

Work-Life Balance and Job Satisfaction among Women Professionals Using Machine Learning Techniques

Ekta Bhambri Marwaha¹, Jaya Gera², Reema Thareja^{3*}

¹Department of Applied Psychology, Shyama Prasad Mukherjee College (W), University of Delhi, New Delhi, India, ²Department of Computer Science, Shyama Prasad Mukherjee College (W), University of Delhi, New Delhi, India, ³Department of Computer Science, School of Open Learning, University of Delhi, New Delhi, India. *Corresponding Author's Email: reema.thareja@sol.du.ac.in

Abstract

Work-life balance is important for the well-being and job satisfaction of every employee. In this study, we have examined how work-life balance is related with job satisfaction among women healthcare professionals and bank employees. For this, we have investigated the work-life balance and job satisfaction levels of women professionals and assessed dimensions that affect their impact job satisfaction. The study is correlational and cross-sectional. Data is collected from 120 women employees working in Delhi and NCR (40 bank employees, 40 IT employees and 40 BPO employees). We used Demographic questionnaire, Job Satisfaction Scale developed by Shresthya and Ganguli, 1994, and the Work-Life Balance Scale of Hayman 2005. Descriptive as well as inferential statistics were used to analyze the data. We used Mean, Standard Deviation, correlation, ANOVA, and Post hoc test using SPSS software. The results highlighted the fact that women bank employees maintained better work-life balance and had more job satisfaction than IT and BPO sector employees. There is a significant positive correlation between work-life balance and job satisfaction among women professionals. The study puts forward empirical evidence to prove the relationship between work-life balance and job satisfaction among women professionals. This calls for sector-tailored interventions to enhance employees' well-being.

Keywords: Job Satisfaction, Personal Life Interference with Work, Work Interference with Personal Life, Work-Life Balance, Work Personal Life Enhancement.

Introduction

Work-life balance is the buzzword of conversation in India, particularly among female employees. This term indicates a state of equilibrium wherein individuals effectively balance the competing demands of their personal and occupational spheres. Every role has its own set of requirements, and when those requirements coincide, there are several issues. In actuality, work and life merge and are not separate. Employers should consider how employee dedication can distinguish between organizations that can compete in the market and those that cannot when creating work-life policies. Women who distribute their attention and effort among the major areas of relevance lead balanced lives. These days, women are playing key roles as academicians, legislators, and practitioners. For them, happy working environment is crucial to maintain work-life balance. Workers must have a strong sense of purpose in their work and should be able to manage professional and personal lives in their current positions. However, achieving this balance is challenging due to the rise of

globalization, technological improvements, and intense competition in the workplace (1). In some work contexts, stress and long work hours can be significant contributors to burnout, which can ultimately result in a rise in absenteeism, workplace aggressiveness, and workers' compensation claims (2). Singh analyzed the literature to ascertain how work-life balance and related practices impact a range of quality-life elements, such as job satisfaction, progress in career, appreciation, stress, absenteeism, and competition (3). In an era of globalization and technological advancement, work-life balance is the key to assess an employee's overall well-being and job satisfaction. Another work (4) reported that achieving a work-life balance is becoming more and more crucial for employees across all industries. Kossek also asserted, however, that organizational cultures, laws, and social norms can have a big impact on the strategies and support networks employed by various industries to attain work-life balance (5). Finding the work-life balance is the main stress for women working in

This is an Open Access article distributed under the terms of the Creative Commons Attribution CC BY license (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted reuse, distribution, and reproduction in any medium, provided the original work is properly cited.

(Received 09th October 2025; Accepted 03rd January 2026; Published 27th January 2026)

high-pressure professions including law enforcement, transportation, healthcare, information technology, media, etc. People in today's rapidly expanding world don't have time for their families or themselves. Managing work and personal life simultaneously is challenging. This is especially true for those employed by BPO companies. The ITES industry's fastest-growing sector in India is business process outsourcing. The Indian BPO industry has grown as a result of several factors, including cost advantage, business risk mitigation, economies of scale, improved utilization, and higher competency. Achieving a work-life balance mostly depends on establishing and preserving health environment at work to strike a balance between work and non-work components. Poor work-life balance can significantly affect physical, psychological, and behavioral patterns, hurting the overall quality of life. Conversely, work-life balance can positively boost employee loyalty, productivity, job satisfaction, and overall growth (6). The employment environment is evolving due to advancements in technology, increased globalization, and increased female participation.

In both the financial system and the economy, banking is crucial. Our nation's banking sector is significant to the contemporary economic landscape. Individuals' savings are gathered by banks and made available to manufacturers, consumers, and businesses. Loans from banks facilitate trade. The funds required for the purchase of raw materials and operating capital are borrowed from banks. Money kept in banks is safe. By doing this, interest is also earned. As a result, there is an increase in the amount saved and an increase in the desire to save. New capital assets can be created with the savings. Furthermore, banks serve as business and industrial organizations' agents, counselors, and advisers. They support the growth of industry and trade. Because of the progressive removal of trade barriers, cutting-edge technological advancements, a globally integrated marketplace, fierce competition, commercial rivalry, and shifting family and population patterns, the working environment for women in India is evolving at an astonishing rate.

Job fulfillment is essential for acquiring a job and getting involved with it. Each employee must receive the same respect and consideration. Fair

organizational treatment is reflected in job satisfaction. Emotional health is also correlated with job satisfaction. Supervisors ought to concentrate on job satisfaction since unsatisfied workers are more likely to deliver subpar work. An employee's job is both their primary source of income and a significant aspect of their life. A worker's job takes up a significant portion of his or her daily schedule and occasionally necessitates overworking for prolonged periods, which can negatively impact his or her lifestyle and physical health. A worker's job also determines their social standing, so satisfaction in job is crucial for an employee's physical, social, emotional, and financial well-being. Researcher defined this as a happy, positive emotional state that stems from regular appraisal in one's employment experience or job (7). It also involved affective, cognitive, and evaluative attitudes. Employees' opinion of how well their job provides things that are deemed vital determines their level of job satisfaction. In the study of organizational behavior, job satisfaction is widely acknowledged as the most significant factor, and employee attitude is regularly studied. Happy and satisfied employees usually work better and harder without missing much days of work. Nonetheless, dissatisfied workers may quit their employment more frequently and experience higher levels of stress (8-10). It is not just about happiness, contentment, or job satisfaction. Other factors are also important. The worker must establish a positive relationship and a connection with their employment.

When personal and professional obligations do not conflict, work-life balance is achieved. But frequently, there is an imbalance that leads to problems like a decline in job satisfaction. One important factor that might affect employee performance and impede the expansion of the business is work-life balance. Companies are always looking for ways to help employees find a balance between their personal and professional lives while also assisting the company in being more productive. This is why they are there. The notion of job satisfaction pertains to the attitudes that workers have at work that are consistent with their ability to effectively reflect on their subjective perceptions of their workplace. It is now more challenging for employees to do better at work while still leading fulfilling personal lives due to the rise in demand for employment. Maintaining a

healthy work-life balance can also help people feel more fulfilled personally and more satisfied with their jobs. The author asserted that as work-life conflict rises, job satisfaction may decline and that unfavorable work experiences may hurt an employee's personal life and career (11). This kind of exhaustion can lead to unhappiness, which in turn can lower productivity.

Figure 1 is a line graph titled "Documents by year", depicts the number of documents published annually from 2003 to 2025. The vertical axis

represents the number of documents (varying from 0 to 20), while the horizontal axis denotes the years. The graph depicts an increasing trend in document publication, with some exceptions. Notably, the highest outputs (19 documents) occurred in 2023 and 2024. There was a sharp rise between 2014 and 2015, and consistent growth from 2020 onwards, indicating rising interest or research activity in the subject area over the past decade. The trend dips slightly in 2025.

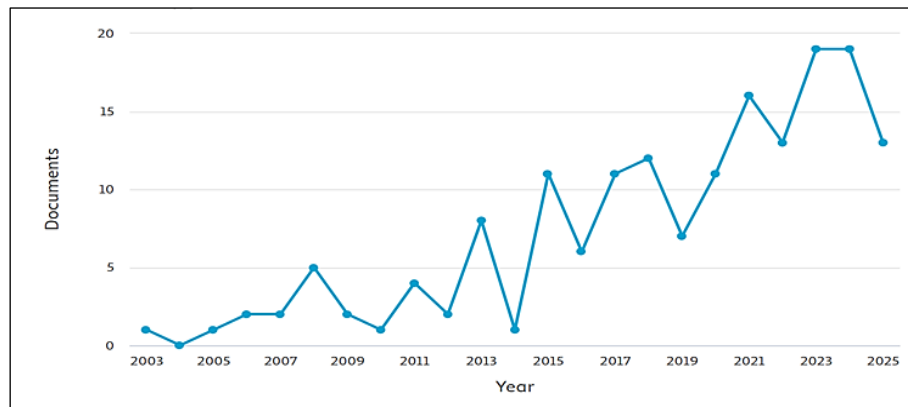


Figure 1: Reviewing Literature Based on Citations per Year



Figure 2: Word Cloud for Summarizing the Observations

Research Gap

Word cloud in Figure 2 visually represents the most frequently occurring and significant terms from a set of research gap statements focused on machine learning, work-life balance, and job satisfaction among women professionals. We see that the dominant words are "Work", "life", and "balance" appear most prominently, indicating a strong focus on the theme of work-life balance, "Women" and "professionals" are also emphasized, reinforcing that the research specifically targets the female workforce.

Since research emphasis focus words like "gap", "research", and "relationship". This highlight that these texts are identifying unexplored or underexplored areas, such as relationship between work-life balance and job satisfaction.

Terms like "machine learning", "prediction", and "analyze" suggest a growing interest in using AI techniques to understand these workplace dynamics.

Emerging themes are indicated by words like "Challenges", "retention", "context", and "solutions" reflect concern for practical outcomes, how work-life balance affects employee retention,

and how tailored AI solutions might address these issues.

"Seafarers" and "industries" indicate a broader applicability beyond just IT, touching on women across varied professional sectors. Overall, this word cloud emphasizes a multi-disciplinary and data-driven approach to addressing gender-specific workplace issues using modern AI tools.

The boundaries between work and personal life are becoming increasingly blurred in today's demanding workforce. Women professionals experience significant difficulties while balancing their work and personal lives, especially in high-stress fields like finance and healthcare. This study provides insights into the tactics that companies may use to promote their employees' well-being and raise job satisfaction by looking at the aspects of work-life balance and how they affect it. The present study is exploratory; thus, research questions were formulated as follows:

- A) Identify the level of job satisfaction among women bank, BPO, and IT employees.
- B) Is there any relationship between work-life balance and job satisfaction among women employees?
- C) What intervention strategies can be implemented to enhance work-life balance and productivity among women employees?
- D) Is there any difference in the levels of work-life balance and job satisfaction among women bank, BPO, and IT employees differ?

Methodology

The present research was exploratory, since it used a cross-sectional design, and also quantitative. Therefore, we skipped the research hypotheses in this study. This study analyzes the correlation between work-life balance and job satisfaction among women employees in Delhi (NCR). Interviews were conducted to ask strategies that could maintain balance and improve the productivity of the employees. The following dimensions were explored: 1. Flexible work arrangements, 2. Paid time off (PTO), 3. Clear communication and Encouraging breaks, 4. Workload and Time Management Strategies, 5. Family support, 6. Wellness programs. The objectives of the study revolve around the research questions.

A) Investigate the work-life balance and job satisfaction levels of women bank, BPO, and IT employees.

B) Explore the relationship between work-life balance and job satisfaction among women employees.

C) Identify the dimensions of work-life balance that impact job satisfaction.

The sample consisted of 120 women professionals working in Delhi (NCR) (40 bank employees, 40 BPO employees, 40 IT employees). The data was collected using purposive sampling technique. The 40-banking staff consisted of Banking Associates, Relationship managers, Interns, Bank tellers, and Customer Support Representatives. Regarding their educational qualifications, in the banking sector, 38% had postgraduate degrees 46% had undergraduate degrees, and 16 % completed various levels of education, whereas in the BPO sector, 5.2% had postgraduate 68.6% had undergraduate degrees and 26.2 % completed various levels of education. In terms of family structure, 64.2% came from nuclear families, 34.8% from joint or extended families.

The following measures were considered for analysis.

Job Satisfaction Scale: Shresthya and Ganguli, developed a scale that includes 26 items which measure 7 dimensions (12). The present study employed a total test score to ascertain the participants' overall job satisfaction. A rating ranges from Strongly Disagree, Disagree, Uncertain, Agree, to Strongly Agree is used in this scale. This scale's test-retest reliability was $r=0.90$. Spearman-Brown's Correlation revealed that the odd-even reliability was $r=0.80$. The internal consistency approach was used to verify the validity of the scale. Specifically, item analysis revealed low correlations between items and high correlations between item scores and the test's overall score.

Work-Life Balance Scale: Hayman validated Work-Life Balance Scale was employed (13). Fisher was the one who developed it initially (14). There are fifteen items in all on Hayman's scale. Work/personal life enhancement (WPLE), work interference with personal life (WIPL), and personal life interference with work (PLIW) are its three sub-dimensions. The dimension known as Work Interference with Personal Life (WIPL), includes work-related elements that have the

potential to affect an individual's personal life. The PLIW, or personal life interference with work comprises statements that impact personal life on work. The dimension known as Work Personal Life Enhancement, or WPLE, reflects high levels of perceived balance between work and personal life following four statements. work-life balance is indicated by a high mean score on the WPLE dimension, which indicates little interference between work and personal life. High levels of perceived balance between work and personal life are reflected in the positively worded WPLE subscale, which has a higher mean. The PLIW and WIPL subscales, which had negative wording, were recoded. The three dimensions stand for two common theories- conflict approach and enrichment approach. The theories explain how work and family are related. According to the conflict perspective, conflict arises when job and family are combined (15). In contrast, the enrichment approach discusses how life enriches work and vice versa (16). The five-point Likert scale in the Work-Life Balance Scale (17) goes from 1 (Strongly Disagree) to 5 (Strongly Agree). Cronbach's alpha was used to evaluate the scale dependability, yielding values of 0.90 for PLIW, 0.77 for WPLE, and 0.93 for WIPL. The dependability obtained for Indian conditions was 0.87.

Procedure

This study explores the correlation between work-life balance and job satisfaction among women healthcare professionals and bank employees in Delhi. A sample of 120 employees, 40 from each sector, participated in the study. Demographic measures included education, family setup, and work experience. Job satisfaction was measured

using Ganguly's Job Satisfaction Scale. To assess work-life balance, we used Hayman's Work-Life Balance Scale, comprising three dimensions: WLIP, PLIW, and WLH. Data was analyzed using Mean, Standard Deviation, ANOVA (F test), correlation, and Post Hoc analysis. To gather information on strategies to maintain work-life balance and improve productivity semi-structured interviews were organized.

Results

Data was analyzed and interpreted using various statistical techniques including Means and Standard Deviation to describe the scores of work-life balance and job satisfaction of women employees. F test compared the average scores of the three sectors on the three dimensions of work-life balance- WLIP, PLIW, and WLH. Correlation analysis examined the relationship between work-life balance dimensions and job satisfaction. Furthermore, post hoc analysis was performed to identify the significant difference amongst three groups of women employees.

Table 1 shows the results obtained for bank, BPO and IT professionals on job satisfaction and three dimensions of work-life balance. We see that t bank professionals reported higher mean scores on job satisfaction Mean =95.67, SD=8.50 compared to BPO and IT professionals Mean =89.77, SD=6.83, with a significant difference at 0.01level. Bank professionals also reported higher Mean scores on Work Interference with Personal Life (WIPL), Mean =23.20, SD=4.38 with a significant difference of 0.01level. However, there were no significant differences between the two groups on Personal Life Interference with Work (PLIW) and Work Personal Life Enhancement (WPLE).

Table 1: Post hoc (Tukey) Values of Three Groups of Women Employees on Job Satisfaction and 3 Dimensions of Work-life Balance

Tukey HSD							
Dependent Variable	(I) type	(J) type	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
jobsatsf	1	2	3.55000	1.69843	.096	-.4819	7.5819
		3	5.90000*	1.69843	.002	1.8681	9.9319
WIPL	1	2	2.35000*	.94313	.037	.1111	4.5889
		3	3.65000*	.94313	.001	1.4111	5.8889

*. The mean difference is significant at the 0.05 level

Table 2: Relationship between Job Satisfaction and 3 Dimensions of Worklife Balance i.e., WIPL, PLIW, and WPLE

	Bank Professional (N=40)		BPO Professionals (N=40)		IT Professional (N=40)		ANOVA (F Value)
	MEAN	SD	MEAN	SD	MEAN	SD	
Job Satisfaction	95.67	8.50	89.77	6.83	92.12	7.34	6.11**
Work Interference with Personal Life (WIPL)	23.20	4.38	19.55	4.08	20.85	4.17	7.69**
Personal Life Interference with Work (PLIW)	15.35	3.43	15.35	2.91	14.0	2.48	2.76
Work Personal Life Enhancement (WPLE)	14.65	2.73	14.90	2.35	14.15	2.41	.397

(Note: * - p < 0.05; ** - p < 0.01)

The results of Table 2 and 3 demonstrate a positive relation between job satisfaction and WIPL; job satisfaction Personal Life Interference with Work (PLIW); job satisfaction and Work Personal Life

Enhancement (WPLE) significant at .01 level, indicating that as the three dimensions of work life balance increase, job satisfaction also increases.

Table 3: Relationship between Job Satisfaction and 3 dimensions of Worklife Balance i.e., WIPL, PLIW, and WPLE

Variables	Job Sat	WIPL	PLIW	WPLE
Job Sat	1	.775**	.757**	.827**
WIPL		1	.629**	.612**
PLIW			1	.744**
WPLE				1

(Note: * - p < 0.05; ** - p < 0.01)

The heatmap (Figure 3) shows the correlation between different numerical variables. Figure 1 underlines the following relationship in data.

- A) Job Satisfaction (jobsatsf) vs. Work Interference with Personal Life (WIPL): A negative value indicates that as work interference increases, job satisfaction tends to decrease.
- B) Job Satisfaction (jobsatsf) vs. Personal Life Interference with Work (PLIW): Likely negative, indicating that when personal life disrupts work, job satisfaction may decline.

- C) Job Satisfaction (jobsatsf) vs. Work-Personal Life Enhancement (WPLE): A positive correlation suggests that when work enhances personal life, job satisfaction improves.
- D) WIPL vs. PLIW: Likely positively correlated, meaning that if work interferes with personal life, personal life is also more likely to interfere with work.
- E) WPLE vs. WIPL and PLIW: Likely negative, showing that interference (whether work or personal) impacts on the work-life balance.

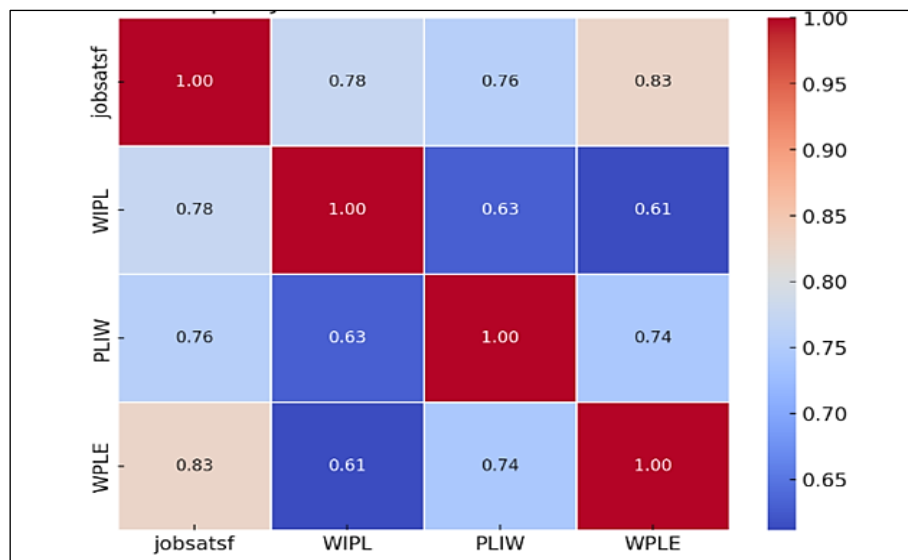


Figure 3: Correlation among Variables

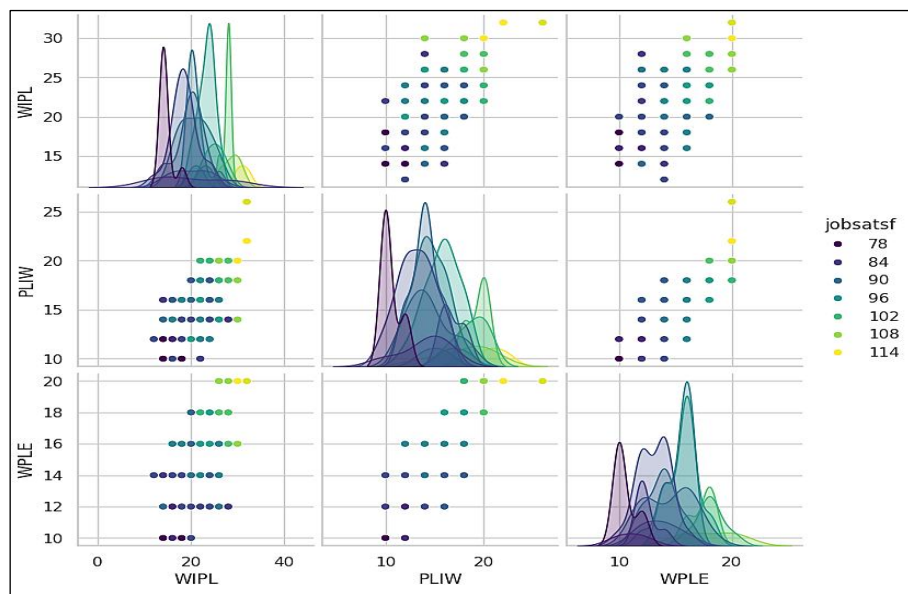


Figure 4: Pairplot of Features

Figure 4 shows a pairplot (or scatterplot matrix) of three features: WIPL, PLIW, and WPLE, with an additional categorical variable, jobsatsf (job satisfaction), represented by different colors.

These plots show the relationships between pairs of variables, with points colored by jobsatsf:

The graph WIPL vs. PLIW shows that the two values are not related to each other.

The graph WIPL vs. WPLE shows that there is a slight negative correlation—higher WIPL values tend to correspond to lower WPLE values. We can see that higher jobsatsf (e.g., yellow, 114) clusters at higher WPLE and lower WIPL values.

The graph, PLIW vs. WPLE shows a weak positive correlation. Higher PLIW values is associated with higher WPLE values. We can see that higher jobsatsf

(e.g., yellow, 114) clusters are present at higher WPLE and lower PLIW.

The boundaries between work and personal life are becoming increasingly blurred in today's demanding workforce. Women professionals experience significant difficulties striking a balance between their work and personal obligations, especially in high-stress fields like finance and healthcare.

All these graphs (Figure 5), together indicate that higher job satisfaction is associated with:

- Lower WIPL (less work in progress load- Figure 5A).
- Higher WPLE (better work performance or productivity levels- Figure 5C).

Figure 5B displays boxplot of skewness values, showing symmetric distribution around zero. The lack of strong linear relationships between the variables indicates that these metrics might interact in complex ways or be affected by factors that have not been considered in this study. The lack of strong linear relationships between the variables indicates that these metrics might interact in complex ways or be affected by factors that have not been considered in this study.

The boxplot (Figure 5) confirms the same relationship and in addition, in addition, highlights two main points. There are outliers but with the current data, it is difficult to explain the reasons behind those extreme values. Moreover, the decreasing variability with higher job satisfaction could imply that satisfied employees experience more stable and predictable work conditions.

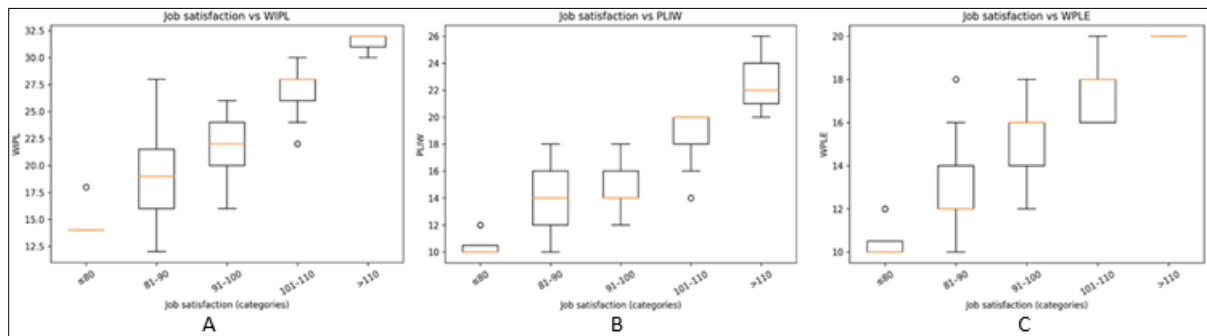


Figure 5: Boxplot of Features- A) Job satisfaction vs WIPL, B) Job satisfaction vs PLIW, C) Job satisfaction vs WPLE

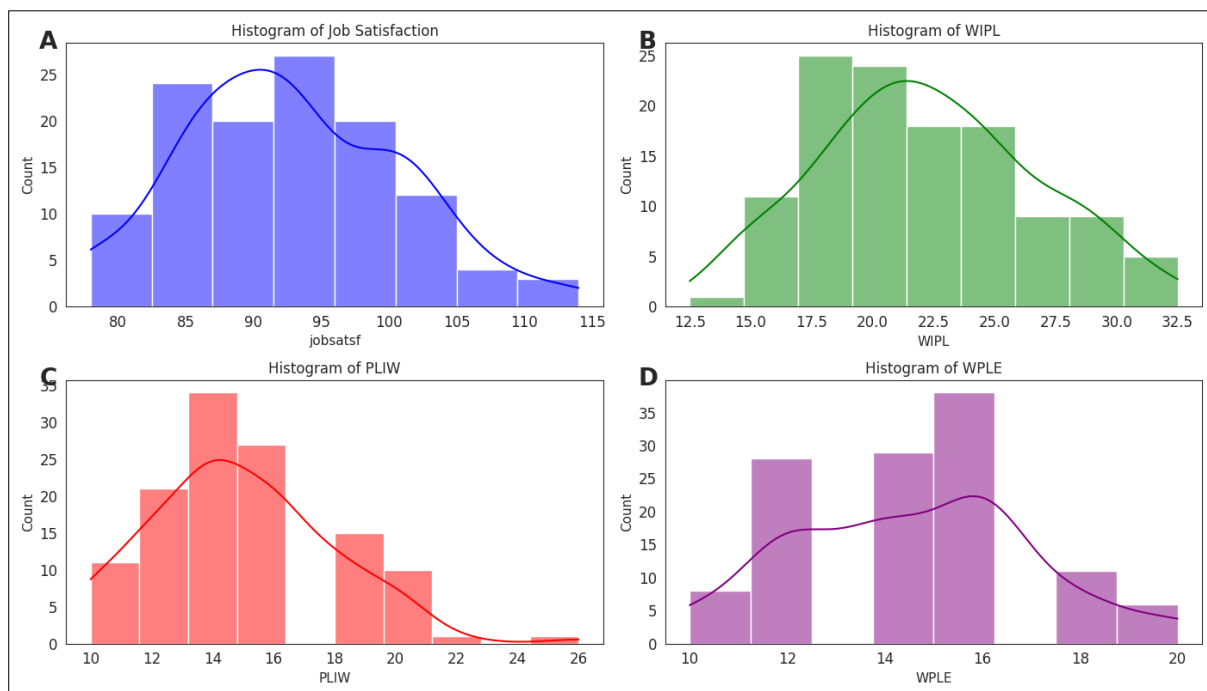


Figure 6: Histograms - A) Job satisfaction, B) WIPL, C) PLIW, D) WPLE

Histogram shown in Figure 6A shows that job satisfaction is concentrated around the 90–100 range. This suggests a relatively satisfied workforce, with some variation. This is also evident from the kernel density curve, which is a roughly bell-shaped distribution, peaking around 90–100, suggesting that most employees have moderate to high job satisfaction.

Histogram of WIPL (Figure 6B) shows that most employees have a moderate workload, fewer experiencing very high workloads. This suggests that workloads are generally manageable for the majority. The kernel density curve shows a sharp peak at 20.0, tapering off toward higher values, confirming the right-skewed nature.

Histogram of PLIW (Figure 6C) shows that most employees have a PLIW around 18, which indicates a moderate level of productivity or performance. Fewer employees have very high PLIW values, suggesting that extreme productivity or performance levels are less common. The kernel density curve shows a peak at 18, tapering off toward higher values, confirming the right-skewed distribution.

Histogram of WPLE (Figure 6D) shows that most employees have moderate to high work performance or productivity levels indicating a consistent performance level across the workforce. The kernel density curve shows a broad peak around 16–18, with a slight dip in between, suggesting a relatively normal distribution with some variation. Thus, majority of employees have moderate workloads, productivity, and performance, with some variation at the extremes. To predict job satisfaction (jobsatsf) based on the other factors (WIPL, PLIW, WPLE), we'll follow these steps:

- A) Preprocess the data (handle missing values, select features, split data).
- B) Use Grid Search CV to find the best hyperparameters for multiple models.

C) Train the best model and evaluate its performance.

D) Report the best model and its accuracy.

Figure 7 shows the accuracy of the model. We used the grid search function to test different machine learning model by tuning different parameters, we found that Random Forest gave the maximum accuracy of 71.23%. This accuracy is quite less. The reason behind this is smaller number of records. More the data, higher is the accuracy. So, the same model can be used in future for better performance.

Work-life balance is important to establish an equilibrium between professional and personal spheres. A well-balanced work-life routine not only reduce stress and anxiety but also improves mental and physical well-being of an employee which enhances satisfaction at work.

To analyze the work-life balance self-designed semi structured questions were given to employees working in BPO, Banking and IT sector. These questions are quite helpful in understanding strategies that could maintain balance and improve the productivity of the employees.

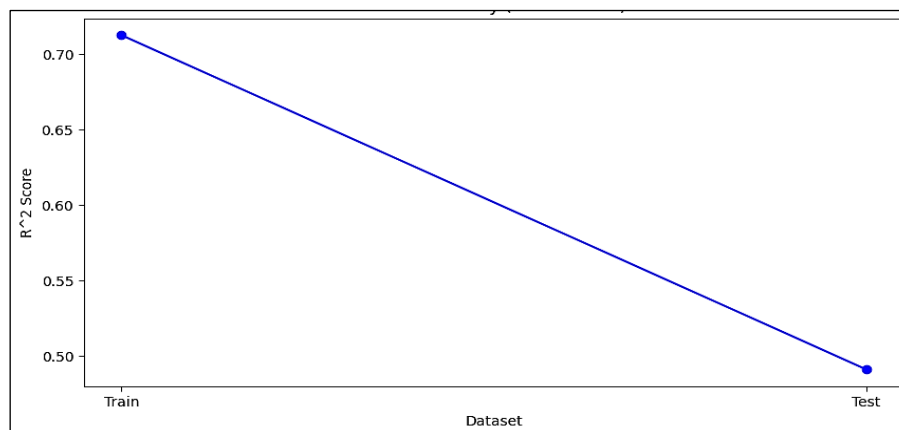


Figure 7: Model Accuracy

Best Hyperparameters: {'learning_rate': 0.01, 'max_depth': 3, 'n_estimators': 100, 'subsample': 0.8}

Training Accuracy (R²): 71.23%; Test RMSE: 4.10; Test R²: 0.49

Table 4: Employees' Responses on Provisions Provided to Employees on 6 Dimensions Flexible Work Arrangements, Paid Time Off (PTO), Clear Communication and Encouraging Breaks, Workload and Time Management Strategies, Family Support, Wellness Programs

Response of Bank employee 40	Response of BPO employee= 40	Response of IT employee= 40
24	16	28
24	14	18
32	16	18
24	18	24
28	16	20
24	12	18

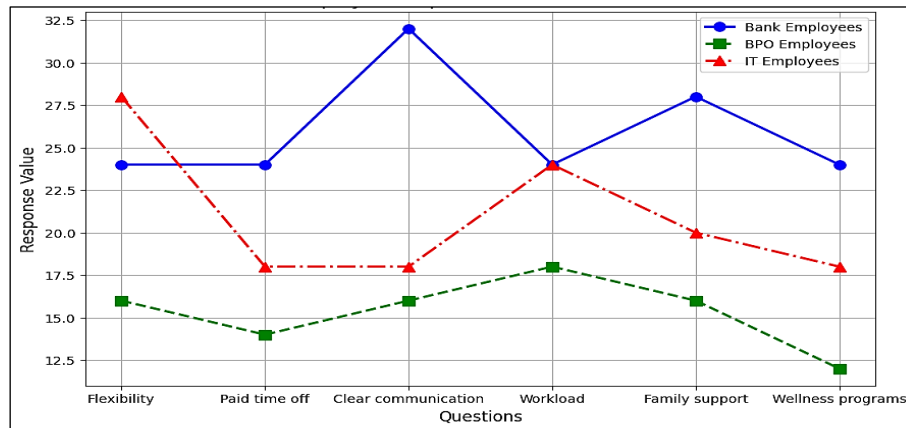


Figure 8: Analyzing Effects of Flexible Work Culture

- A) Banking and IT sectors have stronger work-life balance policies, with better provision and employee satisfaction.
- B) BPO employees experience more dissatisfaction and lack of programs, highlighting a need for improvement in that sector.
- C) Flexible work arrangements and wellness programs appear more accessible in Banking and IT sectors than in BPO.

Since Focus on Work-Life Balance, minimizes absenteeism and enhances employee engagement, companies should provide flexible working (Remote Work, Flexible Hours, Compressed Workweeks) and permitting employees to adjust their schedules to fit personal responsibilities (Table 4). Moreover, wellness Programs (Fitness Initiatives, Mental Health Support, Stress Management, meditation sessions, gym memberships, or health screenings) and realistic deadlines should be used to enhance quality and productivity of employees as evident from Figure 8.

Discussion

The study investigates the relationship between work-life balance and job satisfaction among women bank, BPO and IT employees in Delhi (NCR). The sample consisted of 120 employees, with 40 of each sector. Work-life balance and job satisfaction are crucial aspects of one's well-being, particularly among women professionals in demanding sectors like healthcare and banking. The first objective was to compare the work-life balance and job satisfaction levels between women bank, BPO, and IT employees. Table 1 indicates the mean, standard deviation, and F - values of bank, BPO, and IT professionals on job satisfaction with

respect to the dimensions of work-life balance. The results show that bank professionals reported higher mean scores on job satisfaction compared to healthcare professionals, with a significant difference at 0.01 level. Bank professionals stated higher Mean scores on Work Interference with Personal Life (WIPL), compared to BPO and IT women employees showing a significant difference of 0.01 level. No significant difference was observed between Personal Life Interference with Work (PLIW) and Work Personal Life Enhancement (WPLE). Bank professionals scored higher on WIPL, indicating that they could manage their work as well as family in a better way. BPO women employees scored lower on WIPL. This means that they struggled to strike a balance between their personal and professional lives. This indicates that bank professionals may have more effective strategies for managing work-life balance, or may have a work environment that supports balance, whereas healthcare professionals may struggle to balance due to the demands of their job. A study reported that extended work hours, night shifts, and demands for physical presence at the workplace contribute to work-life conflict, which makes managing work-life balance extremely difficult for doctors, nurses, chemists, and other paramedical professionals (18). They also discovered that maintaining an ideal work-life balance can enhance healthcare professionals' effectiveness. Whereas on two dimensions of work-life balance i.e. Personal Life Interference with Work (PLIW) and Work Personal Life Enhancement (WPLE), No significant differences were observed indicating that both groups share similar levels of PLIW due to factors like family responsibilities, personal commitments, and social

obligations that can interfere with work and on WPLE both may have similar opportunities for personal growth, skill development, and work-life integration. The results of Table 1 indicate higher job satisfaction among women bank professions it could be that organizations when implementing the initiative to integrate work and life, as well as cultivating a positive work attitude, are significant factors in fostering employee job satisfaction.

The second objective of the study was to explore the relationship between work-life balance and job satisfaction among women healthcare professionals and bank employees. Table 2, 3 and 4 indicates the correlation analysis between job satisfaction and the three dimensions of work-life balance: Work Interference with Personal Life (WIPL), Personal Life Interference with Work (PLIW), and Work Personal Life Enhancement (WPLE), since negative items were recoded to show a higher mean. The results suggest that job satisfaction is strongly related to all three dimensions of work-life balance, highlighting the importance of achieving a balance between work and personal life to enhance job satisfaction. Ganguli and Padhy reported a positive correlation between work-life balance and its influence on job satisfaction. They also stated that workplace motivation impacts retention in Indian organizations (19). The prevalent research indicates a direct association between WLB and JS, with socio-demographic factors such as age, marital status, and employment tenure contributing to this relationship (20). Job satisfaction and the WIPL, PLIW, and WPLE subscales were found to be significantly correlated by Anglade, Kuchinka, Mendelson, and Rader in (21). Maintaining a favorable work-life balance significantly increases job satisfaction, which improves organizational performance and provides IT organizations with a competitive advantage (22). The findings of a study conducted by Sahrawat and Rawat among young adult corporate employees in India are consistent with previous research, demonstrating a favorable association between WLB and JS (23). The Social Exchange Theory (24) explains how task performance, work-life balance, job satisfaction and task performance are related to each other. An employee-employer relationship is more loyal and trustworthy when both parties follow the rules of the exchange. This is true as social exchange causes

behaviors to be dependent on others' positive attitude. A good response results in beneficial interactions and partnerships. In organizations having rewarding, gratifying, pleasing and satisfying work environment, where employers consider their employees worries about work-family balance, the employee will feel obligated to be more productive. This indicates that employee behavior or attitude towards their work can be used to indicate job satisfaction.

Limitations and Future Research

Directions

The study offers useful insights into job satisfaction and work-life balance among women professionals working in health care and banking. It focusses on women employees in Delhi and NCR, while valuable, limits the generalizability of findings to other populations. Future research using a mixed method approach would throw light and should aim to include more diverse samples of women employees across various demographics locations, and sectors.

Conclusion

Job satisfaction and work-life balance are not problems that need to be solved. These are persistent issues that need to be addressed. To do both, constant work and reevaluation are required. Your life may be consumed by work, setting priorities for crucial activities and following values are necessary to have a work-life balance. Gaining management skills can improve work-life balance and job satisfaction. Not only are there many unavoidable causes of professional stress, but they might also be detrimental.

The study emphasizes the importance of work-life balance in job satisfaction among women professionals. The findings show that sector-specific activities are required to improve employee well-being and promote work-life balance. The results indicated that female bank employees reported greater levels of work-life balance and job satisfaction in the banking industry's stable and predictable work environment. Female bank employees reported greater levels of work-life balance and job satisfaction than IT and BPO personnel. There was a remarkably strong relation between work-life balance and job satisfaction among female professionals. Work-life balance

characteristics like WIPL and PLIW are the major factors that determine satisfaction in job. Stress can occasionally lead to beneficial results. People who can handle stress are more likely to be motivated and refreshed, which boosts output. The industry may assist women in the workforce by putting organizational stress-reduction techniques into practice. As satisfaction factors vary, so do job satisfaction levels. When creating rules to address these concerns, employers should take employee satisfaction and work-life balance into account. Organizations should continue to research effective human resource techniques for mitigating the impact of work-life imbalances. Organizations should incorporate technology and WLB support systems to help boost employee engagement and performance while also decreasing work stress (25). The findings indicate that sector-specific interventions are required to motivate employees achieve work-life balance to be more productive. Organizations can create policies and programs that address the distinct needs of employees in various sectors. The study's findings have important repercussions for supporting women employees' work-life balance and job satisfaction. Future research should continue to prioritize the experiences of women employees, exploring factors such as: Intersectionality, Sector-specific challenges, and Interventions targeted to support women employees' work-life balance. Employers can develop strategies to address the unique challenges women face in striking balance between work and personal spheres. Policies like flexible work arrangements, childcare support, and mentorship programs can help women employees thrive.

Abbreviations

BPO: Business Process Outsourcing, IT: Information Technology, PLIW: Personal Life Interference with Work, PTO: Paid Time Off, WIPL: Work Interference with Personal Life, WLH: Work-Life Harmony, WLIP: Work-Life Interference with Personal Life, WPLE: Work-Personal Life Enhancement.

Acknowledgement

We are grateful to our participants for their time and effort to give their valuable insights contributing to this study.

Author Contributions

Authors contributed to all stages of the project including the writing of this manuscript. All authors have read and agreed to the published version of the manuscript. Ekta Bhambri Marwaha: conceived and designed the experiments, performed the experiments, Analysis, interpretation of the data, contributed reagents, materials, analysis tools, or data, paper writing, Jaya Gera: conceived and designed the experiments, Analysis of the data, Reema Thareja: conceived and designed the experiments, performed the experiments, analysis of the data, paper writing.

Conflict of Interest

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Declaration of Artificial Intelligence (AI) Assistance

The authors confirm that no generative AI tool was used to create, analyze, or interpret the research data in this manuscript. AI assistance, was limited solely to language editing and grammar improvement, and all intellectual content, interpretations, and conclusions are entirely the authors' own.

Ethics Approval

This study was conducted in accordance with the ethical standards of the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Ethical approval was not sought from an institutional review board as the study involved voluntary participation and anonymized data collection. Participants were informed about the study's objectives, the voluntary nature of their participation, and the confidentiality of their responses. They provided their informed consent electronically before participating in the survey by ticking a required section in the Google Form questionnaire after reading the study instructions. No personal identifiers such as names or email addresses were collected, ensuring that all data remained anonymous.

Consent to Participate: Informed consent was obtained from all individual participants included in the study. Participants were assured that their responses would be kept confidential and that they could withdraw from the study at any time without any consequences.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

References

1. Suguna G, Franco C. A study on work-life balance of nursing staff working in private hospitals in Palayamkottai. *Int J Res Granthaalayah*. 2017;5(5):106-9.
2. Tejera VA. Work-life balance issues among mental health professionals. *MOJ Public Health*. 2014;1(1):14-30.
3. Singh S. Work-life balance: a literature review. *Glob J Commer Manag Perspect*. 2013;2(3):84-91.
4. Greenhaus JH, Allen TD. Work-family balance: a review and extension of the literature. In: Quick JC, Tetrick LE, editors. *Handbook of occupational health psychology*. 2nd ed. Washington (DC): American Psychological Association. 2011:165-83. <https://psycnet.apa.org/record/2010-06010-009>
5. Kossek EE, Lautsch BA. Work-life flexibility for whom? Occupational status and work-life inequality in upper, middle, and lower-level jobs. *Acad Manag Ann*. 2018;12(1):5-36. doi: 10.5465/annals.2016.0059
6. Haider M, Azmi FT. Work-life balance and job satisfaction. *J Gen Manag Res*. 2019;6(1):65-77.
7. Locke EA. The nature and causes of job satisfaction. In: Dunnette MD, editor. *Handbook of industrial and organizational psychology*. Chicago (IL): Rand McNally. 1976:1297-349. <https://cir.nii.ac.jp/crid/1573105975115113600>
8. Tsigilis N, Koustelios A, Togia A. Multivariate relationship and discriminant validity between job satisfaction and burnout. *J Manag Psychol*. 2004;19(7):666-75. doi: 10.1108/02683940410559662
9. Leiter MP, Hakanen JJ, Ahola K, Toppinen-Tanner S, Koskinen A, Väänänen A. Organizational predictors and health consequences of changes in burnout. *J Organ Behav*. 2013;34(7):959-73. doi: 10.1002/job.1830
10. Erdogan V, Yildirim A. Healthcare professionals' exposure to mobbing behaviors. *Procedia Comput Sci*. 2017; 120:931-8. doi: 10.1016/j.procs.2017.11.328
11. Ajala EM. Work-family conflict and family-work conflict as correlates of job performance. *Int J Soc Sci Stud*. 2017;7(1):52-62.
12. Ganguli HC. Job satisfaction scales for effective management. New Delhi: Concept Publishing Co. 1994. https://books.google.co.in/books?hl=en&lr=&id=Fc1M5ZGavoAC&oi=fnd&pg=PA9&dq=12.%09Ganguli+HC.+Job+satisfaction+scales+for+effective+management.+New+Delhi:+Concept+Publishing+Co.+1994&ots=KdL_ZuLlR&sig=SDQliZVD6CcPzs2Kprmgr2YpVVg&redir_esc=y#v=onepage&q=12.%09Ganguli%20HC.%20Job%20satisfaction%20scales%20for%20effective%20management.%20New%20Delhi%3A%20Concept%20Publishing%20Co.%201994&f=false
13. Hayman J. Psychometric assessment of an instrument designed to measure work-life balance. *Res Pract Hum Resour Manag*. 2005;13(1):85-91.
14. Fisher GG. Work-personal life balance: a construct development study [dissertation]. Bowling Green (OH): Bowling Green State University; 2001. <https://www.proquest.com/openview/baa22a6a02edbe6b36b8cf143382e475/1?cbl=18750&diss=y&pq-origsite=gscholar>
15. Edwards JR, Rothbard NP. Mechanisms linking work and family: clarifying the relationship between work and family constructs. *Acad Manag Rev*. 2000;25(1):178-95.
16. Greenhaus JH, Powell GN. When work and family are allies: a theory of work-family enrichment. *Acad Manag Rev*. 2006;31(1):72-92. doi: 10.5465/amr.2006.19379625
17. Maharani A, Tamara D. Occupational stress and work-life balance on turnover intentions. *S Afr J Hum Resour Manag*. 2024;22:a2369. doi: 10.4102/sajhrm.v22i0.2369
18. Shivakumar KN, Pujar V. Work-life balance in the health care sector. *Amity J Healthc Manag*. 2018;3(1):22-31.
19. Ganguli R, Padhy SC. Moderating effect of demographic factors on work motivation and retention of Gen Z. *NMIMS Manag Rev*. 2023;31(2):145-56.
20. Mérida-López S, Extremera N, Quintana-Orts C, Rey L. In pursuit of job satisfaction and happiness. *Scand J Psychol*. 2019;60(1):59-66. doi: 10.1111/sjop.12504
21. Anglade M, Kuchinka DGJ, Mendelson R, Rader M. The relationship between work-life balance, job satisfaction, gender, and race. *J Organ Psychol*. 2019;19(1). doi: 10.33423/jop.v19i1A.1695
22. Manoharan G, Gopalakrishnan N, Sreelakshmi S, *et al*. Work-life balance perceptions of women in the IT and ITes sectors in Kerala. *J Pharm Negat Results*. 2023;14(3):3363-75.
23. Sahrawat P, Rawat P. Work-life balance and job satisfaction among corporate employees. *Int J Workplace Health Manag*. 2021;14(2). doi: 10.1108/IJWHM-05-2020-0081
24. Luthans F. *Organizational behavior: an evidence-based approach*. 12th ed. New York (NY): McGraw-Hill Education; 2011. <https://www.scirp.org/reference/referencespapers?referenceid=2562487>
25. Joshi A, Kumar D, Shabnam S. Work-life balance as mediator between workplace spirituality, organizational commitment, and job satisfaction. *Prabandhan Indian J Manag*. 2024;17(11):23-40. doi: 10.17010/pijom/2024/v17i11/174021

How to Cite: Marwaha EB, Gera J, Thareja R. Work-Life Balance and Job Satisfaction among Women Professionals Using Machine Learning Techniques. *Int Res J Multidiscip Scope*. 2026; 7(1): 919-931. DOI: 10.47857/irjms.2026.v07i01.09080