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Job Resources and Employee Wellbeing in Pakistan's Healthcare Sector: The Mediating Role of Work-Life Balance and the Moderating Role of Job Control under the Job Demands-Resources Model

1. Muhammad Awais, 2. Iram Fatima, 3. Adeel Younas

1. MPhil Scholar, Faculty of Business and Management Sciences, The Superior University, Lahore, Pakistan
iamawais708@gmail.com
2. MPhil Scholar, Faculty of Business and Management Sciences, The Superior University, Lahore, Pakistan
iramfat.555@gmail.com
3. Lecturer, The Superior University, Lahore, Pakistan
iramfat.555@gmail.com

Abstract

This study examines how job security and training and development shape job satisfaction among healthcare employees and paramedics in Pakistan, with work-life balance modeled as the mediating mechanism connecting these organizational resources to satisfaction, and job control modeled as a boundary condition that shapes how strongly those resources translate into work-life balance. The model is developed and tested under the lens of the Job Demands-Resources (JD-R) theory. To fulfil the objective of this study, Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS 4 was employed to assess and measure the model, and data were collected from 259 healthcare employees, including paramedics, nurses, administrative staff, medical technicians, and support personnel, working in hospitals across Pakistan, using a convenience sampling technique and a self-administered online questionnaire. The results depict

that job security and training and development both significantly and positively predict work-life balance, and that work-life balance in turn significantly predicts job satisfaction. Work-life balance fully mediates the effect of both job security and training and development on job satisfaction. Job control significantly strengthens the relationship between training and development and work-life balance, such that the relationship is considerably stronger among employees with high autonomy than among those with low autonomy, while training and development does not moderate the relationship between job security and work-life balance. Of the seven hypotheses suggested in the study, six were confirmed. This study offers a mechanism-based explanation for how organizational and personal resources interact to influence employee wellbeing in a resource-limited health care system, and provides a real, evidence-based example for hospital administrators and policy makers to enhance employee satisfaction, retention, and ultimately quality of health care services for patients.

Keywords: Job Security (JSS), Training and Development (TD), Work-Life Balance (WB), Job Control (JC), Job Satisfaction (JS), Job Demands-Resources (JD-R) Model

1. Introduction

Job satisfaction has been a prominent topic of study in organizational behavior for many reasons, including its impact on employee performance, turnover, and the quality of service provision to stakeholders and clients. It is widely known that it is one of the key factors that affect employee productivity, stability of the organization and the quality of its service (Hamdan et al., 2024).It is studied for decades because of its cross-over with many organizational outcomes, including engagement, turnover intention, psychological wellbeing, and organizational commitment, in some way or another, all of which can be traced back to the employee's satisfaction with his/her job. In the context of healthcare, this question carries even greater significance since healthcare professionals work in high-stakes, emotional settings that can impact the life of another human being and therefore is not just an internal human resource issue but a patient safety issue as well.

This pressure is not only limited to one country. The healthcare workforce globally is facing a level of stress that has never been higher due to heightened demands on services from patients, ageing populations and scarce resources (Alansari et al., 2025). According to the latest projections by the World Health Organization (WHO, 2025**),** the world is projected to experience a shortage

of 11 million health workers, which was up from the previous estimate of 10 million, and this shortage is disproportionately high in low and middle-income countries and highest in the Eastern Mediterranean region and Africa. The reduced number of hands obviously raises the workload for working people, and the need for more hands to do the same work can lead to a greater likelihood of burnouts and negative attitudes about work, which is well documented in the occupational health literature as a gradual state of emotional exhaustion, depersonalization and reduced personal accomplishment that occurs under sustained workplace strain (Maslach et al., 2001). This is aligned with the rationale to investigate job satisfaction as a strategic measure of a health system which is most likely a contextually relevant internal organizational measure instead of a measure of resource constraints, as Pakistan belongs to the Eastern Mediterranean region where the total number of nursing workforce members has seen an increase from 27.9 million in 2018 to 29.8 million in 2023, while the nursing shortage is expected to rise from 5.8 million in 2023 to 70% of which is believed to be in Africa and Eastern Mediterranean, i.e. Pakistan (WHO, 2025).

Pakistan is no exception to this international phenomenon; however, it has its own set of structural limitations which are superimposed in this context. Qualified staffing, overburdened workload and changes that do not leave ample time for patient care that employees were trained to offer, are chronic issues in the health sector of Pakistan. This chronic overloading is the most likely cause of loss of satisfaction and wellbeing, and is probably most damaging over many years of employment, rather than any single dramatic incident; because it is not always a dramatic incident that will trigger an institutional response it is likely to cause the gradual erosion of satisfaction and wellbeing, often silently. The empirical findings suggest moderate to high levels of dissatisfaction among most healthcare workers in Pakistan, including paramedics, due to heavy workloads, lack of training opportunities, job insecurity, and a lack of organizational support(Hussain et al., 2025).

Job security is a catalyst for this discontentment, amongst all the other factors. Job security is the certainty and consistency of employees about their job. Evidence from large-scale meta-analyses shows that in a wide range of countries and occupational groups, job insecurity is associated with reduced job attitudes and wellbeing, as when employees think their jobs are secure they are less likely to suffer from stress, are more likely to be committed to the organization, and are generally more satisfied(Oweidat et al., 2025) (Sverke et al., 2002a).In contrast, the anxiety, lack of motivation and poor psychological health have been linked to job insecurity, which is also

prevalent in the Pakistani public health institutions, due to contractual appointments and frequent changes in their leadership; empirical studies have revealed that more than 30 percent of the healthcare providers including paramedics are concerned about job insecurity.

Another significant determinant of job satisfaction is training and development, and this is a one which is often underestimated. With the rapid pace of medical technology and treatment methods, continuous learning is a must in the healthcare industry, and high standards are expected of patient care (Alshammari & Alenezi, 2023a).These three are closely linked to the satisfaction a person feels in his or her job, and training programs help to convey the message of an organization's investment in employees' growth and development, which is also a key factor in job satisfaction. However, there is limited training in the majority of health institutions in Pakistan, including paramedic workers, who have reported a lack of training, which impacts their confidence, performance and job satisfaction in a single go (Shiri et al., 2023).

Work-life balance is also an important factor, understood as the equilibrium between work needs and personal needs that people strive to establish (Kalliath & Brough, 2008). Healthcare workers are especially at risk of work-life imbalance because of rotating shifts, extended hours, and irregular workloads, and low work-life balance is associated with stress, fatigue, low job satisfaction, and intention to leave (Hussain et al., 2025).Research in Pakistan shows that over 60 percent of nurses suffer from moderate to severe work-life imbalance, indicating that this is not a marginal problem but one affecting the majority of the workforce. Job control complicates this picture further: it is the amount of independence workers have in organizing their work, arranging their activities, and deciding how work is done, and it has repeatedly been found to have a positive impact on psychological wellbeing, stress reduction, and satisfaction (Amna Afifa et al., 2025), functioning as a buffer that helps employees translate other resources into reduced strain. In Pakistan, however, job control is often restricted, especially for lower-level workers and nurses, leaving the very employees who could benefit most from autonomy with comparatively little of it.

Taken together, these observations point toward the need for a theory that accounts for these factors jointly rather than treating them as independent predictors. The Job Demands-Resources (JD-R) model provides a suitable foundation for examining the joint link between job security, training, work-life balance, job control, and job satisfaction: job demands such as workload and emotional

strain lead to burnout in the absence of job resources such as job security, training, and job control, while job resources increase motivation, reduce strain, and promote positive attitudes toward work (Gynning et al., 2024a).This is particularly relevant to Pakistan's healthcare sector, where high demands coexist with an unusual scarcity of resources.

1.1. Research Gap and Problem Statement

While job satisfaction is well established as one of the most important determinants of organizational effectiveness in global healthcare systems, research on job satisfaction in the specific context of Pakistan remains underdeveloped and poorly integrated with the wider literature. Much of the existing work has been reductionist, examining job security, training and development, work-life balance, and job control in bivariate or limited multivariate analyses (Rehman et al., 2025).An additive approach that establishes that each factor matters without clarifying how these resources interact, reinforce one another, or substitute for one another, even though the JD-R model itself suggests that resources are rarely independent. Four overlapping gaps can be identified. First, an inadequate integrated theoretical framework exists for high-stress settings: the JD-R model has seen limited application in Pakistan's health sector (Bakker et al., 2023), leaving both the direct role of key resources and the mediating role of work-life balance and the moderating role of job control largely unexamined together. Second, the mediating pathway through work-life balance remains under-theorized and under-tested (Poma et al., 2025),so it is unclear whether foundational resources such as job security and training improve satisfaction directly or primarily by reducing work-life conflict. Third, boundary conditions have been overlooked: the role of job control in reinforcing or dampening the effectiveness of other resources has not been fully explored in the Pakistani literature (Christiansen et al., 2024),leaving hospital managers with little guidance on when autonomy alone is sufficient and when it must be paired with other resources. Fourth, systemic precarity has rarely been contextualized: Pakistan's healthcare workforce is disproportionately contractual, governance is politicized, and professional development is underfunded (Ghanei Gheshlagh et al., 2025), conditions that limit how far models validated elsewhere can be trusted to travel.

The healthcare institutions in Pakistan are facing prolonged, structural stress from staff shortages, rising workloads, and administrative constraints, and while prior studies confirm that job satisfaction is central to employee performance and organizational stability, the mechanisms

linking organizational resources to satisfaction in Pakistan's health sector remain poorly understood, since findings from better-resourced health systems elsewhere may not transfer cleanly to this setting. Job insecurity persists among Pakistani paramedics because of contract-based employment and inconsistent policy; training and development remains under-resourced even as clinical demands intensify; poor work-life balance is a well-documented concern whose specific role as a mediator between organizational resources and satisfaction has not been adequately tested in Pakistani hospitals; and job control, one of the most valuable personal resources available to buffer strain, has rarely been examined as a specific moderator in this setting (Hussain et al., 2025). To fill this gap, this study develops and empirically tests a JD-R model, where the resources of employees (i.e. job security, training and development) are antecedent concepts, work-life balance is the intervening concept, and job control is the moderating boundary condition that influences employee wellbeing in the healthcare context of Pakistan.

1.2. Research Questions and Objectives

This research study strives to resolve 7 research questions that begin with the relationships between variables and then move on towards the explanation of the relationships and towards the boundary conditions that link the relationships together.

(i) How job security affects work-life balance of health care workers (including Paramedic) in Pakistan?

(ii) How does training and development impact on the work-life balance?

(iii) What is the effect of work-life balance on job satisfaction?

(iv) Does job security predict job satisfaction through work-life balance?

(v) Is there a mediation effect between training and development and job satisfaction (WLB)?

(vi) Does job control moderate the connection between training and development and work-life balance?

vii) Is there a moderating effect of training and development on the relationship between job security and work-life balance?

For this reason, the study aims to find out: The role of work-life balance in job security; The impact of training and development on work-life balance, respectively; and How work-life balance affects

job satisfaction; Whether each of the antecedents is connected with job satisfaction through the mediation of work-life balance; and Whether job control, in turn, regulates the relationship between training and development and work-life balance; and Whether training and development, in turn, moderate the relationship between job security and work-life balance, respectively.

1.3 Significance of the Study

This study has theoretical, practical and social relevance. It has the potential to provide a more complete picture of how satisfaction is formed (or lost) in a resource constrained healthcare setting, in which the JD-R model's prediction has not been extensively tested, than the prior JD-R work, which examines one or at most two factors in isolation. The findings have a practical application in helping human resources departments, hospital management and policy-makers design interventions that enhance job satisfaction, lower turnover and boost patient well-being, not just by understanding which investments are effective, but also by understanding how certain combinations of investments (e.g., training and more autonomy) are likely to be most effective in improving employees' wellbeing.

Socially: If healthcare professionals are more satisfied with their jobs, they may provide better health care, reduce stress for those employed in health care, increase trust of in-patient services at hospitals, especially where there is already a nurse and staff shortage and an increasing number of patients.

2. Literature Review

2.1. Theoretical Foundation: The Job Demands-Resources Model

This study is based on the Job Demands-Resources (JD-R) model that is among the most commonly used models in the field of occupational health and organizational behavior studies. All jobs are categorized in the JD-R model as either job demands (workload, emotional strain, and role conflict) or job resources (job security, autonomy, and development opportunity), which affect employee wellbeing and performance (Li et al., 2025).In particular, the model does not make the assumption that all occupations are in themselves stressful or satisfying, but rather that satisfaction and strain are a result of the match or mismatch between the demands of the job and the resources available to them. The simple distinction has roots in the original formulation of the model which

posited that depletion was mainly related to job demands and lack of job resources to disengagement (Demerouti & Bakker, 2023).

This perspective rectifies two prevalent misunderstandings. While the first is an approach of stress accommodation for personnel of high-demand occupations like healthcare, the JD-R model focuses on the ratio of demands to resources, and provides administrators with a lever to increase resources, which does not involve the impossible act of reducing demands for care. The second oversimplification assumes that job resources are universally effective and that their effects are additive, which is not the case in the JD-R model, since some job resources are only effective when other resources are present, and are not in themselves a solution. This directly motivated this study's focus on job control as a moderating variable instead of an additional additive resource. The fact that the model can accommodate "layered" relationships, such as mediation (e.g., work-life balance influencing the effect of resources on satisfaction), and moderation (e.g., job control moderating the influence of other resources on satisfaction) is well documented in the general JD-R literature, namely, in the mediation of the pathway between demands and resources and outcomes including burnout and engagement (e.g., between work-life balance and resources and outcomes (Schaufeli & Bakker, 2004). Later enhancements of the model have also added personal resources that buffer the effects of demands and that stand alone as positive resources (Xanthopoulou et al., 2007), and have shifted the focus from demand and resources as separate factors to the interplay between the two (Bakker & Demerouti, 2017a). However, the present study departs from this well-established, interactive reading of the JD-R model, as it considers job security, training and development, work-life balance, and job control as all working together as resources, rather than as distinct and separate predictors, and it is this multi-faceted way of operation that the structural model in Section 4 is designed to test.

2.2. Hypotheses Development

2.2.1 Job Security (JSS) and Work-Life Balance (WB)

Job security is the confidence employees feel about the stability, continuity and future of their jobs. It's less a truth as much as a perception: Two staff members with the same contract can have vastly different expectations of what their job will look like in the future, depending on the signals their organization sends, how their supervisors communicate about change, and the organization's

overall attitude towards uncertainty. Higher trust, lower anxiety, and increased organizational commitment are linked to favorable job security, and this lower anxiety likely releases resources that employees would otherwise use to think about job continuity and resources that can be put instead toward negotiating the boundary between work and personal life. However, job insecurity is prevalent in the hospitals of Pakistan due to short-term contracts, political appointments, and frequent administrative shifts, which is linked to stress, demoralization, and wellbeing(Kalliath & Brough, 2008).This type of instability is structural and will not be overcome easily by the individual employee's coping mechanisms, and plausibly leaks over to the employee's ability to protect their personal time and manage other demands. According to the JD-R model, job security can be considered as an organizational resource that reduces the psychological costs associated with job demands, allowing employees to allocate psychological resources to work and personal demands instead of to managing their own job prospects.

H1: Job security has a significant positive effect on work-life balance.

2.2.2. Training and Development (TD) and Work-Life Balance (WB)

Training and development is something that is valuable in an organization that provides an employee with knowledge, skills and professional development to enable them to do their job effectively. In health care particularly, well-trained staff not only leads to better clinical performance, patient safety and satisfaction, but it also empowers staff with confidence, capability and a sense of being valued, which are intrinsically linked to satisfaction (Hendy et al., 2024).The indirect, psychological benefit is that unless they know they can do a complicated case, an unfamiliar procedure, or a new complication, they can never get over the feeling that they are not as competent as they need to be, and training helps close the gap. The non-value of unpreparedness is that time, focus and emotional energy is lost that could otherwise be applied to personal and family responsibilities; well-designed training can plausibly generate capacity that can be used to better manage work-life balance--not just task performance. Development opportunities have been shown to have a positive effect on motivation, retention and satisfaction in the healthcare sector and yet, the research findings indicate that limited opportunities are experienced by the majority of healthcare professionals in Pakistan, including paramedics, which affects their confidence, competence and, consequently, their ability to address work demands without them seeping into personal time.

H2: Training and development has a significant positive effect on work-life balance.

2.2.3. Work-Life Balance (WB) and Job Satisfaction (JS)

Work-life balance is the balance between the competing demands of work and of personal life that people attempt to create (Henseler et al., 2016). Healthcare workers are particularly at risk of imbalance, as they often experience unpredictable shifts, longer hours, and the need to work additional hours in an unanticipated patient flow, emergency, or absence from a colleague, which is not seen to the same extent in other professions. WLE has been found to be consistently associated with stress, fatigue, low job satisfaction, and intention to quit (Hussain et al., 2025), And other work-family research findings confirm that a positive WLE is strongly related to overall quality of life rather than job attitudes (Greenhaus et al., 2003a). Work-life balance, as a proximal resource or, alternatively, a proximal demand, directly affects the employee's job satisfaction, as the capacity to protect personal time and recover from work demands contributes to a sustainable and rewarding job experience, which in turn contributes to job satisfaction.

H3: Work-life balance has a significant positive effect on job satisfaction.

2.2.4. Mediating Role of Work-Life Balance between Job Security and Job Satisfaction

Beyond its direct antecedents and consequences, work-life balance is theorized to serve as the mechanism through which job security translates into job satisfaction, rather than job security acting on satisfaction directly and independently. An employee who feels secure in their position is better able to plan personal commitments, protect time for rest and family, and avoid the chronic anticipatory stress that comes with uncertain employment, and it is this improved capacity to balance work and personal demands, rather than job security in the abstract, that plausibly drives the resulting gain in satisfaction. This sequencing is consistent with the JD-R model's emphasis on layered rather than purely direct relationships, and with empirical work suggesting that organizational resources often operate on wellbeing outcomes through intervening mechanisms rather than in a single step (Poma et al., 2025).

H4: Work-life balance mediates the relationship between job security and job satisfaction.

2.2.5. Mediating Role of Work-Life Balance between Training and Development and Job Satisfaction

A parallel mediating logic applies to training and development. Training builds competence and confidence, but its benefit for satisfaction plausibly operates through the extent to which that added competence eases the employee's ability to manage the practical demands of the job without those demands overwhelming personal time and energy. An employee who has been well trained but who continues to experience their job as consuming all of their time and energy may not translate that training into greater satisfaction; it is only once training contributes to a more manageable balance between work and personal life that the psychological benefits of feeling prepared and valued are likely to be fully realized as satisfaction. This is consistent with evidence that development investments pay off through two connected channels, greater proficiency and a reduced sense of being unprepared, both of which plausibly operate on satisfaction via their effect on the employee's overall work-life equilibrium (Alshammari & Alenezi, 2023b).

H5: Work-life balance mediates the relationship between training and development and job satisfaction.

2.2.6 Moderating Role of Job Control (JC) between Training and Development (TD) and Work-Life Balance (WB)

Job control is the level of autonomy employees have in deciding how, when, and in what order their work is carried out. Unlike job security, training, and work-life balance, which describe conditions or states an employee experience, job control describes the degree of agency an employee is permitted to exercise, which is conceptually why it is treated here as a moderator rather than as an additional antecedent resource. Job control has repeatedly been shown to have a positive impact on motivation, sense of responsibility, and psychological empowerment (Akbaş Uysal & Ekiz, 2025a), and it plausibly interacts with training specifically because training only translates into a lighter, more manageable workload if the employee also has the discretion to apply what they have learned when and how it is needed. An employee who is well trained but works within a rigid, tightly prescribed routine may derive comparatively little work-life balance benefit from that training relative to an equally well-trained employee who can deploy new skills flexibly in response to the specific demands of a given day. Job control should therefore amplify, rather than simply add to, the positive effect of training and development on work-life balance.

H6: Job control moderates the relationship between training and development and work-life balance, such that the relationship is stronger at higher levels of job control.

2.2.7. Moderating Role of Training and Development (TD) between Job Security (JSS) and Work-Life Balance (WB)

A further theoretical question concerns whether training and development itself functions as a boundary condition on the relationship between job security and work-life balance, that is, whether the benefit of feeling secure in one's job for managing work-life balance depends on how much training an employee has received. One plausible account is that better-trained employees are more able to convert the psychological safety of job security into concrete gains in how they organize their work and protect personal time, because they have more skill and confidence to draw on once the anxiety associated with insecurity is removed. An alternative account, and the one this study's data ultimately speaks to, is that job security's contribution to work-life balance operates through a largely separate channel, chiefly the reduction of anticipatory anxiety about continuity, that does not depend on the employee's level of training. Because the empirical literature on this specific interaction in the Pakistani healthcare context is scarce (Shah et al., 2016).This study tests the relationship directly rather than assuming its direction or strength in advance.

H7: Training and development moderates the relationship between job security and work-life balance.

2.3. Empirical Review

Job satisfaction has been consistently examined in healthcare settings, where it shows a strong relationship with employee performance, the quality of patient service, and organizational commitment (Thapa et al., 2025). A systematic review and meta-analysis of nurse job satisfaction across Eastern Mediterranean Region hospitals reaches a similar conclusion, finding satisfaction levels that vary by facility type and staffing conditions but that consistently correlate with retention and care quality (Isfahani et al., 2024), a pattern that recurs across diverse healthcare systems and cultures and reinforces that satisfaction is a measure of real consequence rather than a contextually curious organizational statistic. Empirical studies of job security similarly show a strong relationship with job satisfaction: insecurity has been consistently linked to lower motivation and engagement and to increased psychological distress, a bi-directional pattern that appears fairly

robust across studies (Sverke et al., 2002b). Even though it has not yet been fully tested in the Pakistani healthcare context examined here.

Empirical research on training and development shows that training positively affects employees' professional identity and confidence, and that development opportunities contribute to satisfaction by boosting skills and reducing work-related anxiety (Alshammari & Alenezi, 2023c), suggesting that training investments pay off through more than one channel simultaneously. The relationship between work-life balance and job satisfaction is similarly well documented, with broader work on the work-family interface showing that a favorable balance between the two domains is tied closely to overall quality of life (Greenhaus et al., 2003b). And prior research has found a strong link between work-life balance and reduced burnout, with workplace resources appearing to influence satisfaction and wellbeing partly through their effect on work-life balance specifically , lending direct support to this study's mediation hypotheses. Finally, empirical research on job control confirms its importance in reducing job demands: increased autonomy has been found to raise motivation, lower stress, and improve employees' capacity to cope with difficult work situations, consistently reinforcing positive work outcomes across studies (Altaş et al., 2024). Considered together, this body of evidence provides a fairly robust foundation for each individual relationship hypothesized above, but what has not been tested, and what this study's hypotheses are specifically designed to test, is how these relationships operate concurrently within a single structural model set in Pakistan's health sector.

2.4. Conceptual Framework

Drawing on the JD-R model and the hypotheses developed above, this study proposes a conceptual framework in which job security and training and development act as antecedent organizational resources predicting work-life balance; work-life balance, in turn, acts as the mediating mechanism linking both antecedents to job satisfaction; and job control acts as a moderating boundary condition, tested both as a moderator of the training-and-development to work-life-balance relationship and, in the reverse pairing, with training and development tested as a moderator of the job-security to work-life-balance relationship. Figure 1 summarizes these seven hypothesized paths: two direct antecedent effects on the mediator (H1, H2), one direct effect of the mediator on the outcome (H3), two mediated pathways (H4, H5), and two interaction effects (H6, H7). Each

arrow in this framework corresponds to a specific structural path estimated and reported in Section 4.

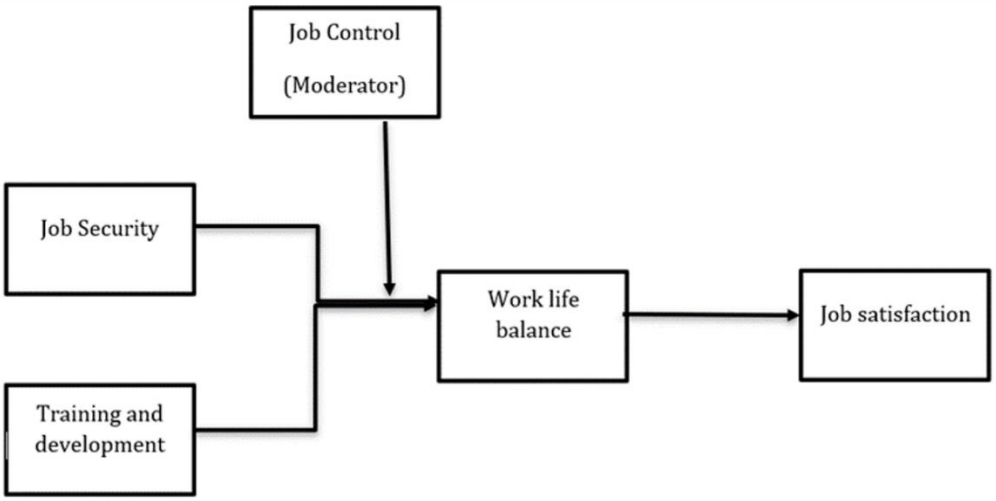


Figure 1: Conceptual framework

3. Research Methodology

3.1. Research Design and Data Collection

A quantitative, cross-sectional survey design was employed to evaluate the hypothesized direct, mediating, and moderating relationships as recommended by the current best practice for the use of PLS-SEM and for reporting the findings from PLS-SEM (Hair et al., 2019). The cross-sectional design was appropriate for the study because the research questions are concerned with the current associations between job security, job training, job control, work-life balance and current levels of satisfaction rather than change over time or as a result of a specific intervention, and the tests of a set of theory-derived hypotheses with measurable constructs were suitable for a quantitative approach. The questionnaire was sent through Google Forms, e-mail, and various online platforms to hospital staff in hospitals throughout Pakistan such as paramedics, nurses, administrative, medical technologists, and supporting staff. Online, self-administered distribution was selected as a way to reduce the time and disruption required by an already labor-constrained staff, enable respondents to complete the survey at their own convenience and reduce socially desirable bias (in particular on issues of perceived job insecurity) when completing sensitive items (Harris et al., 2024).

Considering the methodological comparison of convenience sampling with purposive sampling where the former is more feasible due to the fact that facilities are scattered across the country and representation of specific groups is not a priority but rather timely access to willing respondents (Etikan, 2016), the non-probability convenience sampling technique was used. Sample size was determined by the ten-times rule for SEM, which suggests that a minimum sample size of at least ten times the number of indicators on the largest construct block in the model is needed (Jhantasana, 2023), as well as general guidance from HRM and organizational-behavior research for the larger samples frequently necessary to achieve sufficient power when using models that test mediation and moderation together, due to the standard errors of mediation and moderation typically being larger than those of simple mediation effects. From this, a sample size of 250 to 350 people was determined. A total of 260 responses were received, after discarding 1 case with significant missing data, 259 responses were kept and the range is comfortably within the target. In addition to the direct effects, the indirect effects of the mediation hypotheses were evaluated with bootstrapped resampling techniques that provide more reliable inferences about indirect effects than do methods that assume normally distributed sampling distributions (Preacher & Hayes, 2008).

3.2. Measurement of Variables

Each of the five constructs in this study – job security (JSS), training and development (TD), work-life balance (WB), job control (JC), and job satisfaction (JS) – was measured reflectively using multiple items from previously published organizational-behavior and healthcare survey instruments. All items were measured using a five-point Likert scale ranging from 'strongly disagree' (1) to 'strongly agree' (5). The questionnaire comprised 27 indicators in total across the five constructs, and internal consistency, convergent validity, and discriminant validity were assessed for every construct before hypothesis testing, following recommended practice for healthcare-based questionnaires adapted to a new professional population (Youssef et al., 2023). Table 1 summarizes the constructs, their role in the model, and the number of retained indicators.

Table 1: Constructs and Their Role in the Model

CONSTRUCT	ABBREVIATION	ROLE IN MODEL	SCALE
JOB SECURITY	JSS	Independent variable (antecedent resource)	5-point Likert
TRAINING AND DEVELOPMENT	TD	Independent variable (antecedent resource)	5-point Likert
WORK-LIFE BALANCE	WB	Mediating variable	5-point Likert
JOB CONTROL	JC	Moderating variable	5-point Likert
JOB SATISFACTION	JS	Dependent variable	5-point Likert

3.3. Profile of Respondents and Unit of Analysis

Since the concepts of job satisfaction, perceived job security and perceived job control are perceived rather than institutionalized averages, the unit of analysis for this study is the individual healthcare worker. The final sample consisted of 259 valid responses from healthcare workers and paramedics in hospitals throughout Pakistan, including nurses, administrative staff, medical technicians, and support workers, among others, representing a wider spectrum of healthcare professionals than just paramedics. The raw responses for all items were measured on the 5 point Likert scale described above and descriptive screening of these raw responses indicated that none of the items had a ceiling or floor effect such as to limit the spread of scores used for estimating the paths, with the means at the construct level ranging from 2.9 to 3.1, with no obvious tendency to favour the extremes of the scale.

4. Emperical Findings

Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to analyze the data, suitable for this study as it supports the estimation of direct, mediating, and moderating relationships in a single model and it is reliable for non-normally distributed data, which is commonly found in survey-based organizational research (Sarstedt et al., 2021), and moderate sample size (Hair et al., 2019). Like in the typical reporting in PLS-SEM, the chapter is divided into two sections: (1) the measurement (outer) model is studied to establish the reliability and validity of the indicators as representations of the constructs measured and (2) the structural (inner) model is examined to assess the research hypotheses (Sarstedt et al., 2021).

4.1. Data Screening and Sample

260 responses were received from sampled hospitals, comprising both healthcare staff and paramedics. After removing one case that had a great deal of missing data, 259 valid cases remained for the PLS-SEM analysis, reflecting a sample size sufficient by the 10 times the largest indicator block rule of thumb that the sample size was initially calculated with, and well within the 250-to-350 range sought in Section 3.1.

4.2. Measurement Model Assessment

The measurement model represents the observed items that measure the constructs of job security (JSS), training and development (TD), work-life balance (WB), job control (JC), and job satisfaction (JS). The measurement model was assessed for indicator reliability, internal consistency reliability, convergent validity, and discriminant validity since all constructs are reflective. The outer loadings of each item on each assigned construct was used to assess indicator reliability. In the above, no item loaded below the conventional 0.70, with the majority of items loading above .80 (with the minimum loading being at JSS3 with 0.746 and a maximum loading at JC5 of 0.864).

The internal consistency was assessed through Cronbach's alpha values and composite reliability values (rho_a and rho_c) while the convergent validity was assessed through average varianceextracted (AVE). These data are summarized in Table 2.

Table 2: Construct Reliability and Convergent Validity

CONSTRUCT	CRONBACH'S A	COMPOSITE RELIABILITY (PA)	COMPOSITE RELIABILITY (PC)	AVE
JOB SECURITY (JSS)	0.850	0.853	0.893	0.626
TRAINING & DEVELOPMENT (TD)	0.909	0.910	0.930	0.688
WORK-LIFE BALANCE (WB)	0.874	0.874	0.909	0.665
JOB CONTROL (JC)	0.884	0.902	0.914	0.681
JOB SATISFACTION (JS)	0.900	0.901	0.923	0.667

All constructs had Cronbach's alpha values above 0.70, and all composite reliability coefficients were above 0.50, which is recommended to validate convergent validity. All AVE values were

above 0.50, recommended to establish convergent validity. The lowest (but still satisfactory) AVE was found in Job Security (AVE = 0.626), and the highest was found in Training and Development (AVE = 0.688), suggesting that the indicators of each construct are internally consistent, and the average of all the indicators of each construct explains more than half of the variance in the construct.

4.3. Discriminant Validity

The heterotrait-monotrait ratio of correlations (HTMT), recommended by PLS-SEM, was used to assess discriminant validity, which means that the constructs that are supposed to be conceptually different are also empirically different, and was also analyzed using the Fornell-Larcker criterion.

Table 3: Heterotrait-Monotrait Ratio (HTMT) Matrix

	JC	JS	JSS	TD	WB
JC	—				
JS	0.048	—			
JSS	0.076	0.555	—		
TD	0.058	0.060	0.129	—	
WB	0.244	0.654	0.446	0.784	—

Each of the HTMT values was below the conservative level of 0.85, with the highest value occurring between Work-Life Balance and Training and Development (0.784), which was still sufficiently low to not indicate a problem with discriminant validity as would be suggested by a value above 0.85, yet high enough given the strong substantive relationship between these two constructs later in the structural model. The Fornell-Larcker check also reflected the same findings, as the square root of each construct's AVE (JC = 0.825; JS = 0.817; JSS = 0.791; TD = 0.829; WB = 0.816) was greater than the correlation between it and every other construct in the model. Thus, across all five constructs, discriminant validity is achieved. Each of the variance inflation factors (VIF) of the outer model indicators was well below the conservative value of 3.3, suggesting that collinearity of indicators within each block of the model indicators is not a concern for the reliability of the reported loading estimates above.

4.4. Structural Model Assessment

Validation of the measurement model was carried out and then the structural model was validated by examining inner-model collinearity, coefficient of determination (R^2), effect size (f^2), significance of path coefficient by bootstrapping with 5,000 subsamples and overall model fit. The inner VIF (VIFs) of all predictor constructs of Work-Life Balance and Job Satisfaction ranged between 1.00 and 1.11, suggesting that the structural path estimates that follow are not distorted by collinearity among the predictor constructs of the model.

The model explained 66.5% of the variance in Work-Life Balance ($R^2 = 0.665$, adjusted $R^2 = 0.658$) and 33.8% of the variance in Job Satisfaction ($R^2 = 0.338$, adjusted $R^2 = 0.335$). The explanatory power of the respective models is high (WLB) and medium (JS), where high and medium are appropriate for the two models, respectively, with the latter being generated only indirectly by the independent variables in the model, but directly by Work-Life Balance. Coefficients of Cohen's f^2 for each predictor were estimated for the contribution of each to its endogenous construct's R^2 without regard to its statistical significance. The training and development had very large influence on Work-Life Balance ($f^2 = 1.364$) and Work-Life Balance had large influence on Job Satisfaction ($f^2 = 0.510$). The path coefficient of Job Security × TD was negligible and the path coefficient of Job Control × TD was small-to-medium, medium-to-large, and medium for job security, job control and interaction term, respectively.

4.5. Structural Path Estimates and Hypothesis Testing

A bootstrapping procedure was used to evaluate the significance of the paths at 5% significance level with 5000 subsamples, which is the conventional method for the inference of PLS-SEM. The standardized path coefficient, t-statistic and p-value for each path are presented in Table 4 for the paths that are in the estimated model.

Table 4: Structural Path Coefficients (Bootstrapping, 5,000 Resamples)

PATH	B	T-STATISTIC	P-VALUE	DECISION
JSS → WB	0.297	7.651	< .001	Significant
TD → WB	0.714	23.012	< .001	Significant
JC → WB	0.225	5.257	< .001	Significant
JC × TD → WB	0.188	4.443	< .001	Significant

JSS × TD → WB	0.009	0.277	.782	Not significant
WB → JS	0.581	14.140	< .001	Significant

Five of the six probable routes were of great importance ($p < .001$). Job Security ($\beta = 0.297$) and Training and Development ($\beta = 0.714$) were both positive strong predictors of Work-Life Balance, with Training and Development, by far, being the stronger antecedent. Job Control had a significant positive direct effect on Work-Life Balance, while the interaction between Job Control and Training and Development (JC × TD) itself was a significant positive predictor of Work-Life Balance, suggesting a true moderation effect which is explored in Section 4.7. The interaction between Job Security and Training and Development (JSS × TD) was not significant, which implies that the influence of job security on work-life balance is independent of the level of training of the employees. Finally, Job Satisfaction itself, the largest standardized effect in the model, was a strong, significant, predictor if Work-Life Balance ($\beta = 0.581$).

4.6. Summary of Hypothesis Testing

Table 5 presents the structural results reported in Section 4.5 as part of the seven hypotheses of the study (two direct antecedent effects on Work-Life Balance – H1, H2, two direct effects of Work-Life Balance on Job Satisfaction – H3, two mediation effects – H4 and H5, and two moderation effects – H6 and H7).

Table 5: Hypothesis Testing Summary

HYPOTHESIS	RELATIONSHIP	RESULT
H1	Job security → Work-life balance	Supported ($\beta = 0.297$, $p < .001$)
H2	Training & development → Work-life balance	Supported ($\beta = 0.714$, $p < .001$)
H3	Work-life balance → Job satisfaction	Supported ($\beta = 0.581$, $p < .001$)
H4	WB mediates job security → job satisfaction	Supported ($\beta = 0.173$, $p < .001$)
H5	WB mediates training & development → job satisfaction	Supported ($\beta = 0.415$, $p < .001$)
H6	JC moderates training & development → WB	Supported ($\beta = 0.188$, $p < .001$)
H7	Training & development moderates job security → WB	Not supported ($\beta = 0.009$, $p = .782$)

Six out of seven hypotheses were confirmed. H1 and H2 indicate that job security and training and development are both important, positive indicators of work-life balance, but training and development is by far the most influential. H3 shows that the work-life balance in turn also significantly predicts job satisfaction. The results of H4 and H5 support the mediation of work-life balance between the two antecedents and job satisfaction. H6: Job control definitely improves the linkage between training and development and work-life balance. The study on the moderating effect of training and development between job security and work-life balance (H7) was not supported as the interaction term was small and non-significant, suggesting that job security's impact on work-life balance was not significantly influenced by the level of employees' training.

4.7. Mediation Analysis

The specific indirect effects found in Table 6 are the direct test of the research hypotheses that mediated between both independent variables and Job Satisfaction, and are only indirect effects because they go through the mediating variable, namely Work-Life Balance.

Table 6: Specific Indirect Effects

INDIRECT PATH	B	T-STATISTIC	P-VALUE
JSS → WB → JS	0.173	6.267	< .001
TD → WB → JS	0.415	13.231	< .001
JC → WB → JS	0.131	4.858	< .001
JC × TD → WB → JS	0.109	4.146	< .001
JSS × TD → WB → JS	0.005	0.275	.783

For indirect effect of Job Security on Job Satisfaction, the value of β is positive and significant (β = 0.173, $p < .001$), which supports H4. The indirect impact of Training and Development to Job Satisfaction via Work-Life Balance was also positive and significant, and was fairly large in magnitude (β = 0.415, $p < .001$), and was found to support the hypothesis H5. Since the model specifies only indirect effects of the Work-Life Balance on Job Satisfaction and no direct effects from Job Security or Training and Development to Job Satisfaction, the indirect effects are by construction also equal to the total effects of each predictor on Job Satisfaction. Thus, the results are consistent with full mediation—that is, work-life balance seems to be the pathway by which job security and training and development relate to higher job satisfaction, and not either predictor directly to job satisfaction.

4.8. Moderation Analysis

There is a significant interaction effect on Job Control and Training and Development in the model that resulted in the Work-Life Balance, suggesting that Job Control conditions the relationship between Training and Development and Work-Life Balance. Simple slope analysis was employed to estimate the conditional effect of Training and Development on Work-Life Balance at low (−1 SD), mean and high (+1 SD) levels of Job Control.

Table 7: Simple Slopes — Training & Development → Work-Life Balance, Conditional on Job Control

LEVEL OF JOB CONTROL	TD → WB SLOPE (B)	T-STATISTIC	P-VALUE
JOB CONTROL AT −1 SD (LOW)	0.525	13.434	< .001
JOB CONTROL AT MEAN	0.714	23.012	< .001
JOB CONTROL AT +1 SD (HIGH)	0.902	14.286	< .001

The more a worker has autonomy, the stronger the link between Training and Development and Work-Life Balance, as evidenced by the increase in slope from $\beta = 0.525$ for low autonomy to $\beta = 0.902$ for high autonomy. Theoretically, the training effect on work-life balance is greatest in situations where employees have some hands-on control over how and when they use what they have learned, as is the case with job control: just as training itself creates capability, job control enables employees to transform that capability into a lighter, less stressful workload. This finding substantiates H6 and provides hospital administrators a clear and actionable suggestion: a training investment will probably have decreasing results on work-life balance unless combined with an actual increase in the employees' own discretion regarding their work.

In contrast to H6, H7 examined whether training and development would moderate the relationship between job security and work-life balance, which was the opposite of the configuration to H6. This interaction (JSS × TD → WB) was not significant ($p = .782$) and its effect size was negligible ($f^2 < 0.001$), indicating that the contribution of job security to work-life balance does not seem to be moderated by training, as in the case of job control in H6. When combined, the two variables H6 and H7 indicate that job control is the boundary condition relevant to this study's model; in that regard, there is relevance to the finding that job control is a boundary condition that signals hospital

managers to invest in employee autonomy to boost the returns on training, not to assume that any two organizational resources will reinforce each other interchangeably.

4.9. Model Fit and Predictive Assessment

The standardized root mean square residual (SRMR) and the normed fit index (NFI) were used to evaluate the overall fit of the model. Measurements of SRMR (0.047) and NFI (0.885) were both within the conventional acceptable range for the saturated model. The estimated model was not withstood by either of the SRMR or NFI; these values increased to 0.106 and 0.849, well above the conventional cutoffs of 0.08 or 0.90, respectively. The gap indicates that the measurement model is able to explain the observed correlations very well, but that the structural specification with full mediation by Work-Life Balance has been unable to capture the data fully; that is, there is some structural relationship that is not fully explained by the model. In fact, it is worth noting that SRMR and NFI were developed for covariance-based SEM, and that their cutoffs do not easily translate to PLS-SEM, which is at the heart of the PLS-SEM approach, and which focuses on prediction and explained variance (Shmueli et al., 2019); nonetheless, the higher estimated-model SRMR provides a good indication that a partial-mediation alternative (including direct paths from Job Security and Training and Development to Job Satisfaction alongside the indirect ones reported here) would be a sensible robustness check, though the substantive conclusions reported herein are unlikely to differ materially.

A post-hoc power analysis was performed after the study was complete, which is based on the observed path coefficients and the size of the achieved sample size, and confirmed that the study was sufficiently powered to detect all significant effects reported above. Achieved power was over 91% for all 5 significant paths and over 99% for 3 of them (JSS → WB, TD → WB and WB → JS) at $\alpha = 5\%$. In contrast to the non-significant JSS × TD → WB path, however, only 6.8% power was achieved at $\alpha = 5\%$, and the minimum number of respondents needed to detect a size of effect that large at 80% power would be ~70,855, which is several orders of magnitude higher than the number that could be reasonably studied.

4.10. Additional Descriptive Statistics

While PLS-SEM is not based on the assumption of multivariate normality, multivariate normality is not necessary for the production of valid parameter estimates, however, bootstrapping does not

depend on a normality assumption, it remains good practice to inspect the shape of each construct's response distribution. Table 8 shows means, standard deviations, skewness and excess kurtosis for the composite (item-averaged) score on each of the constructs for all 259 cases retained.

Table 8: Descriptive Statistics and Normality Indicators (N = 259)

CONSTRUCT	MEAN	SD	SKEWNESS	EXCESS KURTOSIS
JOB SECURITY (JSS)	2.918	0.809	0.059	−0.155
TRAINING & DEVELOPMENT (TD)	3.040	0.947	−0.023	−0.645
WORK-LIFE BALANCE (WB)	3.062	0.880	0.245	−0.337
JOB CONTROL (JC)	3.021	0.926	−0.076	−0.847
JOB SATISFACTION (JS)	3.002	1.046	0.014	−0.855

The composite mean scores for each construct were around the midpoint of the response scale (between 2.918 and 3.062), suggesting that the respondents on average did not strongly agree or disagree with the items, and that the entire response scale was used effectively. The skewness ranged from −0.076 to 0.245 (Job Control to Work Life Balance) and the excess kurtosis ranged from −0.847 to −0.155 (Job Control to Job Security).all within the range commonly considered to be approximately normal, ±1 (Cain et al., 2017), indicating that none of the five constructs had a pronounced floor effect, ceiling effect, or heavy-tailed distribution that would warrant concern about the composite scores used in the structural analysis.

5. Discussions and Implications

5.1. Discussion

This study aimed to explore the relationship between job security, training and development with healthcare employees job satisfaction and work-life balance as a mediator variable moderated by job control under the JD-R model in Pakistan. This framework is supported by the results. Job security and training and development both had significant and positive effects on work-life balance (H1 and H2 supported), respectively with training and development being the stronger of the two predictors, with a β of 0.714 compared to 0.297 for job security. This is informative in itself: the sense of job security can alleviate anticipatory anxiety about continuity, but the buildup

of skills and confidence through development seems to do a lot more to help employees deal with the "real" day-to-day demands of an occupation in health care without the demands taking over their lives. Work-life balance, in turn, was the strongest predictor in the entire model ($\beta = 0.581$, H3 supported), and both of the antecedents' effects on job satisfaction were fully mediated by work-life balance (H4 and H5 supported), suggesting that work-life balance was a substantively important mediator of job satisfaction in recent nurse-focused PLS-SEM studies across healthcare workers and countries (Gautam et al., 2025).

The modulations in the results of the moderations are another layer of nuance. Job control also had a significant effect on the link between training and development and work-life balance (H6 supported), with a corresponding increase in the slope of the training-to-work-life-balance relationship from one SD below to one SD above the mean (from $\beta = 0.525$ to $\beta = 0.902$). This is in line with other studies outside of the healthcare field, which find that workload is not linked to outcomes related to work-life balance, whereas autonomy is, and is consistent with the theoretical explanation that training increases capability and job control is what enables employees to turn this capability into a real reduction in workload (Johari et al., 2018). In contrast, training and development failed to moderate the link between job security and Work-life balance (H7 was not supported), with a post hoc power analysis indicating that this null finding is due to a genuinely small population effect, not too few observations. Taken together, H6 and H7 tell us that job control is the pivotal boundary condition in this model (and not training) and suggest that autonomy should be the focus for hospital leaders to maximize the return on training investments.

5.2. Theoretical Contribution

The following are some of the ways in which this study is a contribution to the JD-R literature. Firstly, it combines the concepts of job security and training and development as antecedent variables, work-life balance as a submediating process, and job control as a submoderating boundary condition in one structurally coherent and empirically tested model which has not been seen in previous studies (Rehman et al., 2025). Second, the study provides a mechanism which has been claimed in the Pakistani healthcare literature but not sufficiently tested, as work-life balance offers a full mediation between the two sets of variables, organizational resources do not seem to influence satisfaction directly, but through their impact on employees' work-life balance. Third, the asymmetric moderation results further broaden the recent focus of the JD-R model on the

interaction of resources with each other instead of assuming them as operating in a simple additive manner (Bakker & Demerouti, 2017b), as results show that not all pair of resources moderate each other; boundary conditions need to be tested and not assumed. Lastly, situating the test in the particular setting of Pakistan, with high patient demand, precarious contractual arrangements, and limited opportunities for professional development, the study broadens the applicability of the JD-R model, whose underpinning evidence has been developed in more resource-rich settings in which patient demands are less high and contractual arrangements more stable (Gynning et al., 2024b).

5.3. Practical Implications

The most obvious practical consequence for hospital administration and human resource departments is that enhancement of job satisfaction is not likely to be a direct result of enhancements in job security or training; both seem to have a significant impact on job satisfaction only when they enhance the work-life balance. Better job security, such as more predictable contract renewal and more communication about job continuity, is likely to improve satisfaction, which will also be boosted with more training opportunities and development opportunities — but it seems best for administrators to assume that these interventions will lead to better satisfaction with job security, rather than assuming that the pay-off will be there. Secondly, more specifically, the stronger moderating effect of job control suggests that investments in the curriculum alone will likely be less successful unless they are complemented by increases in autonomy over how and when the skills are applied, and that hospital managers interested in maximizing the return from training investments must go beyond investments in training and also invest in increased autonomy to front-line workers over the scheduling, delegated decision making or other tangible ways to enable front-line workers to gain autonomy over how and when they are able to apply new skills (Akbaş Uysal & Ekiz, 2025b). Third, policies aimed at making jobs contractually more secure do not seem to have had the same impact on job control, implying that policies aimed at increasing autonomy could be pursued and implemented in parallel to policies aimed at increasing job control. The findings suggest that structural reform – not just providing more resources – is a key way to enhance retention and quality of care in a system in dire need of staff, and that autonomy-enhancing organizational design is a key pathway for maximizing the value of those investments for policymakers.

5.4. Restrictions and Future Studies

There are several limitations to the results of these analyses. The cross-sectional design only allows the study to establish statistical association and while it can provide a theoretically justified causal direction, it is not as likely to rule out reverse causality or confirm causal order as a longitudinal study or experimental design (Antonakis et al., 2010); (Spector, 2019).Second, a partial-mediation re-specification was intentionally omitted, but this specification is also increasingly recommended by the mediation literature, as a robustness check to be performed before claiming either the full mediation or the partial mediation specification as final, as theoretical work continues (Zhao et al., 2010); (Nitzl et al., 2016). Third, the elevated estimated-model SRMR reported in Section 4.9 needs to be interpreted along the lines of a methodological discussion on whether and how fit statistics that come from covariance-based SEM are applicable to PLS-SEM (Rönkkö & Evermann, 2013); (Sverke et al., 2002b). The reporting convention used in this study was the main stream reporting convention for the PLS-SEM study approach, however readers should take the fit statistics as a relative measure and not as an absolute pass fail criterion.

Fourth, all five constructs were measured on the same self-administered questionnaire, and there may be some common method bias in the data (Podsakoff et al., 2012); however, there were no full statistical tests of common method bias in this study and these should be included to enhance future research. Fifth, the sample was a convenience sample, which might have compromises the replicability of this study because the sample may not be a probability sample (Etikan, 2016). Future studies should therefore undertake a partial-mediation robustness check, formally test for common method bias, and, if feasible, perform a replication (longitudinal or probability-sample) to other workers in the health system of Pakistan, and other resource-constrained health systems in general, to confirm the extent to which the present pattern of results generalizes.

6. Conclusion

The purpose of the present study was investigating the direct, mediational and moderating effects of job security, training and development, work-life balance, job control and job satisfaction on the healthcare sector employees and the paramedics working in Pakistan within the Job Demands-Resources model using PLS-SEM. Job security, training and development were both significant predictors of work-life balance, which fully mediated both factors on job satisfaction; and work-

life balance was a significant predictor of job satisfaction, which then fully mediated the effect of job security and training and development on job satisfaction. In this model, job control (and not training) was a strong predictor of relationship between training and development and work-life balance, while training and development did not buffer the relationship between job security and work-life balance. Of the seven hypotheses tested six were confirmed. The findings in this study indicate that Job Satisfaction in health sector in Pakistan is not only dependent on the organizational resources but also on the extent to which these resources enable a direct, manageable work/life balance and the autonomy is the key for making investments in training pay off. For a health system under the pressure of staffing, this is a clear, mechanism-based road map to success: Workforce security and training is always a good investment, but its most value and promise for employee wellbeing – and therefore, retention and care – will likely be realized only when accompanied by a meaningful improvement in employees' control over their own work and ability for real experience of improved work-life balance.

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