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Original Research

Deterministic Modelling of Job Satisfaction Among Female Teachers: Insights from Selected Public Universities in Bangladesh

Dr. Meher Neger [1]* and Afifatuj Jannath Resma [1]

[1] Department of Marketing, Comilla University, Kotbari, Comill-3506.
*** Corresponding Author:** Professor Dr. Meher Neger; Email: medha0604@yahoo.com; Mobile: +8801711091330.

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Abstract

In recent times, females play an increasingly vital role in various professions, including teaching in public universities. The main purpose of the study is to identify the factors affecting the Job Satisfaction of female faculties in public universities in Bangladesh. By identifying these findings, the study aims to provide recommendations to enhance the overall well-being and satisfaction of those faculty members. Drawing on the Job Demands-Resources (JD-R) theory, the study tested a model to analyse factors influencing the Job Satisfaction of female faculty members of public universities in Bangladesh. Data were collected from 204 respondents through non-probability purposive sampling using a structured survey questionnaire. The demographic profiles of the respondents were analysed using SPSS version 25. Structural Equation Model (SEM) was conducted with SmartPLS 4 software to analyse the relationships within the proposed framework. The study found that work environment, work-life balance, compensation, and perceived organizational support have a significant and positive impact on Job Satisfaction of female faculty members in public universities. The proposed integrated framework provides a deeper understanding of the variables that influence the Job Satisfaction of female faculty members in public universities. The findings of this study would be helpful for planners and policymakers, as well as public university administrators, to develop strategies that improve the work environment, enhance female faculty members' well-being, and increase Job Satisfaction by understanding the key factors that influence their satisfaction and effectiveness within the institution.

Keywords— *Work environment, Work-life balance, Compensation, Perceived Organizational Support, JD-R Theory, Job Satisfaction, Female Faculty, Bangladesh, PLS-SEM.*

Introduction

Public universities are vital centers for education, research, and innovation, with female faculty members playing a key role. However, job satisfaction among female teachers in Bangladesh's public universities remains underexplored [1]. Job satisfaction, reflecting employees' overall feelings about their work, is crucial for productivity, retention, and workplace harmony. Satisfied employees tend to build stronger relationships, improve productivity, and remain in their positions longer.

Despite growing scholarly interest in job satisfaction among female teachers, research specific to public universities in Bangladesh remains limited. Few studies have explored the relationships between key factors, such as work environment, work-life balance,

compensation, and organizational support, and their impact on job satisfaction [2-6]. Additionally, the Job Demands-Resources (JD-R) theory [7] is rarely applied to these relationships. This study addresses these gaps by examining how these factors affect the job satisfaction and well-being of female teachers in Bangladesh's public universities. This study examines the challenges faced by female faculty members in Bangladesh's public universities, focusing on resource limitations, societal expectations, and workplace policies. It uses the Job Demands-Resources (JD-R) theory [8] to investigate how workplace demands and resources affect their Job Satisfaction. It identifies key factors, including a supportive work environment, equitable compensation, work-life balance, and organizational support. The research provides insights to improve faculty retention, promote equity, and enhance institutional success, informing policies for a better academic environment.

Objectives of this study

The main objective of this study is to identify the factors influencing the Job Satisfaction of female teachers in public universities in Bangladesh. Specifically, the study aims to:

- Examine the determinants of Job Satisfaction, including work environment, work-life balance, compensation, and perceived organizational support;
- Provide policy recommendations to assist policymakers in fostering supportive work environments that enhance Job Satisfaction and promote the well-being of female teachers.

Literature Review

Theoretical Background: Job Demands-Resources (JD-R) Theory

The Job Demands-Resources (JD-R) theory, introduced by [1], provides a comprehensive framework for understanding how workplace factors impact employee well-being and Job Satisfaction. This theory categorizes workplace characteristics into job demands and job resources. Job demands, such as workload and role conflicts, can lead to strain if excessive. Job resources, including supportive work environments, work-life balance, fair compensation, and organizational support, help employees meet their goals, reduce strain, and foster motivation and satisfaction.

The JD-R theory is relevant to this study as it explains how the balance between job demands and resources affects job satisfaction among female teachers in public universities. Female faculty often face challenges like balancing professional and personal roles. By applying the JD-R framework, this study examines how supportive environments, work-life balance, and fair compensation can reduce demands and enhance job satisfaction. Previous studies emphasize the critical role of organizational support and work-life balance in enhancing job satisfaction [9-11]. This theoretical approach not only supports the analysis but also offers actionable insights for institutions to foster an environment that meets the needs of female faculty members, thereby enhancing their well-being and productivity.

JD-R Theory and Job Satisfaction of Female Faculty

The Job Demands-Resources (JD-R) Theory suggests that job satisfaction is influenced by the balance between job demands and resources, such as supportive work environments, work-life balance, and compensation. For female faculty, resources like mentorship, organizational support, and flexible policies help reduce stress and enhance satisfaction.

When resources meet demands, job satisfaction and well-being improve [1, 12]. Job satisfaction reflects overall contentment with factors like work environment, compensation, and workload, which influence attitudes and performance. Female faculty members are women in academic positions such as professors, lecturers, or researchers who contribute to teaching, research, and service within educational institutions, particularly universities.

A supportive, inclusive work environment is a key resource that helps female faculty manage stressors like workload, discrimination, and gender bias. Positive relationships, fair treatment, and unbiased career progression reduce burnout and enhance job satisfaction. Work-life balance, including flexible hours and parental leave, helps balance professional and personal responsibilities. Fair compensation reduces financial stress, while perceived organizational support, such as mentorship, improves morale and retention. According to JD-R theory, these resources reduce job demands, promote well-being, and increase job satisfaction by improving work engagement and reducing stress.

Work Environment

The work environment encompasses the physical, social, and cultural conditions of work, including workspace layout, equipment, interpersonal relationships, organizational culture, and leadership styles [13,14]. Research shows that job resources, like teaching and social support, enhance female faculty satisfaction through work engagement [15]. A supportive work environment improves employee well-being, productivity, and retention (Ashraf, 2019), and fosters creativity and innovation [16]. Impact on job satisfaction stressing its importance for female faculty [17,18]. This study emphasizes how both perceptions and expectations of the work environment influence job satisfaction among female faculty members in public universities.

Work- Life Balance

Work-life balance (WLB) is a key factor influencing job satisfaction, especially among female faculty members in public universities. Healthy WLB reduces work conflict and stress, leading to higher job satisfaction [5]. Studies show that job satisfaction is vital for task accomplishment and employee retention, with a positive job perception enhancing satisfaction [19,20]. The mediating role of WLB in the relationship between job resources and job satisfaction, with expectations of adequate WLB influences how job resources impact satisfaction [6].

Compensation

Compensation is the combination of all cash incentives and the mix of fringe benefits that an employee receives from a company [21]. This includes salaries, wages, bonuses, benefits, incentives, and other forms of remuneration aimed at attracting, retaining, and motivating employees examined factors predicting Job Satisfaction of female faculty members among faculty members in a Saudi Higher Education Institution, finding that the perception of fair and competitive compensation positively predicts satisfaction among female faculty members [3,22]. Similarly, the perception of fair and adequate compensation positively influences overall satisfaction among female faculty members in the public sector in Sri Lanka,

highlighting the importance of female perception of compensation in determining their satisfaction levels [20].

Perceived Organizational Support (POS)

Perceived Organizational Support (POS) refers to the extent to which employees believe that their organization values their contributions, cares about their well-being, and supports their professional development [23]. Similarly, higher levels of perceived organizational support were associated with greater satisfaction over time, highlighting the importance of meeting female faculty members expectations of support to enhance their satisfaction levels [24]. The combined effects of perception and expectation perspectives on female faculty members outcomes [25,26]. They found that when female faculty members both perceive and expect high levels of organizational support, it positively impacts their performance and satisfaction [27].

Conceptual Framework and Hypotheses Development

The study focuses on both perception and expectation perspectives to understand how these factors impact the Job Satisfaction of female faculty members in their roles as university teachers. It is based on a model with four independent variables and one dependent variable related to job satisfaction. Various models or hypotheses have been proposed to understand Job Satisfaction of female faculty members within this framework. The Oval model has been used in this study and the literature suggests the following research model:

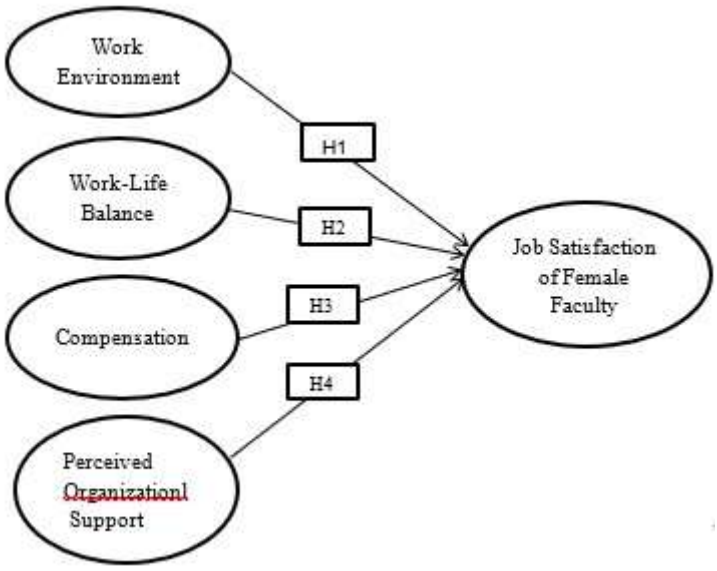

Figure 1: Conceptual Framework

The work environment encompasses physical, social, and cultural conditions that impact employee well-being and productivity [13,14]. The JD-R model suggests that job resources, such as administrative support and adequate resources, buffer job demands and enhance job satisfaction [1]. Research has shown that the social and physical aspects of the work environment significantly influence employee well-being and productivity. Teaching and social support improve engagement and satisfaction [15], while the role of supportive

environments in fostering satisfaction among female faculty [17]. In Bangladesh, connect conducive work conditions to faculty retention and quality education [28,18]. This study examines how perceptions of the work environment affect the job satisfaction of female faculties in public universities in Bangladesh. Existing literature indicates that factors like manageable workloads, administrative support, and adequate resources are essential to job satisfaction. A manageable workload reduces stress and burnout, while administrative support enables faculty to focus on their roles without added burdens. Access to resources, such as office space, teaching materials, and technology, allows faculty to perform their duties effectively. Building on these findings, this study hypothesizes that a positive work environment characterized by manageable workloads and resource availability significantly enhances job satisfaction among female faculty in public universities. Based on this, we propose:

H1: The work environment, including manageable workload, adequate administrative support, and sufficient resources, is positively associated with the Job Satisfaction of female faculties in public universities.

Work-Life Balance (WLB) refers to the ability to effectively manage professional responsibilities while maintaining personal well-being. For female faculty members, maintaining this balance is crucial for overall well-being and job satisfaction. Previous studies show that a positive WLB has a significant impact on job satisfaction. WLB positively influences job satisfaction among female faculty in public universities [29]. Similarly, A healthy work-life balance reduces stress and improves job engagement, enhancing quality of life for female faculty [30].

Research shows that achieving work-life balance lowers stress and work-family conflict, which in turn improves job satisfaction. For female faculty, flexible work arrangements, such as flexible hours and access to university-provided resources like childcare assistance, are essential for maintaining this balance [31]. The importance of work-life balance in increasing job satisfaction, particularly in India, reinforcing the role of supportive job resources [19]. Based on these findings, we expect a positive relationship between work-life balance and job satisfaction. Previous studies [19,29] demonstrate that a balanced work-life environment reduces stress and work-family conflict, which enhances job satisfaction. Based on previous research, we hypothesize:

H2: Work-life balance, including flexible work arrangements, and access to support resources is positively associated with the Job Satisfaction of female faculties in public universities.

Compensation plays a critical role in the job satisfaction of female faculty members. Previous research shows that fair and competitive compensation positively influences job satisfaction. Reasonable compensation boosts productivity and satisfaction [32], while the importance of perceiving compensation as fair [22]. Compensation includes both direct financial rewards (salaries, bonuses) and indirect benefits (healthcare, retirement plans), which are essential for attracting and retaining faculty, particularly in developing countries like [20,21]. Perceived fairness of compensation significantly impacts job satisfaction, as it reduces financial stress

and fosters a sense of recognition and equity. This relationship is further supported by studies showing that when female faculty members perceive their compensation as adequate and aligned with their contributions, their job satisfaction increases [20]. Based on this literature, the hypothesis is that compensation positively affects the job satisfaction of female faculty members in public universities. By ensuring fair, competitive compensation packages, universities can enhance female faculty satisfaction and retention, improving overall productivity and performance.

Based on this, we hypothesize:

H3: Compensation, including financial incentives, recognition, career development opportunities, and benefits, is positively associated with the Job Satisfaction of female faculties in public universities.

Perceived organizational support plays a significant role in enhancing job satisfaction among female faculty members. Higher levels of perceived support are linked to greater job satisfaction over time [24]. Similarly, [25,26] demonstrated that when female faculty members perceive and expect strong organizational support, their job satisfaction and performance improve. Organizational support encompasses material benefits as well as emotional care, recognition, and professional development opportunities. The importance of meeting support expectations to boost satisfaction and retention [26,27]. When female faculty members feel valued, supported, and have access to resources like professional development and work-life balance, their job satisfaction and engagement improve. These studies suggest that when organizations meet these support expectations, it leads to higher satisfaction and retention rates. Based on this, we hypothesize:

H4: Perceived organizational support (POS), including emotional support, professional development resources, recognition, and flexible work arrangements, is positively associated with the Job Satisfaction of female faculties in public universities.

Materials and Methods

Research Design

This study used a descriptive research design and a survey-based approach with a self-administered questionnaire to examine factors influencing female faculty job satisfaction in Bangladesh's public universities. It analysed four key factors across 27 items, combining descriptive and quantitative methods to explore relationships, test hypotheses, and provide comprehensive insights into their experiences and perspectives.

Participants

This study surveyed 204 female faculty members from Bangladesh Agricultural University, Comilla University, and Chittagong University to ensure geographic diversity and institutional representation. A structured questionnaire captured various demographics, including age, education, and professional rank, making the sample representative of female faculty in Bangladesh’s public universities.

Sampling Technique & Sample Size

This study used purposive and non-probability sampling to select 204 female faculty members from public universities in Bangladesh. Purposive sampling targeted the specific study group, while non-probability sampling was chosen for efficiency and cost-effectiveness. The sample size was determined based on feasibility and prior research, aligning with the study's objectives.

Questionnaire Development

The questionnaire consists of closed-ended questions for consistency and ease of analysis. It has two sections: one assessing job satisfaction factors, such as work environment, work-life balance, compensation, and organizational support and another collecting demographic data (age, education, rank, and experience) to analyse their impact on job satisfaction.

Data Collection Method

The study used both primary and secondary data for comprehensive analysis. Primary data was collected through a survey using a structured questionnaire, while secondary data was gathered from articles, books, and electronic databases like Google Scholar and Emerald Insight. These sources provided theoretical background and validated findings. Data collection took place over one month, from March 12 to April 12, 2024, with 27 questionnaires completed by respondents.

Measurement Scale of Dependent and Independent Variables

The study used a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree) to assess variables, ensuring clarity and reliability. Variables were adapted from established studies. Before analysis, data preparation steps were taken to ensure reliability. Although 209 respondents were collected, only 204 were included in the study after handling missing data through exclusion. This process ensured the dataset's integrity and the accuracy of the analysis. The Origin of constructs and measured variables are shown in the following table:

Table 2: Origin of constructs and measured variables

Constructs	Number of items	Origin
Work Environment	4	(Brown et al., 2019 and Gastearena-Balda et al., 2021)
Work – Life Balance	4	(Dousin et al., 2021, Rashim& Kataria,2023)
Compensation	4	(Kuwaiti et al.,2020, Wickramasinghe 2023)
Perceived Organizational Support	4	(Deschenes 2023, Al-Refaei et al.,2024)
Job Satisfaction of Female Faculty members	5	(Ashraf, 2020)

Source: Adopted from previous study

Data analysis Techniques

The study used SmartPLS 4.0 for Structural Equation Modelling (SEM) to test hypotheses and evaluate the conceptual model. The measurement model was assessed using Confirmatory Factor Analysis (CFA), factor loadings, AVE, and Cronbach's alpha to ensure

reliability and validity. Discriminant validity was verified using the Fornell-Larcker Criterion and HTMT ratio, while VIF checked multicollinearity. The structural model examined effect sizes (f^2), model fit (R^2), and predictive relevance (Q^2). Additionally, SPSS 25 was used for descriptive statistics to analyse respondents' demographic profiles.

Result and Discussions

Among 204 respondents participating in the study regarding the respondents age category, the majority (62.7%) were aged 31-40 years, with 204 respondents. The next highest group was aged 41-50 years, representing 35.3% of respondents, with 72 individuals. Regarding Education, 68.1% were PhD and 31.9% were Master Degree. In terms of professional rank, 11.3% were lecturers, 37.3% were assistant professors, 32.4% were associate professors and 19.1% were professors. Monthly Income showed that 16.7% earned between 30000-40000, 27.9% earned between 40001-50000, and 18.1% earned above 80000. Further, concerning the works' experiences in the university, the finding revealed that 36 (17.6%) of respondents have less than 5 years of experience in the university. Hence the study showed that 90 (44.1%) respondents have more than 10 years of work experience.

Table 1: Demographic profile of the respondents

Respondents Profile	Category	Frequency	Percentage
Age	Under 30	2	1
	31-40	128	62.7
	41-50	72	35.3
	Over 50	2	1
Education	Master Degree	65	31.9
	PhD	139	68.1
Professional Rank	Lecturer	23	11.3
	Assistant Professor	76	37.3
	Associate Professor	66	32.4
	Professor	39	19.1
Monthly Income	30000-40000	34	16.7
	40001-50000	57	27.9
	50001-60000	26	12.7
	60001-80000	50	24.5
	Above 80000	37	18.1
Job Experiences in Public University Teaching	Less than 5 years	36	17.6
	5-10 years	78	38.2
	More than 10 years	90	44.1

Source: SPSS outcomes based on primary data

Descriptive Analysis

The study used mean and standard deviation scores to explore all aspects of the measured factors. A higher mean value indicates greater importance, as perceived by respondents, based on a 5-point Likert scale (1 = "Strongly Disagree" to 5 = "Strongly

Agree").

Table 3: Descriptive Statistics

Constructs	N	Mean	Std. Deviation
Work Environment	204	4.0215	.25485
Work-Life Balance	204	4.0613	.29452
Compensation	204	4.0858	.29569
Perceived Organizational Support	204	3.9632	.27609
Job Satisfaction of Female Faculty members	204	4.0039	.27360

Source: SPSS outcomes based on primary data

As shown in Table 3, compensation had the highest mean score (M = 4.0858, SD = .29569), indicating it is considered the most important factor. On the other hand, Perceived Organizational Support had the lowest mean score among the examined factors (M = 3.9632, SD = .27609), though still above the scale midpoint, reflecting moderate importance.

Table 4: Factor Loadings, Reliability, and Validity

Constructs	Items	Factor loading	AVE	CR	Cronbach's alpha
Work Environment	WE1	0.898	0.697	0.877	0.854
	WE2	0.887			
	WE3	0.832			
	WE4	0.709			
Work – Life Balance	WLB1	0.845	0.678	0.861	0.843
	WLB2	0.831			
	WLB3	0.854			
	WLB4	0.761			
Compensation	Com1	0.733	0.576	0.807	0.767
	Com2	0.807			
	Com3	0.719			
	Com4	0.772			
Perceived Organizational Support	POS1	0.826	0.676	0.843	0.84
	POS2	0.838			
	POS3	0.834			
	POS4	0.79			
Job Satisfaction of Female Faculty members	JSF1	0.86	0.715	0.911	0.899
	JSF2	0.851			
	JSF3	0.895			
	JSF4	0.886			
	JSF5	0.725			

Source: Smart-PLS outcomes based on primary data

The mean scores for most factors were relatively similar, suggesting moderate levels of importance across all aspects, with no significant variation between perspectives. The mean

scores indicate that the factors generally have similar levels of importance, with only minor variation between them.

Validity and Reliability Analysis

According to Hair et al. (2020), all models must be evaluated for convergent validity and reliability, with factor loadings of at least 0.70 for each measurement variable. As shown in Table 4, the factor loadings range from 0.898 for *Work Environment (WE1)* to 0.725 for *Job Satisfaction of Female Faculty Members (JSF5)*, indicating that all items have factor loadings above the threshold of 0.70. This indicates a strong association between each measurement item and its construct, confirming the convergent validity of the constructs. While loadings between 0.60 and 0.70 are acceptable, the values in this study provide confidence that the measurement items accurately represent their respective constructs.

The Average Variance Extracted (AVE) assesses convergent validity by measuring variance captured by a construct versus measurement error. An AVE of 0.50 or higher is acceptable (Hair et al., 2020). As shown in Table 4, the AVE values in this study ranged between 0.697 and 0.715, all of which are well above the 0.50 threshold, ensuring construct reliability. Higher AVE values indicate stronger validity, and all values in this study confirm substantial convergent validity.

Both Cronbach's alpha and Composite Reliability (CR) are used to test internal consistency. Cronbach's alpha evaluates the internal consistency based on average inter-item correlations, while Composite Reliability (CR) is considered more reliable for reflective models, as it accounts for different indicator loadings. As shown in Table 4, the Cronbach's alpha values range from 0.854 to 0.899, and the Composite Reliability (CR) values range from 0.877 to 0.911, both of which are above the recommended threshold of 0.70. While values closer to 0.90 are ideal, those between 0.70 and 0.90 are still considered acceptable for research purposes. Therefore, all CR and Cronbach's alpha values in this study indicate a satisfactory level of internal consistency, confirming that the constructs are reliable for further research.

Discriminant Validity

The Fornell and Larcker (1981) criterion assesses discriminant validity by comparing the square root of the average variance extracted (AVE) for each construct with its correlations to other constructs. Discriminant validity is confirmed if the AVE of a construct is higher than its correlations with other constructs. According to Table 5, Discriminant validity was found as the √AVE for all constructs was greater than their respective inter-construct correlations (Fornell and Larcker, 1981). Overall, the reliability and validity of the measurement model were confirmed.

Table 5: Discriminant validity - Fornell & Larcker Criterion

Constructs	Compensation	Perceived Organizational Support	Job Satisfaction of Female Faculty members	Work Environment	Work Life Balance

Compensation	0.759				
Perceived Organizational Support	0.422	0.822			
Job Satisfaction of Female Faculty members	0.348	0.774	0.845		
Work Environment	0.457	0.559	0.659	0.835	
Work-Life Balance	0.563	0.543	0.633	0.689	0.824

Table 6: Discriminant HTMT

	Com	POS	JSF	WE	WLB
Com					
POS	0.489				
JSF	0.375	0.883			
WE	0.553	0.660	0.736		
WLB	0.682	0.642	0.697	0.803	

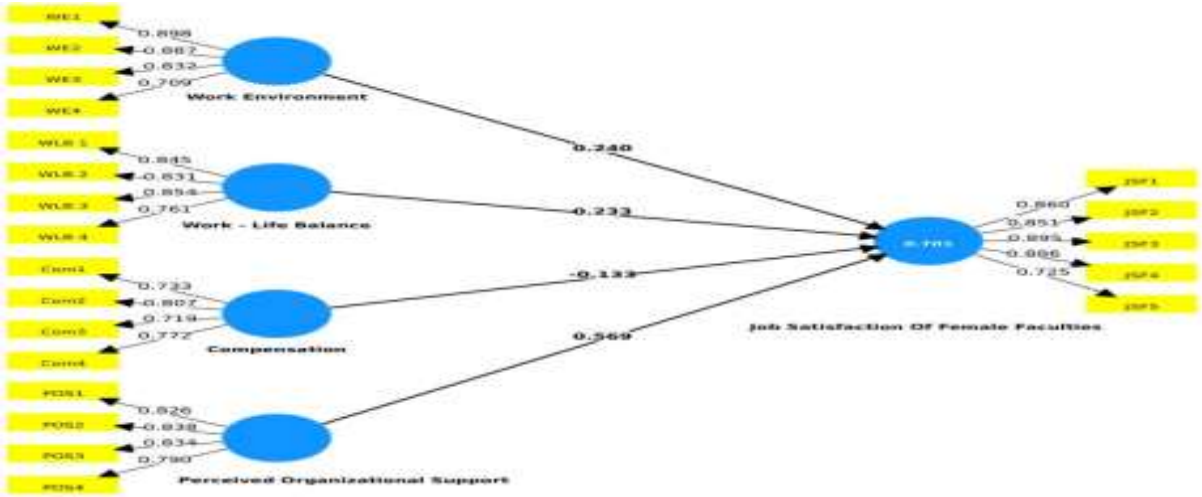

Figure 2: Measurement Model

The Heterotrait-Monotrait Ratio (HTMT) is used to assess discriminant validity by measuring the correlation between different constructs. The HTMT values, as shown in the table 6, all HTMT values are below the threshold of 0.90, which indicates satisfactory discriminant validity between the constructs. The measurement model for this study was evaluated by using PLS-SEM which is presented in the *Fig.2*

Assessment of Structural Model

After examining the measurement model, the structural model was applied to test the research hypotheses among all the study variables in terms of exogenous variables and endogenous

variables. This analysis helps to understand how different factors interact and influence each other within the research framework. The current study followed the steps recommended by Hair *et al.* (2020) to test the Structural Model, such as multicollinearity test, analysis of R^2, analysis of effect size (f) and hypotheses testing.

Multicollinearity Test and Effect Size (f2)

The study used a multicollinearity test to measure the independent variables that were highly correlated among themselves. The estimated path coefficients were affected by the predictor constructs of collinearity. As suggested by Cohen, (1988) researchers frequently use the f square to quantify the relative impact of an exogenous (independent) construct on an endogenous (dependent) construct. In addition, the effect size (f) was measured. The f values for predictor variables are assessed as follows: .35 (substantial), .15 (moderate) and .02 (weak) effects [33].

Table 7: Multicollinearity Test and f-square

Constructs	VIF	f-square
Work Environment	2.109	.091
Work-Life Balance	2.328	.078
Compensation	1.513	.039
Perceived Organizational Support	1.594	.679

In this study, Table 7 presented the results of the multicollinearity test, showing that there were no significant issues with multicollinearity. This was confirmed by examining the Variance Inflation Factor (VIF) scores, which were found to be below the cut-off of 10 [34]. This means that the independent variables in the study were not highly correlated with each other, ensuring that the estimates of the regression coefficients were reliable. In Table 7, the f-square results indicate that the effect sizes (f values) range from 0.039 (weak) to .679 (substantial). This means that some predictor variables have a small impact (weak effect), while others have a larger impact (substantial effect) on the dependent constructs. These effect sizes provide valuable insights into understanding which variables play a more significant role in explaining the variability of the dependent constructs in our study.

Coefficient of Determination (R square) and Predictive Relevance (Q^2)

R^2 (coefficient of determination) is crucial for assessing a structural model's integrity [35]. R^2 values above .75 indicate substantial explanatory power, above .50 suggest moderate power, and below .25 indicate weak power. A positive Q^2 value confirms the model's predictive validity [33,36]. As Table 8 shows a positive Q^2, the model is statistically significant. In our study, the R^2 for endogenous constructs exceeds .50, indicating that the model has a moderate level of explanatory power. This suggests that the model effectively explains a significant portion of the variability in the endogenous variables, providing valuable insights into the

relationships between them. Table 8 shows how well the model predicts Job Satisfaction of female faculty members. The Q^2predict value of 0.680 is positive, which is good because Q^2

Table 8: R square and Cross Validated Redundancy

Constructs	R square	Adjusted R	Q^2predict	RMSE	MAE
Job Satisfaction of Female Faculty members	0.701	0.695	0.680	0.610	0.343

must be greater than zero for the model to be valid (Hair *et al*. 2019; Fornell). This shows the model has predictive ability. The RMSE (Root Mean Square Error) of 0.610 and MAE (Mean Absolute Error) of 0.343 indicate that the model's predictions are fairly close to the actual values, suggesting it accurately assesses Job Satisfaction of female faculty members.

Hypotheses Testing Result

The structural model analysis includes the paths, path coefficients, t values, p values, and decisions. Hypotheses were tested using a two-tailed t-test at a significance level of 5%. The coefficients are statistically significant if the measured t-value is greater than the critical value of 1.96. According to Table 9 and Figure 3, the path coefficients for four latent constructs work environment, work-life balance, compensation, and perceived organizational support, showed a positive and significant association with Job Satisfaction of female faculty members at $p < 0.05$. As a result, hypotheses ***H1, H2, H3*** and ***H4*** were accepted. The structural model for this study was evaluated by using PLS-SEM which is presented in the Fig.3

Table 9: Hypothesis Testing

Path	Path Coefficients (β)	T values	P values	Decisions
H1: Work Environment -> Job Satisfaction of Female Faculties	0.240	2.349	0.019	*Supported*
H2: Work Life Balance -> Job Satisfaction of Female Faculties	0.233	2.324	0.020	*Supported*
H3: Compensation -> Job Satisfaction of Female Faculties	-0.133	2.281	0.023	*Supported*
H4: Perceived Organizational Support -> Job Satisfaction of Female Faculties ***Note: p*< 0.05, based on the two-tailed test; t = 1.96.***	0.569	4.392	0.000	*Supported*

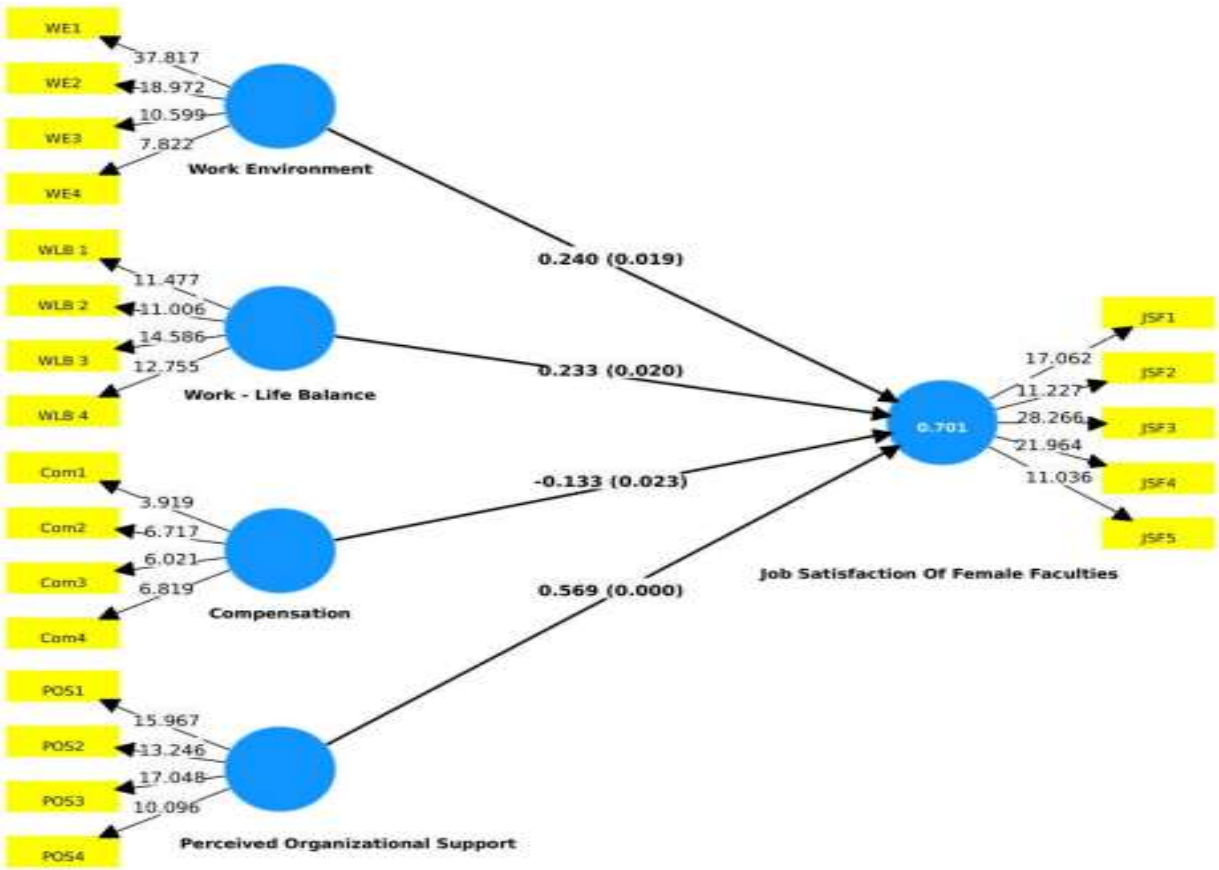

Figure 3: Structural Model

The study's statistical outputs provide insights into the factors influencing the Job Satisfaction of female faculty members in public universities in Bangladesh, aligned with the Job Demands-Resources (JD-R) theory. This theory provides a valuable framework for understanding how various factors impact the Job Satisfaction of female faculty members in public university teachers. These findings partly support the conceptual model proposed. According to the findings of the above analysis, there are four independent variables - Work Environment, Work-Life Balance, Compensation, Perceived Organizational Support have a significant and positive impact on the Job Satisfaction of female faculty members. The study's findings indicate a significant impact of the work environment on the job satisfaction of female faculty members, consistent with prior research. A positive correlation between an organizational work environment and various aspects of job satisfaction, involvement, and productivity among female academics. Similarly, [18] emphasized the critical role of a supportive work environment in enhancing job satisfaction for public university faculty. Based on the analysis, the researcher identified a significant association between the work environment and Job Satisfaction of female faculties ($\beta 1 = 0.240$, $t = 2.349$, $p < 0.05$). The p-value of 0.019 indicates statistical significance, supporting the relationship between the variables. These findings suggest that the work environment significantly influences the Job Satisfaction of female faculties in public universities in Bangladesh. Therefore, ***H1*** is accepted.

The study's findings emphasize the crucial role of work-life balance in the job satisfaction of female faculty members, aligning with previous research. Achieving work-life balance enhances the quality of life for female teachers [30], while [29] found a significant positive correlation between perceived work-life balance and overall satisfaction among female faculty in public universities. The analysis shows a significant positive relationship between work-life balance and job satisfaction ($\beta 2 = 0.233$, $t = 2.324$, $p < 0.05$). Here, the Work-Life Balance was supported at a significant value of 0.020, which is less than the p value of 0.05. As a result, the study recommends that Work-Life Balance have a significant positive impact on the Job Satisfaction of female faculty members in public universities. Therefore, the hypothesis ***H2*** is accepted.

Compensation is a critical factor that enhances the Job Satisfaction of female faculty members in an organization, particularly within public universities. The study emphasizes the importance of compensation in enhancing the job satisfaction of female faculties, consistent with previous research. A significant positive correlation between compensation structure and job satisfaction among female faculty in Vietnamese universities [37]. Through the analysis, compensation showed a significant association with Job Satisfaction of female faculties ($\beta 3 = -0.133$; $t = 2.281$; $p < 0.05$). The p-value of 0.023 indicates statistical significance, supporting this relationship. This suggests that Compensation significantly influences the Job Satisfaction of female faculty members in public universities. Therefore, hypothesis ***H3*** is accepted.

Lastly, Perceived Organizational Support is another most significant factor of the study and positively affecting the Job Satisfaction of female faculties ($\beta 4 = 0.569$; t-value = 4.392; $p < 0.05$). Here, the Perceived Organizational Support was supported at a significant value of 0.000, which is less than the p value of 0.05. That's why ***H4*** is accepted. Higher levels of perceived organizational support were associated with greater satisfaction among female faculty members over time [24]. The study emphasizes the need for public universities to prioritize supportive work environments to enhance Job Satisfaction of female faculty members and retention of female faculties. Therefore, based on the coefficient results from the study, hypotheses ***H1, H2, H3,*** and ***H4*** have a positive and significant influence on the Job Satisfaction of female faculty members among public university teachers in Bangladesh. This indicates that factors such as Work Environment, Work-Life Balance, Compensation, and Perceived Organizational Support significantly contribute to enhancing Job Satisfaction of Female Faculties [24, 30, 37].

Theoretical Implications

This study contributes to the Job Demands-Resources (JD-R) theory [1] by applying its framework to examine job satisfaction among female faculty members in public universities. It expands the understanding of how job demands and resources impact the satisfaction and well-being of female faculty. The study's findings indicate that factors such as work environment, work-life balance, compensation, and perceived organizational support significantly influence job satisfaction. This emphasizes the relevance of the JD-R theory in understanding the dynamics of job satisfaction in the public universities, particularly for

female faculty members. By addressing these factors, this research fills a gap in the literature, providing empirical evidence of how job demands and resources affect female faculty satisfaction, thus advancing the theoretical understanding of the JD-R model in academic institutions. This not only benefits female faculties but also positively contributes to the overall success of the institutions.

Practical Implications

To enhance Job Satisfaction among female faculty members in public universities in Bangladesh, consider the following recommendations: *Firstly,* public university administrators should prioritize creating a supportive work environment for female faculty by ensuring adequate resources, promoting collaboration, and offering professional development opportunities. By improving the work environment, administrators can increase Job Satisfaction of female faculty members and overall well-being. *Secondly,* public universities should prioritize work-life balance for female faculty by implementing flexible work arrangements, supporting childcare and family responsibilities, and fostering a culture that values balance. These measures will enhance job satisfaction and overall well-being. *Additionally,* ensuring fair and competitive compensation is crucial for retaining and satisfying female faculty members in public universities. Administrators should regularly review salary structures, offer performance-based incentives, and provide opportunities for advancement to ensure that compensation is perceived as fair and equitable. *Finally,* public universities should enhance perceived organizational support for female faculty members by implementing mentorship programs, offering career development opportunities, and recognizing their contributions. Establishing a culture of respect and value is crucial for fostering job satisfaction. By addressing these factors, administrators can create a supportive work environment that improves satisfaction, well-being, and retention, ultimately enhancing faculty effectiveness.

Limitations of the study

In the study, the main objective of this study was to identify the factors influencing job satisfaction among female faculties in public universities in Bangladesh. However, the study has several limitations. *First,* while numerous variables impact job satisfaction, only four were considered: work environment, work-life balance, compensation, and perceived organizational support. *Second,* the sample may not fully represent Bangladesh's diverse population, limiting the generalizability of the findings. *Third,* manual data collection can be costly and logistically challenging. *Fourth,* this research is based on quantitative data, and results may differ if qualitative data were used.

Conclusion and Future Directions

This study examines the factors influencing job satisfaction among female faculty in Bangladesh's public universities, utilizing the JD-R theory. The findings emphasize the importance of the work environment, work-life balance, compensation, and organizational support in shaping satisfaction. The study offers valuable insights for university administrators, emphasizing the need to improve workplace conditions, support systems, and

work-life balance to enhance faculty retention and institutional success. Future research should incorporate additional variables, larger sample sizes, and broader geographic coverage, both within Bangladesh and internationally. Online surveys can reduce costs and logistical challenges while increasing participation rates. A mixed-methods approach, combining both quantitative and qualitative analysis, is recommended to gain a more comprehensive understanding of female faculty job satisfaction.

Authors Contributions

Conceptualization, study design and writing-original draft were contributed by Dr. Meher Neger. Data collection, Data entry, Statistical data analysis and figure preparation were done by Afifatuj Jannath Resma. All authors read and agreed to the published version of the manuscript.

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Conflict of interest

The authors declare that they do not have any conflict of interest.

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