006.
- [17] M. Brown and J. Benson, "Rated to exhaustion? Reactions to performance appraisal processes," *Ind. Relat. J.*, vol. 34, no. 1, pp. 67–81, Mar. 2003, doi: <https://doi.org/10.1111/1468-2338.00259>.
- [18] C.-J. Chen and J.-W. Huang, "Strategic human resource practices and innovation performance—The mediating role of knowledge management capacity," *J. Bus. Res.*, vol. 62, no. 1, pp. 104–114, Jan. 2009, doi: <https://doi.org/10.1016/j.jbusres.2007.11.016>.
- [19] R. B. Briner, "Relationships between work environments, psychological environments and psychological well-being," *Occup. Med.*, vol. 50, no. 5, pp. 299–303, July 2000, doi: <https://doi.org/10.1093/occmed/50.5.299>.
- [20] Y. Noah and S. Metiboba, "Work environment and job attitude among employees in a Nigerian work organization," *J. Sustain. Soc.*, vol. 1, no. 2, pp. 36–43, 2012, doi: <https://doi.org/10.11634/21682585140398>.
- [21] K. Moser and N. Galais, "Self-monitoring and job performance: The moderating role of tenure," *Int. J. Sel. Assess.*, vol. 15, no. 1, pp. 83–93, Mar. 2007, doi: <https://doi.org/10.1111/j.1468-2389.2007.00370.x>.
- [22] K. O. Akuoko and J. Baffoe, "Performance appraisal and human resource development," *Int. J. Soc. Sci. Interdiscip. Res.*, vol. 1, no. 10, pp. 52–59, Oct. 2012.
- [23] O. M. Karatepe and O. A. Olugbade, "The mediating role of work engagement in the relationship between high-performance work practices and job outcomes of employees in Nigeria," *Int. J. Contemp. Hosp. Manag.*, vol. 28, no. 10, pp. 2350–2371, 2016, doi: <https://doi.org/10.1108/IJCHM-03-2015-0145>.
- [24] W. P. Anthony, P. L. Perrewe, and K. M. Kacmar, *Human Resource Management: A Strategic Approach*, 3rd ed. Fort Worth, TX, USA: Dryden Press, 1999.
- [25] S. A. Raza and S. A. Naqvi, "Quality of Pakistani university graduates as perceived by employers: Implications for faculty development," *J. Qual. Technol. Manag.*, vol. 7, no. 1, pp. 57–72, June 2011.
- [26] S. Saleem and S. Amin, "The impact of organizational support for career development and supervisory support on employee performance: An empirical study from Pakistani academic sector," *Eur. J. Bus. Manag.*, vol. 5, no. 5, pp. 194–207, 2013.
- [27] W. L. French and C. H. Bell, Jr.,

- Organization Development: Behavioral Science Interventions for Organization Improvement*, 6th ed. Englewood Cliffs, NJ, USA: Prentice Hall, 1999.
- [28] T. F. Bresnahan, E. Brynjolfsson, and L. M. Hitt, "Information technology, workplace organization, and the demand for skilled labor: Firm-level evidence," *Q. J. Econ.*, vol. 117, no. 1, pp. 339–376, Feb. 2002, doi: <https://doi.org/10.1162/003355302753399526>.
- [29] D. Leblebici, "Impact of workplace quality on employee's productivity: Case study of a bank in Turkey," *J. Bus. Econ. Finance*, vol. 1, no. 1, pp. 38–49, 2012.
- [30] S. Mazumdar, "Organizational culture and physical environments: A study of corporate headoffices," Ph.D. dissertation, Dept. Architecture, Massachusetts Inst. Technol., Cambridge, MA, USA, 1989.
- [31] A. Solkhe and N. Chaudhary, "HRD climate and job satisfaction: An empirical investigation," *Int. J. Comput. Bus. Res.*, vol. 2, no. 2, May 2011.
- [32] R. W. Mondy and R. M. Noe, *Human Resource Management*, 9th ed. Upper Saddle River, NJ, USA: Pearson Prentice Hall, 2005.
- [33] R. Jain and S. Kaur, "Impact of work environment on job satisfaction," *Int. J. Sci. Res. Publ.*, vol. 4, no. 1, pp. 1–8, Jan. 2014.
- [34] C. V. Banu, "A study on HRD climate with special reference to public sector cement corporation," *IUP J. Manag. Res.*, vol. 6, pp. 37–49, 2007.
- [35] E. Kahya, "The effects of job characteristics and working conditions on job performance," *Int. J. Ind. Ergon.*, vol. 37, no. 6, pp. 515–523, June 2007, doi: <https://doi.org/10.1016/j.ergon.2007.02.006>.
- [36] L.-T. Hu and P. M. Bentler, "Cutoff criteria for fit indexes in covariance structure analysis: Convensional criteria versus new alternatives," *Struct. Equ. Model.*, vol. 6, no. 1, pp. 1–55, 1999, doi: <https://doi.org/10.1080/10705519909540118>.
- [37] T. Raykov and G. A. Marcoulides, "Estimation of generalizability coefficients via a structural equation modeling approach to scale reliability evaluation," *Int. J. Test.*, vol. 6, no. 1, pp. 81–95, 2006, doi: https://doi.org/10.1207/s15327574ijt0601_5.
- [38] M. W. Browne and R. Cudeck, "Alternative ways of assessing model fit," *Sociol. Methods Res.*, vol. 21, no. 2, pp. 230–258, Nov. 1992, doi: <https://doi.org/10.1177/0049124192021002005>.
- [39] R. Amudha and C. Vijaya Banu, "Service quality in banking with special reference to ICICI Bank Ltd., Tiruchirappalli District," *Asia-Pac. J. Manag. Res. Innov.*, vol. 3, no. 2, pp. 18–26, July 2007, doi: <https://doi.org/10.1177/097324700700300203>.