

The Role of Work-Life Balance and Transformational Leadership on Job Satisfaction, Work Motivation, and Employee Productivity in Universities of Pakistan

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ABSTRACT

This research study explores the relationship between transformational leadership and work life balance with employee productivity among academics and administrative employees in public university of Punjab in Pakistan with job satisfaction and transformational work motivation as mediators. The study fills the empirical void by validating a complete mediator model in the Pakistan higher education sector based on grounded and social exchange theory and self-determination theory. The researcher conducted the quantitative survey to 102 university Teachers in five namely Lahore, Rawalpindi, Faisalabad, Rawalpindi and Gujrat. The analysis technique used in this study was partial least square structural equation modeling (PLS-SEM) with software Smart-PLS 4. The results of the measurement model showed sufficient reliability, convergent and discriminant validity for all constructs. A number of reviews have confirmed that there is a significant and positive relationship between finding a balance between work and life and transformational leadership and both job satisfaction and work motivation. However, of all factors job satisfaction did not exert any direct significant effect on employee productivity but only work motivation. Work motivation was identified as the main mediation construct while job satisfaction did not mediate either relationship. The study will give some guidelines to the university administration and higher education commission of Pakistan.

Keywords: Work-life Balance, Transformational leadership style, Job satisfaction, Work motivation, Employee Productivity

INTRODUCTION

Human resources are the most critical component of an organization's achievements which depend largely on the quality and productivity of their staff to attain institutional objectives, ensure service quality and achieve sustainability. With the increasing responsibilities of universities about increased research production, excellent teachers and speedy administration as expected from the employees, but less availability of institutional resources towards them, it has become important to increase the productivity of all the employees in the public universities of Pakistan. The strengthening of faculty development, institutional capacity and staff performance continues to be ranked as a national priority for higher education as per Higher Education Commission (HEC) Annual Report (2022–2023) (Arshad *et al.*, 2025). However, a lot of college staff still toil on overworking labor, have unclear job expectations, and still do not get strong guidance from a management or leader to build their job satisfaction and work motivation, impacting their overall productivity or the effectiveness of an organization (Kipkoech, 2018).

Of the different organizational factors, those that have been investigated extensively are the effects of employee outcomes work, life balance and lifestyle. Work life balance is a combination of an employee's ability to achieve balance between work tasks and commitments and personal and family duties. Susanto *et al.* (2022) Stated in a study that the SEM-PLS analysis shows that (WLB) has positively affected job performance as well as (JS) of employees. Signifies that WLB is a key determinant in positive workplace outcomes. With the aim of getting more research work and in turn more output from the universities from HEC, work-life balance is not easy to maintain by faculty members and as they spoke, the majority of their duty requirements were in clash with their private life requirements, which in turn reduced their satisfaction and motivation. Kamran *et al.* (2013), confirms that in a study conducted from private sector universities of Pakistan, states that employee productivity and job satisfaction are directly impacted by work-life equilibrium.

Transformational leadership involves a "shared vision" that is developed by visionary leaders who inspire staff to act by fostering innovation, thinking and individualized support. A study carried out in the telecom sector in Pakistan by the researchers connected with Greenwich University (2024) uncovers that TLS has an impact on JS of the staff member whose commitment along these lines with the organization has likewise been found to be significantly affected by TLS, supporting its viability as a sort of leadership in organizational constructions inside Pakistan (Hashmi *et al.*, 2025). Based on the secondary findings from the higher education institutions in Pakistan these leading institutions found that transformational leadership directly affected the innovative work behavior and task performance of employees, as revealed by structural equation modelling among the higher education institution's leaders and employees. To these findings it is understood that leadership style of superiors and various departments of universities in Pakistan is affecting academic and administrative members of the university as well as their attitude and motivation.

Work-related topics such as how to achieve balance, transforming lifestyle, satisfaction with one's job, and productivity at the workplace have been investigated separately in our diverse industries banking, hospitality, and telecommunication (Rana *et al.*, 2024). But there is a lack of attempts to study these factors simultaneously in the higher education system of Pakistan. There is a little empirical evidence explaining how WLB and transformational leadership influence employer productivity through the combined mediating roles of the job satisfaction, and work motivation. In this context, the present study constructs and test and integrated research framework of public university in Punjab, Pakistan.

This study holds some importance in three aspects. In theory, it is anchored on the organizational behaviors literature which proposes and tests a mediated model which links, how job satisfaction influences work motivation, how work motivation influences how work-life balance influences employee productivity, and how transformational leadership influences the same (Tremblay *et al.*, 2009). These findings offer a practical recommendation to Pakistan university authorities, departmental heads, and human resource managers that the investment in policies and development of result-oriented staff satisfaction and promotion of work-life balance through the development of leadership capabilities among supervisors can enhance staff member satisfaction, staff member motivation and thereby enhance their productivity. The study presents research-based evidence to Higher Education Commission of Pakistan and its policy makers in launching faculty welfare programmed, development programmers of leadership and institutional reform programmed connected with strategic priorities of HEC of Higher Education Efficiency, Quality and Improvement in Higher Education.

This study's scope is limited to academic and administrative employees of Punjab's University in Pakistan. The five core variables of this research examined are: Independent variables are Work-Life Balance and Transformational Leadership Style, Mediating variables as Job Satisfaction and Work Motivation and Employee Productivity as the dependent variable. In this study, the method applied is quantitative research method which is conducted to the representative sample of required university staffs by making a structured type of questioner. Findings and results do not generalize for non-Punjab universities since they are private sector ones but contribute constructively to providing knowledge

and insight into employee productivity in relation to human resource conditions in Pakistan's public universities.

This paper has been divided into 5 chapters to make an understanding of the role of WLB and TLS upon JS, WM and EP in a university of Punjab (Pakistan). First chapter explains the background of the papers, problem statement and research gaps, scope, significance and objectives of the papers. The second chapter of the paper is a review of literature, followed by building up the theoretical framework and hypotheses. The research methodology, which involves their design, population, sampling and data collection, as well as the measurements of their variables, is in the third chapter of the paper. It presents its findings of the empirical research in fourth chapter which comprises its descriptive statistical analysis, reliability, and validity, and the testing of its hypothesis. The section that contains the future research (discussion and conclusions, implications and limitations, and recommendations) is found in 5th chapter in the paper.

LITERATURE REVIEW

Work life balance not only represents but also reflects an employee's capability of managing both the work and the personal/family needs without getting their working capacities to affect each other and vice versa. Consistent higher levels of satisfaction, motivation and increased output of frequently healthy WLB by employees creates healthy professionalism. Susanto *et al.* (2022) Stated in their studies that, through SEM-PLS analysis, proved that work-life equilibrium is an important one in organizational framework as it has positive impact on the JS and job performance related to its work and private reaction dispositions of SME employees. ul Hassan *et al.* (2023) urged in their studies that the sustainability found that work-life equilibrium has effect on personal satisfaction, professional satisfaction, and that work-life balance has effect on employee's motivation and scores of productivities. HEC guidelines for curriculum reforms in Pakistani Universities have brought enormous changes to the workload of employees leaving them unable to maintain their personal time, thereby impacting their productivity and organizational contribution to the University. The results all point to the fact that the organizational structure in the framework of the EP is based on the foundation of WLB.

H1: Work-life balance significantly and positively impacts Job satisfaction.

H2: Work-life balance significantly and positively impacts Work motivation.

The work-life balance has positively and significantly influence on Work motivation. Complaining leadership is a leadership style in which the leader motivates the worker to become creative, considers the individual worker and acts as a role model in terms of ethics. Jiatong *et al.* (2022), demonstrated in their research published in frontiers in psychology, with study participants comprising 845 hotel staff, confirmed that transformational leadership had a positive and significant effect on both organizational commitment and job performance, and that employee engagement was one of the partial mediators in these relationships. Furthermore, a study published in the nursing reports Notarnicola *et al.* (2024), demonstrated that the transformational leadership has significant effect in the degree of job satisfaction and personal mastery of the employees working in all organizational framework explaining his effectiveness in various working contexts. While a possible systemic approach that researchers are now looking at in 2024 (2018-2023) and reflexing on in the area of Syntax Transformation, the following results on the connection between transformational leadership and job satisfaction/employee performance can be swiftly stated: Transformational leadership positively relates to job satisfaction and employee performance across a variety of organizational frameworks (Wehrich & Koontz, 1993). The results of the findings confirmed that in the context of Pakistan Universities the behavior of adult transformation leadership (ATL) of supervisors and department head with respect to Pakistani employees (individuals) is directly correlated with higher level of satisfaction, higher level of motivation and consequently hence higher level of the

productivity level among individuals. The transformational leadership style has a significant positive and significant negative effect on job satisfaction respectively.

H3: Transformational leadership style has a significant positive effect on job satisfaction

H4: Transformation leadership style has a significant positive effect on work motivation.

Job satisfaction is the overall assessment of one's experience of work (such as recognition, supervision, workload and opportunity for development). It is the first mediator variable between the two while this study is conducted. The findings from the study carried out by (Guvhu *et al.*, 2025) was obtained that the JS has a very strong effect, positive and is one of the key mechanisms in which the organizational conditions given consideration turned organizational employee productivity iron. A study by Zeytinoglu *et al.* (2011), confirms again that the employees with which companies' dispute show the organization's employees become more productive in industries as a result of their high level of job satisfaction, due to the decreased turnover rates and higher involvement in the organization. For university staff members in Pakistan, job satisfaction is of high importance since the university staff showing a higher degree of job satisfaction are significantly more productive in their role of teaching, research and administration than less productive counterparts who are less satisfied with their jobs.

H5: Job satisfaction significantly and positively affects the employee productivity.

Work motivation is the internal and external motivators that guide, activate and intensify a worker's effort to attain work goals. This serves as the second mediator in this model. The above study published in the international journal (IJBE) of the applied business and economics confirms that impacts of motivation are very positive and significant to employee's performance as well as it has direct relationship to motivation and through mediation of JS, confirming the dual role function of motivation in the productivity chain. The results from the PMC study are also in line with other studies: Motivation is associated with higher performance, and especially intrinsic motivation sustained the employment performance and other measures of proactive behaviors. The results reveal that those who are feeling internally motivated, through purposeful work, growth opportunities to their careers and recognition, have higher and enduring productivity in the context of university levels of Pakistan as compared to those who feel low internally or have low external motivators levels.

H6: Work motivation significantly and positively affects the employee productivity.

Job satisfaction is not just a result of organizational conditions but is also a key process facilitating the work life balance and transformational leadership efforts in the context of employed productivity. Empirical, as published in 'Frontiers in psychology' Susanto *et al.* (2022), has confirmed that JS partially mediates a relationship between WLB and job performance, suggesting that the productivity to enhance effective WLB at organizational level works significantly through satisfaction at employee level. Therefore, a study as published by the Kaya (2024) further finds a significant mediation pathway between WLB practices and employer performance which further corroborates the mediation pathway that was proposed in the study. In terms of leadership, studies show on numerous occasions that the effect of transformational leadership on the productivity of employees is significantly mediated by job satisfaction; this is because a leader who inspires and encourages his employees will first make them happy, which in turn will result in greater productivity on their part (Yang & Zheng, 2011). It was concluded that working life balance significantly impacts employee's productivity, while job satisfaction plays a significant mediating role in the relationship between those two.

H7: job satisfaction is a significant mediator of the relationship between work-life balance and employee's productivity.

H9: job satisfaction is a significant mediator of the relationship between transformational leadership style and the employee's productivity.

Work motivation is the second mediating path between work life balance and employee productivity with the transformational leadership. A healthy work-life balance among employees can lead them to reduce stress and to increase their energy, thus enhancing their intrinsic motivation to work effectively. For the second finding, a previously published international research journal study, in business and social science, verified that work and work-life balance are indeed two factors that provide a path for affecting the performance of employers with a mediation role of job satisfaction. As for transformational leadership, research published in the journal cogent business and management, the result of which was obtained from surveying 605 workers in Vietnam, showed that the impact of transformational leadership positively on employees work related outcomes has motivational mechanism as one of the most important intermediate factors in this relationship. The results of the investigation point to the fact that in case of transformational leadership, employers' productivity increased not only due to direct influence of the leadership style on the targeted employers in the Pakistani universities, but also due to reinforce of the intrinsic motivation sustained the employee's efforts over time.

H8: Work motivation is a significant mediator of the relationship between work life balance and employee productivity.

H10: Work motivation is a significant mediator of the relationship between transformational leadership style and employee productivity.

The transformational leadership style employee productivity relationship is mediated significantly by work motivation (H10). This study has proposed that work life balance and transformational leadership style can be used as independent variables of this study that will be mediated by job satisfaction and work motivation; whereas productivity of the employer becomes the dependent variable (Guvhu *et al.*, 2025; Jabbar *et al.*, 2024). The working hypothesis is that the relationship between work life balance and transformational leadership has direct effect on the level of productivity of the company, while the relationship between work life balance and work motivation as well as between transformational leadership and work motivation is the moderator of direct effect between work life balance and transformational leadership on the level of productivity of the company. In this context, a total of 10 hypothesis was formulated, six forward and four mediating, and presented the model post with these relationships among university teachers of Punjab, Pakistan (see figure-1 below).

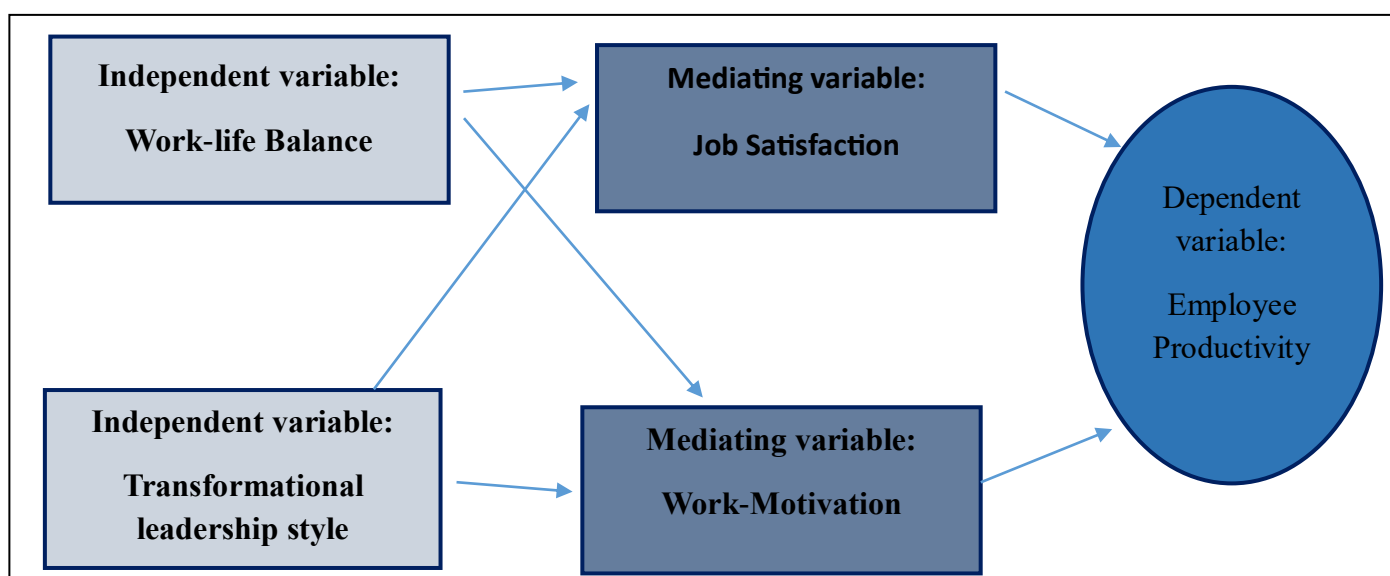


Figure 1 Theoretical framework diagram

RESEARCH METHODOLOGY

In this study, role of WLB and TLS on EP in universities of Punjab, Pakistan with intervening variables of job satisfaction and work motivation is checked. Within the method of research, quantitative it is used both to measure relations among the aforementioned factors and for testing the hypotheses that have been proposed.

The scope of this study is finding solutions for those teachers working in Universities of Punjab (Pakistan). The study is carried out in Punjab province due to its highest population of the province and maximum number of universities in the country. The target respondents are the University teachers since they are directly affected by the circumstances of work life and balance in their university and the leadership behaviors in their work, they also contribute to the productivity of their universities as academics and as researchers (Hashmi *et al.*, 2025).

The data has been collected from the universities of major cities of Punjab namely Lahore, Faisalabad, Multan, Rawalpindi and Gujranwala. These cities were chosen to be representative of both large metropolitan and smaller urban institutes within this province. To have a greater and representative sample of university teachers, the public sector universities were chosen along with the private ones.

Cochran's formula for larger populations was used to calculate sample size. A minimum of 384 respondents is suggested for a 50% response distribution, 5% margin error and a 95% confidence level. The total number of cross selected teachers at each selected city (225 per city) across 5 cities received questionnaire with a provision to cater for non-response and incompleteness. The data were screened for missing/incomplete or incorrect responses on the 20% or 71.1% questionnaires in the sample (Chen & Spector, 1991).

Sampling technique that is used in this study is purposive sampling (non-probability sampling). The method of sampling is appropriate in that the study involves a direct response from University teachers who have experienced work life balance and equilibrium issues, leadership behaviors of their supervisors, job satisfaction, work motivation and productivity of their professions (Guvhu *et al.*, 2025). Full time and part-time teachers of all recognized Universities working in above mentioned five cities were involved in the study.

Information was solicited from self-administered questionnaire. A questionnaire was given in the paper format as well as shared in a google form which was telecast through the teaching faculty what's app groups and email in the respective selected universities. The participants were informed of the aim of the research, the voluntary nature of their inclusion and complete anonymity of their responses. To allow for full anonymity all the time, no personal identifying information was collected at any stage.

All the scales are measured on a 5-point Likert scale, ranging from strongly disagree (SD) to strongly agree (SA). The measuring instruments for each variable were modified/written based on those that have been previously published and widely referenced in a peer reviewed journal (Farooq *et al.*, 2021). The questions used in the questionnaire for each-variable were presented in tabular portion in 1-5 below:

Table 1: Work life balance, six items indicate the ability of the employees to manage and balance the demands of work with demands of the lives outside of work. Items were based on those from Hayman (2005) and include the areas of flexibility, workload, manageability and boundary separation between work and personal time. Answers are answered strongly disagree to strongly agree.

Table 1 Work-Life Balance (WLB)

Item	Questions	Source
WLB1	I can maintain a healthy balance between my work responsibilities and personal life.	(Hayman, 2005)
WLB2	My job allows me enough time to fulfil my personal and family commitments.	
WLB3	I can disconnect from work-related tasks during my personal time (evenings, weekends).	
WLB4	My organization provides flexible working arrangements that support my work-life balance.	
WLB5	Work demands rarely interfere with my personal or family life.	
WLB6	I feel that my workload is manageable within my regular working hours.	

Table 2 transformational leadership style. These five items assess the extent to which employees perceive their leaders as inspirational, intellectually, stimulating, individually, supportive, and ethically grounded. The scale was adapted from Bass and Avolio (1996) and capture score dimensions of transformational leadership behavior. Each item reflects a Specific leadership behavior that motivates followers on baseline performance expectations (Felix, 2025).

Table 2 Transformational Leadership Style (TLS)

Item	Questions	Source
TLS1	My leader inspires me with a clear and motivating vision for the future of our organization.	(Bass & Avolio, 1996)
TLS2	My leader encourages me to think creatively and find new ways to solve work-related problems.	
TLS3	My leader shows genuine interest in my individual	

	development needs and career growth.
TLS4	My leader motivates me to exceed my own expectations by setting high performance standards.
TLS5	My leader acts as a role model by demonstrating strong values, ethics, and professional integrity.

Table 3 job satisfaction. These five items measure employee's overall satisfaction, with their work experience, including recognition, working conditions, carrier development, and skill utilization. The scale was adapted from David J Weiss *et al.* (1967) and assesses the effective and cognitive evaluation employees make about their jobs. Higher scores indicate greater levels of job satisfaction University employees.

Table 3 Job Satisfaction (JS)

Item	Questions	Source
JS1	I feel a sense of personal accomplishment and pride from the work I do in my current job.	(David J Weiss <i>et al.</i> , 1967)
JS2	I am satisfied with the level of recognition and praise I receive for my work contributions.	
JS3	I am satisfied with my current working conditions, including the physical environment and available resources.	
JS4	I am satisfied with the opportunities available to me for professional advancement and career development.	
JS5	My job makes good use of my skills, abilities, and areas of expertise.	

Table 4 Work motivation. These five items capture the degree to which employees feel intrinsically driven to perform their job duties effectively and meaningfully. Adapted from (Gagné *et al.*, 2015) scale measure, both the internal value employees place on their work and the motivational influence

of supervisory recognition support. The items reflect self-determination theories, emphasis on autonomous and intrinsic form of motivation.

Table 4 Work Motivation (WM)

Item	Question	Source
WM1	I feel intrinsically motivated to perform my job duties because the work itself is meaningful and fulfilling.	(Gagné <i>et al.</i> , 2015)
WM2	I am motivated to put in extra effort at work because I personally believe in the value of my work.	
WM3	I feel energized and driven to achieve the goals and targets set for me in my job.	
WM4	I am motivated to continuously improve my skills and knowledge to perform my job more effectively.	
WM5	The support and recognition I receive from my supervisor motivates me to work harder.	

Table 5 employee productivity. These six items measure employee, self-reported performance in fulfilling job responsibilities, meeting, organizational standards, and completing tasks efficiently. Adapted from Williams and Anderson (1991), the scale covers both enroll behaviors, such as task completion and initiative taking that contribute to overall organizational effectiveness. Higher scores reflect stronger perceived productivity and performance among respondents.

Table 5 Employee Performance (David Joseph Weiss)

Item	Question	Source
EP1	I consistently fulfil all the responsibilities and duties outlined in my formal job description.	(Williams & Anderson, 1991)
EP2	I meet or exceed the performance standards and targets set by my organization.	
EP3	I complete my assigned tasks efficiently and to a high	

	standard of quality.
EP4	I can prioritize and manage my workload effectively to ensure timely completion of tasks.
EP5	I demonstrate initiative and take on additional responsibilities that contribute to organizational goals.
EP6	My overall work performance has improved because of the support and resources provided by my organization.

This study was analyzed with the method partial least squares structural equation modelling (PLS-SEM) with smart pls 4.0 software. PLSSEM was chosen due to its capacity to include multiple latent variables, as well as complex mediation parts and behavioral constructs without the need for normal data (Alam *et al.*, 2025). There were two stages to the analysis. To test the measurement model, the outer loadings (>0.70), Cronbach's Alpha and the composite reliability (>0.70) were conducted, along with the AVE (>0.50 for convergent validity) and the Heterotrait-Monotrait ratio of correlations (<0.85 for discriminant validity) in the first stage. The second stage in the testing of the structural model involved obtaining the path coefficient, T statistics, and P values using bootstrapping based on samples. Hypothesis that resulted in a p value < 0.05 were considered statistically significant. Mediation hypothesis (H7-H10) where is tested through indirect effect analysis using bootstrapping.

RESULTS AND FINDINGS

This chapter reports the empirical results of the study of the role of (WLB) and (TLS) on (David J Weiss *et al.*, 1967) with (JS) and (WM) as mediators. The analysis was carried out with the software of partial least squares structural equation modeling (PLS-SEM) we are smart PLS 4 (Partial Least Square-Structural Equation Modeling). The results come divided into two important stages: (1) assessment of the reliability and validity of the constructs, and (2) assessment of the hypothesized relationships between the constructs of the study (theory test hypotheses).

The measurement model was first evaluated for adequate construct reliability, convergent and discriminate validity prior to testing structural relationships. This is a similar approach to that recommended by PLS – SEM analysis. All measurement model assessments such as evaluation of factor loadings, Cronbach alpha, average word variance extracted, fornell-larcker criterion and the Heterotrait-Monotrait (HTMT) ratio were performed.

Assessment of conversion was done using the factor loadings, Cronbach's alpha, and average variance extracted (AVE) for composites. The total loadings for all the items are greater than the acceptable level, 0.60, with most of the items being greater than 0.70 as indicated in Table 1, thus showing that each item is representative of its corresponding construct. In particular, the items were well-loaded (ranging from 0.595 on WLB5 to 0.847 on EP4), which means that there were strong relationships between each of the five constructs and the items.

Cronbach's alphas are satisfactory internal consistency reliability with values between 0.732 (JS) and 0.825 (TLS) that surpassed the recommended value of 0.70 for all constructs. Values of composite reliability range from 0.832 (for JS) to 0.877 (for TLS); Cronbach's alpha value range from 0.778 (for

WLB) to 0.837 (for TLS), which are all over the 0.70 limit, further showing that the instruments measuring these constructs are reliable.

The average variance extracted (AVE) values ranges from 0.508 (WLB) to 0.589 (TLS), all exceeding the minimum acceptable value of 0.50. This confirms that each construct explains more than half of the variance in its indicators, establishing adequate convergent validity. Taken together, the reliability and convergent validity results confirm that the measurement model provides a sound foundation for structural model analysis. These results are presented in table 6.

Table 6: Convergent Validity Factor Loadings, Reliability, and AVE

		Cronbach's alpha	Composite (rho_c)	reliability	Average variance extracted (AVE)
EP2	0.521	0.779		0.848	0.534
EP3	0.704				
EP4	0.847				
EP5	0.761				
EP6	0.777				
JS2	0.738	0.732		0.832	0.554
JS3	0.751				
JS4	0.753				
JS5	0.733				
TLS1	0.752	0.825		0.877	0.589
TLS2	0.762				
TLS3	0.822				
TLS4	0.684				
TLS5	0.808				
WLB1	0.678	0.753		0.836	0.508
WLB2	0.830				
WLB4	0.787				
WLB5	0.595				
WLB6	0.646				
WM1	0.649	0.795		0.859	0.551

WM2	0.708
WM3	0.815
WM4	0.746
WM5	0.783

Discriminate validity was first assessed using the Fornell larker criterion, which requires that the square root of each constructs AVE should be greater than its school relations with all other constructs in the model (Podsakoff *et al.*, 1990). As presented in table 2, the diagonal values representing the square root of AVE for each construct are as follows: EP= 0.731, JS= 0.744, TLS= 0.767, WLB= 0.713, and WM= 0.743.

Examining the off-diagonal correlations, each diagonal value is higher than all correlations in its corresponding row and column. For instance, the square root of AVE for employee productivity (0.731) is greater than its relationship with job satisfaction (0.393), transformational leadership (0.440), work life balance (0.327) and work motivation (0.530). Similarly, work motivation (0.743) exceeds all its inter-constructs correlations, including its highest correlation with transformational leadership (0.623). These findings confirm that each construct shares more variance with its own indicators than with any other construct in the model, thereby establishing acceptable discriminate validity. The Fornell-Larcker results are given in table 7.

Table 7: Fornell-Larcker Criterion Discriminant Validity

	EP	JS	TLS	WLB	WM
EP	0.731				
JS	0.393	0.744			
TLS	0.440	0.526	0.767		
WLB	0.327	0.502	0.302	0.713	
WM	0.530	0.574	0.623	0.479	0.743

Cross loading analysis was conducted to further assess discriminant validity. As presented in table 8, each indicator loads highest on its indent construct compared to all other construct the model. For example, EP items load mostly on employee productivity, JS items slowed highest on job satisfaction, DLS items loaded highest on transformational leadership, WLB items load highest on work life balance, WM load highest on work motivation. No indicators load more strongly on construct other than its own, confirming that all items are making their intended constructs and not overlapping with others. These results provide further evidence of acceptable discriminant validity.

Table 8: Cross loadings

	EP	JS	TLS	WLB	WM
EP2	0.521	0.179	0.131	0.078	0.259

EP3	0.704	0.166	0.313	0.051	0.352
EP4	0.847	0.377	0.353	0.255	0.372
EP5	0.761	0.237	0.304	0.281	0.401
EP6	0.777	0.403	0.430	0.410	0.498
JS2	0.295	0.738	0.402	0.416	0.505
JS3	0.263	0.751	0.294	0.379	0.434
JS4	0.199	0.753	0.402	0.430	0.432
JS5	0.397	0.733	0.451	0.274	0.339
TLS1	0.364	0.402	0.752	0.062	0.368
TLS2	0.426	0.422	0.762	0.252	0.525
TLS3	0.295	0.439	0.822	0.304	0.517
TLS4	0.300	0.309	0.684	0.275	0.371
TLS5	0.309	0.428	0.808	0.249	0.563
WLB1	0.242	0.285	0.225	0.678	0.447
WLB2	0.235	0.350	0.230	0.830	0.436
WLB4	0.301	0.485	0.260	0.787	0.358
WLB5	0.102	0.367	0.091	0.595	0.176
WLB6	0.269	0.282	0.257	0.646	0.224
WM1	0.266	0.498	0.339	0.449	0.649
WM2	0.401	0.337	0.414	0.326	0.708
WM3	0.357	0.355	0.492	0.291	0.815
WM4	0.482	0.377	0.459	0.359	0.746
WM5	0.431	0.559	0.575	0.369	0.783

To further confirm discriminate validity, the Heterotrait-Monotrait (HTMT) ratio was examined. The HTMT criterion requires that all values below 0.90 Henseler *et al.* (2015), with a stricter threshold of 0.85 recommend recommended and more conservative assessments. As presented in table 4, all HTMT values are well below 0.90, ranging from 0.390 (TLS – WLB) to 0.752 (WM – JS). The highest value is observed between work motivation and job satisfaction that is 0.752, which is theoretically expected given the conceptual or lab between these two attitudinal constructs. However, since this value remains below both 0.85 and 0.90 thresholds, it does not indicate a discriminant

validity concern. Overall, the HTMT results confirm that all constructs are statistically distinct from one another, and the measurement model demonstrates acceptable discriminant validity suitable for structural model testing.

Cross loading analysis was conducted to further assess discriminant validity. As presented in table 8 each indicator loads highest on it intended construct compared to all other constructs in the model. For example, EP items lower more strongly on employment productivity, JS items lower highest on job satisfaction, TLS items load highest on transformational leadership, WLB items load highest on work life balance, and WM items load highest on work motivation. No indicator loads more strongly on a construct other than its own, confirming that the items are measuring their intended construct and not overlapping with others. These results provide further evidence of acceptable discriminant validity.

Table 9: Heterotrait-Monotrait Ratio (HTMT), Discriminant Validity

	EP	JS	TLS	WLB	WM
EP					
JS	0.514				
TLS	0.527	0.663			
WLB	0.407	0.673	0.390		
WM	0.646	0.752	0.745	0.605	

Figure 2 represents the graphical output of the measurement model generated through smart PLS4. The outer loading for each indicator is displayed on the path connecting the observed variables to their respective latent constructs. The values displayed confirm that all retained indicators demonstrate acceptable loadings with higher values indicating stronger relationships between the items and their corresponding constructs. The R-square values displayed inside each endogenous construct circle reflect the proportion of variance explained by the predictors in the model.

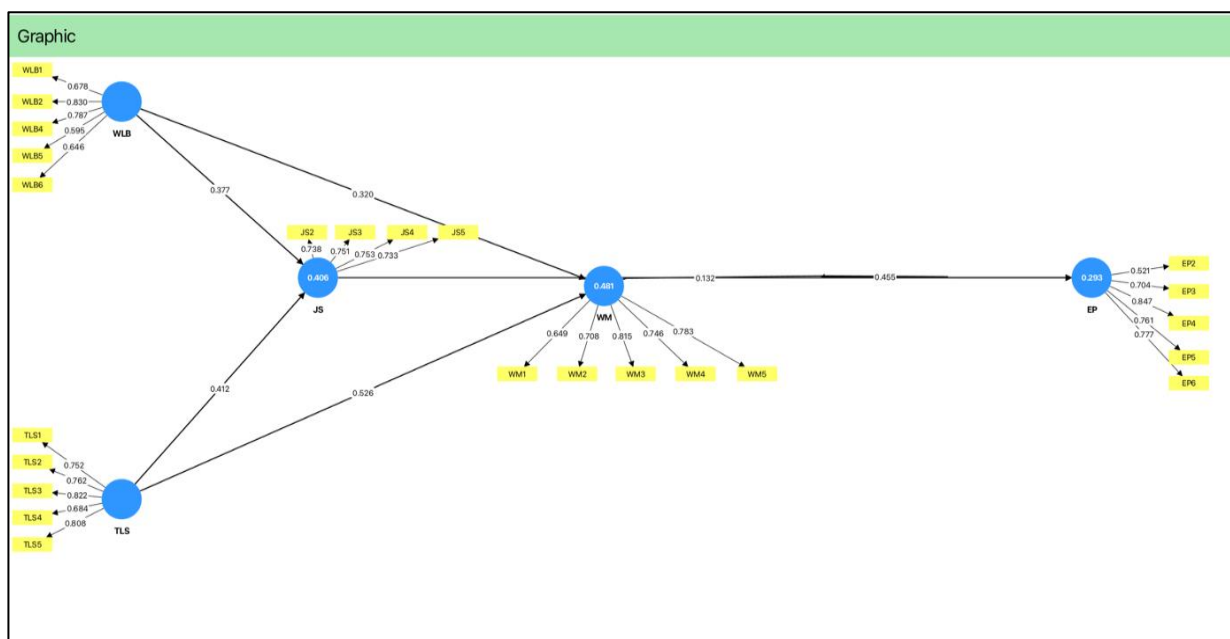


Figure 2 measurement model

Following the confirmation of the measurement models reliability and validity, the structural model was assessed to test the hypothesis direct and indirect relationships among the study variables. Boot strapping with 5000 sub samples was employed to generate the path coefficients, T-statistics, p-values required for hypothesis testing. A two-tailed significance level of $p < 0.05$ was adopted, with a critical T-value threshold of 1.96. The structural model results are presented below.

Table 10 presents the path coefficient, T-statistics, and p-values for 6 direct hypotheses. The outcomes revealed that work life balanced significantly and positively impacts job satisfaction ($\beta = 0.377$, $t = 4.095$, $p < 0.001$), thereby supporting each H1. This finding indicates that when university employs maintain a healthy balance between their professional and personal responsibility, their level of job satisfaction improve significantly. Similarly, work life balanced demonstrate a significant positive effect on work motivation ($\beta = 0.320$, $t = 3.836$, $p < 0.001$), confirming H2. These results are consistent with prior literature suggesting that employees who experience fewer work live conflict report higher intrinsic motivations towards their work.

TLS was found to significantly and positively predict job satisfaction ($\beta = 0.412$, $t = 4.895$, $p < 0.001$), supporting H3. This finding confirms that supervisors and department have in Punjab universities to demonstrate transformational behaviors such as inspiring a shared vision, providing individualized consideration, and stimulating intellectual development that generate greater satisfaction among their staff. Transformational leadership also demonstrated a significant positive impact on work motivation ($\beta = 0.526$, $t = 6.290$, $p < 0.001$), supporting H4 an indicating the strongest direct effect in the model under scoring the critical role of leadership behavior in energizing employee effort and commitment.

Regarding the direct effects on employee productivity, work motivation was found to significantly and positively predict employee productivity ($\beta = 0.455$, $t = 3.905$, $p < 0.001$), thereby supporting H6. These findings establish work motivation as the dominant direct Driver of productivity in this model. In contrast, job satisfaction did not demonstrate a statistically significant directive effect on employer productivity ($\beta = 0.132$, $t = 1.057$, $p = 0.291$), leading to the rejection of H5. These results suggest that in the context of Punjab universities, job satisfaction alone may not be sufficient to translate into memorable productivity gains when work motivation is simultaneously accounted for in the model.

Table 10 Path Analysis of Direct Effects (H1–H6)

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T (O/STDEV)	statistics P values
JS -> EP	0.132	0.150	0.125	1.057	0.291
TLS -> JS	0.412	0.422	0.084	4.895	0.000
TLS -> WM	0.526	0.527	0.084	6.290	0.000
WLB -> JS	0.377	0.377	0.092	4.095	0.000
WLB -> WM	0.320	0.325	0.084	3.836	0.000
WM -> EP	0.455	0.456	0.116	3.905	0.000

The mediation results are presented in Table 6. The results indicated that the indirect effect of WLB on EP through JS is not significant ($\beta = 0.050$, $t = 0.909$, $p = 0.364$), and therefore Hypothesis 7 is

rejected. Similarly, the indirect effect of TLS on EP through JS is also not significant ($\beta = 0.054$, $t = 0.980$, $p = 0.327$), and therefore Hypothesis 9 is rejected. These non-significant results are consistent with the rejection of Hypothesis 5, as JS was not found to significantly predict EP directly, which prevents it from functioning as a significant mediator. In contrast, the indirect effect of WLB on EP through WM is significant ($\beta = 0.146$, $t = 2.856$, $p = 0.004$), and therefore Hypothesis 8 is accepted. Likewise, the indirect effect of TLS on EP through WM is significant ($\beta = 0.239$, $t = 3.173$, $p = 0.002$), and therefore Hypothesis 10 is accepted. These outcomes confirm that WM serves as the key mediating mechanism through which both WLB and TLS influence EP in Punjab's universities.

Table 11 Mediation Analysis Specific Indirect Effects (H7–H10)

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
TLS -> JS - -> EP	0.054	0.063	0.055	0.980	0.327
WLB -> JS -> EP	0.050	0.059	0.055	0.909	0.364
TLS -> WM -> EP	0.239	0.241	0.075	3.173	0.002
WLB -> WM -> EP	0.146	0.147	0.051	2.856	0.004

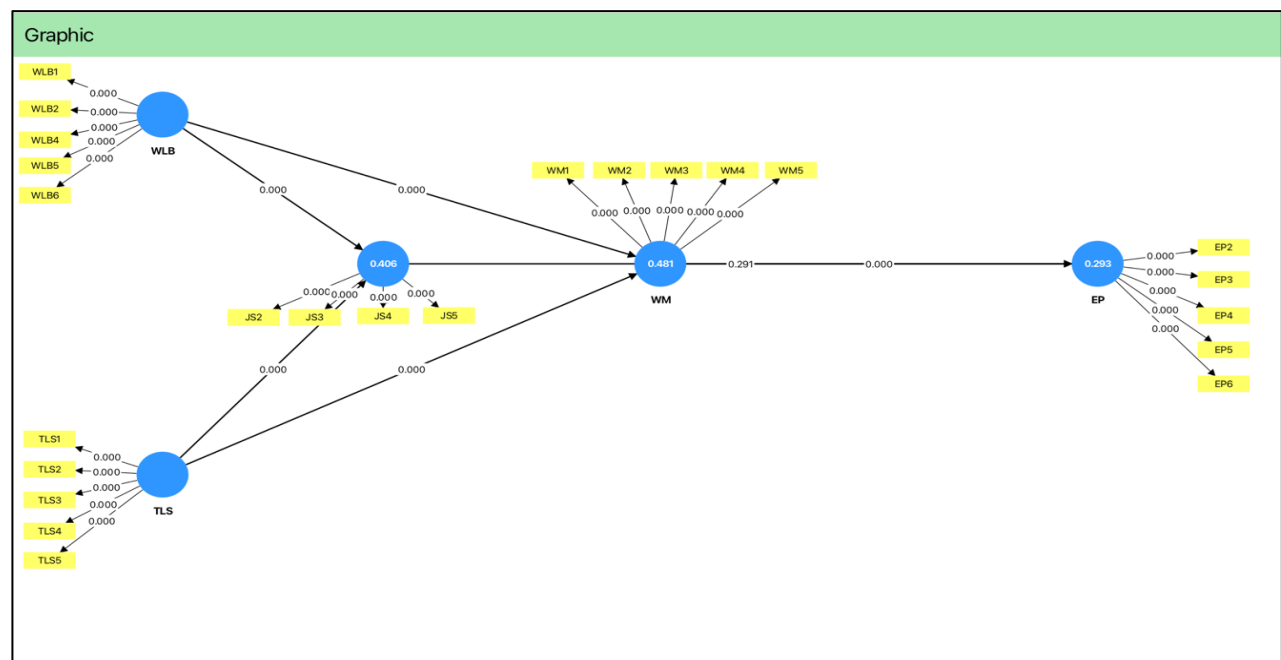


Figure 3 Structural Model Graphical Output

The graphical output from Smarts 4 Bootstrapping results of the structural model is presented in Figure 3. Structural arrows are used to show the direction of the paths. Any path value listed on the

structural arrows is a T-statistic, which gives a visual indication of the strength and significance of the hypothesized paths in the model.

DISCUSSION

The present study examined the role of WLB and TLS on EP among university employees in Punjab, Pakistan while JS as mediating variables. These results confirmed that the WLB has a significant and positive effect on both JS and WM which justifies the hypotheses (H1 & H2). The results are aligned with Susanto *et al.* (2022) who found that at the Higher education commission over the employees' requirement of academic workload and WLB, its significantly influence higher employee's satisfaction and motivation for the work.

TLS was also found to have a significant and positive effect on both JS on WM, supporting H3 and H4. This was consistent with

However, it had been confirmed that transformational leadership behaviors like Vision, Individual Support and intellectual Stimulation had a significant influence on employee satisfaction and motivation, by Jiatong *et al.* (2022) and Notarnicola *et al.* (2024) in different organizational settings. Among the study's direct relationships, the transformational leadership style is the most similar with work motivation, showing that this inspiratory leadership style has a strong role in motivating the work efforts of university workers.

As for direct impact on employee productivity, there was a positive significance of work motivation in predicting employee productivity (Kattenbach *et al.*, 2010). Taking this up, it is hypothesized that work motivation has a positive significant effect on employee productivity; thus, H6 is accepted. But, H5 was not supported, as job satisfaction did not significantly contribute to employee productivity. This finding indicates that, for a researcher context of public universities in Punjab, it is not only job satisfaction which directly contributes in terms of productivity-recall during this school, but also motivation toward work. This finding shows motivational states as a more direct behavioral Driver of productivity as compared to attitudinal satisfaction in the setting.

The mediation results also support this pattern, as the relationship between both WLB and EP was also significantly mediated by WM, and the transformational leadership style and productivity significantly mediated the relationship in between WLB and EP, for support of H8 and H10. The opposite was true for the two relations with job satisfaction as a mediator variable; thus, they were rejected for these results (H7 and H9). Even the results of the mediational analysis of these non-significant results are in line with the rejection of H5 because there was no direction or significant role of job satisfaction in predicting employee productivity directly (Yousef, 2000). Altogether, these findings validated the work motivation service and psychological mechanism through which work life balance as well as transformational leadership style have positive impact on employ productivity in the context of Punjab University.

CONCLUSION

This study material added something to organizational behavior literature and empirically tested a comprehensive mediated framework linking with work life balance and transformational type of leadership to employ productivity (Job Satisfaction and for that work motivation) in the under-explored field of Public Sector Universities in the Province of Punjab, Pakistan. Six of 10 proposed hypothesis were accepted. Both findings were confirmed, showing that work life balance is as well as transformational leadership a significant antecedent factor of job satisfaction, and that the mechanism through which these two organization conditions influence the job satisfaction to job work motivation is mostly important to better understand how to increase the employee's productivity.

IMPLICATIONS

Through this research it discovered the practical suggestions for university administrator's department and human resource management for public sector universities in Pakistan. Examined work balance policies like flexible working or situation ting workloads equip ably may make an immense difference for a boy satisfaction and participation. Correspondingly, the training and communication of the vision, individual support and intellectual stimulation of the supervisors and department heads as a part of building their transformational leadership capacities can bolster their staff's motivation and help improve their inter intern productivity. It was found that work motivation was the biggest Driver of productivity in the study, so in HR interventions for increasing productivity the focus should be given to motivating employees to the extent of establishing intrinsic motivations and this method is done by making use of assignments of meaningful work and appropriate methods of recognition and developing the carriers for employees. The results of this study also offer solid research-based backing towards the implementation of welfare programs and leadership development efforts in congruence with the strategic agendas for improving the quality of higher education in Pakistan.

LIMITATIONS AND FOR FUTURE RESEARCH

There are some limitations imposed in this study. It is possible that its findings may be generalizable to other provinces, or to private sector institutions, but this is limited by the sample of university personnel in events in Punjab. Although, because of the cross-sectional design of the study, ability to draw casual conclusions about the relationship relationships tested is limited. Further research in a code employee longitudinal design and in a larger mode verse sample are necessary to confirm and expand on these findings. Some further possible variables to be explored in future studies are organizational commitment, perceived organizational support, etc. to add to the discussion of how an employee's productivity is shaped or mediated by WLB and leadership style.

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