

Can Empowered Female Educators Drive Sustainable Education and Inclusive Growth for Viksit Bharat 2047? A PLS-SEM Study from West Bengal

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Abstract

Female educators play a vital role in strengthening human capital and advancing sustainable development through education. In the context of women empowerment and India's vision of Viksit Bharat 2047, this study examines the determinants of job satisfaction and performance of female educators in higher educational institutions and interprets the findings through the lens of SDG 4 (Quality Education) and SDG 8 (Decent Work and Economic Growth). Using PLS-SEM approach, the study analyses how institutional and work-related factors shape engagement, satisfaction and performance. The results show that a supportive institutional environment, healthy work-life balance and meaningful workplace values significantly enhance the job satisfaction of female educators. Job satisfaction emerges as a key driver of both educators' engagement and educators' performance, while engagement further strengthens the relationship between job satisfaction and performance. Professional growth and development show a modest positive influence on satisfaction, whereas reward and recognition do not demonstrate a strong direct effect in this context. Multi-group analysis indicates that the core relationships remain largely consistent across different types of institutions and marital status groups, highlighting the robustness of the model. Interpreted through the SDG framework, the findings suggest that empowering female educators through supportive work environments and balanced professional lives contributes to better teaching quality (SDG 4) and

promotes decent, productive employment (SDG 8). The study emphasizes the importance of women-centric institutional policies in higher education for building sustainable education systems and inclusive economic growth in India.

Keywords: *Female educators, women empowerment, job satisfaction, engagement, performance, sustainability*

JEL Classification: *I23, J16, J24, Q01*

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1. Introduction

Education plays a transformative role in shaping human capital, fostering social mobility and promoting inclusive economic growth, especially in emerging economies (Li et al., 2025; Prananto et al., 2025). In contexts such as India, higher education institutions serve not only as platforms for knowledge creation but also as critical drivers of sustainable development through quality instruction and institutional stability. Within this ecosystem, female educators occupy a strategically important position. Their contributions extend beyond classroom teaching to mentoring, institutional leadership and curricular excellence, with implications for both gender equity and educational quality. As India progresses toward its developmental vision of Viksit Bharat 2047, strengthening women's empowerment in academia becomes crucial for fostering equitable and sustainable growth (Akpalu et al., 2025).

Women's empowerment in professional settings is associated with equitable opportunities, supportive workplace practices and balanced work-life dynamics. Educational research highlights that educators' motivation and

institutional support positively influence job performance and satisfaction in higher education settings (Kumari & Kumar, 2023). Job satisfaction and perceived organizational support, in turn, have been identified as significant predictors of teacher performance across diverse educational systems and cultures (Li et al., 2025). These relationships underscore the importance of examining both contextual and psychological factors that shape educators' work experiences.

This issue acquires greater relevance when interpreted through the United Nations Sustainable Development Goals (United Nations, 2015). SDG 4 emphasizes inclusive and equitable quality education, acknowledging that teacher competency, satisfaction and engagement directly influence educational outcomes. At the same time, SDG 8 promotes productive employment and decent work for all, including women, emphasizing gender-responsive labour practices and workplace equity (Saluja et al., 2023). Empowered female educators, therefore, occupy a central role in translating these global goals into meaningful institutional practices.

Despite recognition of the centrality of teachers for quality education, empirical studies that emphasizes women's empowerment by integrating job satisfaction, engagement and performance within an SDG framework remain limited, especially in the Indian context. While research increasingly examines teacher engagement and job satisfaction relationships (Wang & Shakibaei, 2025), there is a scarcity of studies that focus exclusively on female faculty and contextualize findings within SDG-linked sustainability paradigms. To address this gap, the present study investigates how factors such as professional growth and development, reward and recognition, institutional environment and culture, work-life balance and workplace spirituality influence job satisfaction among female educators in higher educational institutions. The study further examines how satisfaction drives employee engagement and performance, with engagement acting as a mediator. Partial Least Squares Structural Equation Modeling (PLS-SEM) is employed to test the proposed model, allowing for robust analysis of predictive relationships (Wiyono et al., 2025).

Although the study does not measure SDG indicators directly, SDG 4 and SDG 8 provide an interpretive lens to contextualize findings within sustainable education and inclusive growth frameworks. By linking empowerment-related workplace factors to satisfaction, engagement and performance, the study offers insights for enhancing institutional practices that contribute to quality education and gender-inclusive decent work outcomes, supporting the broader agenda of sustainable development and Viksit Bharat 2047.

2. Objectives of the Study

The general objective of the study is to examine how empowerment-related institutional and work factors influence educators' job satisfaction and performance of female educators in higher education institutions and to interpret the findings within the framework of SDG 4 (Quality Education) and SDG 8 (Decent Work and Economic Growth) in the context of Viksit Bharat 2047. Based on this backdrop, the following specific objectives are crafted:

- a) To examine the influence of the key factors that influence the satisfaction of female educators.
- b) To assess the influence of satisfaction on performance of the female teachers.
- c) To evaluate the mediating role of engagement in linking satisfaction to performance.
- d) To compare the results by multi-group analysis for marital status and types of institutions.
- e) To interpret the validated structural relationships in light of SDG 4 and SDG 8 to understand how empowered female educators contribute to sustainable education and inclusive growth.

3. Review of Past Literature, Formulation of Hypothesis and Conceptual Model

The role of female educators in higher education is pivotal for fostering inclusive growth and sustainable development. As India moves towards Viksit Bharat 2047, the empowerment of women in academia is not merely a matter of social justice but a strategy for achieving quality education (SDG 4) and

decent work (SDG 8). This section reviews existing literature on the determinants of job satisfaction and performance among female educators, the mediating role of engagement and the broader implications for sustainable development.

3.1 Women Empowerment in Higher Education

Women empowerment in higher education refers to the enhancement of authority and autonomy that female educators possess within academic institutions. Empowering leadership behaviours such as delegation, participative decision-making and supportive organizational practices, have been found to improve educators' well-being and overall job satisfaction by reducing workplace constraints and promoting inclusivity (Okçu et al., 2024). Studies focusing on empowering leadership note that such practices can lower perceptions of ostracism and cultivate a positive work environment, enhancing educators' psychological comfort and professional agency (Uslukaya, 2025). Female educators who perceive higher levels of empowerment often exhibit increased professional commitment, enhanced job satisfaction and sustained engagement, suggesting that empowerment acts as a critical antecedent in promoting the quality of academic work and institutional outcomes (Munawar et al., 2025).

3.2 Job Satisfaction and Performance of Teachers

Educator job satisfaction is a well-established determinant of professional performance. Empirical research among university instructors confirms that perceived organizational support and self-efficacy significantly influence job satisfaction, which in turn impacts performance outcomes (Islam & Ahmed, 2018). In this large empirical study of university faculty, perceived organizational support directly influenced teacher job performance and indirectly through increased self-efficacy and job satisfaction (Li et al., 2025). Another strand of research highlights that work engagement and overall satisfaction collectively enhance job performance, reinforcing the idea that motivational and attitudinal factors are indispensable predictors of teacher effectiveness (Zaimoğlu & Dağtaş, 2025). These studies underline that job

satisfaction matters not only as an affective outcome, but also as a precursor to higher performance levels in education.

In line with the empirical evidence, the following hypothesis is formulated:

H_{1a}: Job satisfaction has a significant influence on the performance of female educators in higher education institutions.

3.3 Parameters or Key Factors That Influence Job Satisfaction

- ***Professional Growth and Development***

Professional growth and development is a foundational dimension of empowerment. Access to training programs, research funding, promotion pathways and mentoring opportunities enhances educators' competence and career optimism. Empirical research demonstrates that professional development opportunities positively influence faculty job satisfaction and organizational commitment (Skaalvik & Skaalvik, 2023). When educators perceive growth prospects within their institutions, they experience higher intrinsic motivation and professional fulfilment, which strengthens satisfaction levels (Al-Husseini et al., 2021). For female educators, structured growth opportunities reduce perceptions of stagnation and institutional marginalization, thereby reinforcing empowerment and long-term engagement.

In line with the empirical evidence, the following hypothesis is formulated:

H_{1b1}: Professional growth and development has a significant influence on the job satisfaction of female educators.

- ***Institution Environment and Culture***

Institutional environment and culture shape educators' perceptions of fairness, inclusion and professional respect. Research has demonstrated that organizational support, which include access to resources, developmental opportunities and supportive policies, enhances educators' job satisfaction by boosting their confidence and perceived efficacy (Addimando, 2019). In several studies, it was evident that, perceived support increased work engagement and job satisfaction, indicating that supportive environments are central to positive teacher outcomes (Bogler & Nir, 2012; Chen, 2025). Recent studies continue to confirm that inclusive organizational climates significantly reduce

work-related stress and enhance psychological well-being among faculty members (Dewangan & Goswami, 2025). For female educators, institutional culture determines access to leadership roles, workload equity and work-life integration, thereby directly influencing satisfaction and engagement.

In line with the empirical evidence, the following hypothesis is formulated:

H_{1b2}: Institutional environment and culture has a significant influence on the job satisfaction of female educators.

- ***Reward and Recognition***

Reward and recognition systems represent key extrinsic motivators in academic institutions. Transparent compensation structures, performance-based incentives and symbolic recognition contribute significantly to job satisfaction (Mabaso, 2019). Studies indicate that perceived fairness in rewards enhances morale and reduces turnover intentions among educators (Zhau & Ma, 2022). In higher education, recognition often takes non-monetary forms, including research acknowledgment, leadership roles and academic appreciation. Such recognition has been shown to elevate faculty motivation and satisfaction (Do, 2020). For women in academia, recognition plays a particularly critical role in counteracting historical under-acknowledgment of contributions.

In line with the empirical evidence, the following hypothesis is formulated:

H_{1b3}: Reward and recognition has a significant influence on the job satisfaction of female educators.

- ***Work-Life Balance***

Work-life balance has emerged as a central issue in different professions, particularly for women. In the context of educational institutions, university educators frequently experience work overload, administrative burdens and research pressure, which negatively affect job satisfaction (McDonald & Hatcher, 2023). Empirical findings indicate that flexible policies, supportive supervisors and workload rationalization significantly enhance work-life balance and satisfaction outcomes (Effendi et al., 2025). Gender-sensitive policies like maternity provisions and flexible scheduling have been shown to positively affect women faculty satisfaction and retention (MD & BK, 2017).

Thus, the construct is a crucial empowerment-linked factor influencing satisfaction in higher education contexts.

In line with the empirical evidence, the following hypothesis is formulated:

H_{1b4}: Work-life balance has a significant influence on the job satisfaction of female educators.

- ***Workplace Spirituality***

Workplace spirituality refers to the experience of meaningful work, alignment between personal and organizational values and a sense of community. Studies suggest that meaningful work perception significantly enhances job satisfaction and emotional attachment (Belwalker et al., 2016). In educational institutions, workplace spirituality has been positively associated with intrinsic motivation and psychological resilience (Demir & Çobanoğlu, 2023). Thus, for female educators, value congruence and sense of purpose can strengthen professional commitment and satisfaction levels.

In line with the empirical evidence, the following hypothesis is formulated:

H_{1b5}: Workplace spirituality has a significant influence on the job satisfaction of female educators.

3.4 Employee Engagement as a Mediator

- ***Job Satisfaction and Employee Engagement***

Job satisfaction is widely recognized as a predictor of employee engagement. Educators who are satisfied in their jobs are more likely to be enthusiastic, committed and engaged (Perera et al., 2018). Structural equation modelling studies demonstrate that job satisfaction significantly predicts engagement among teachers (Butakor et al., 2021). So, engagement reflects a motivational state that transforms positive work attitudes into active involvement in institutional responsibilities.

In line with the empirical evidence, the following hypothesis is formulated:

H_{1c1}: Job satisfaction has a significant influence on employee engagement among female educators.

- ***Engagement and Performance***

Employee engagement has been empirically linked to enhanced job performance. Engaged educators demonstrate higher instructional quality, research productivity and institutional involvement (Heng et al., 2020). Research confirms that engagement converts favourable attitudes into quantifiable results by balancing the relationship between job satisfaction and performance. (Lee, 2014). Thus, engagement functions as a psychological mechanism through which empowerment-related factors ultimately influence performance.

In line with the empirical evidence, the following hypothesis is formulated:

H_{1c2}: Employee engagement has a significant influence on the performance of female educators.

Given the proposed interrelationships, the following mediation hypothesis is advanced:

H_{1c}: Employee engagement mediates the relationship between job satisfaction and performance of female educators.

3.5 Linking Empowerment to SDG 4 and SDG 8

The Sustainable Development Goals provide a macro-framework for interpreting teacher-related outcomes. SDG 4 emphasizes inclusive and quality education, which relies heavily on satisfied, engaged and professionally empowered teachers (Akter, 2025). SDG 8 promotes decent work, gender equality and productive employment. Institutions that foster equitable working conditions and empowerment practices contribute directly to decent work indicators (Rai & Brown, 2018). Therefore, enhancing empowerment-driven satisfaction and engagement among female educators aligns with sustainable education systems and inclusive economic growth, supporting the broader developmental vision of Viksit Bharat 2047.

3.6 Multi-Group Differences: Marital Status and Institutional Type

Differences in personal and institutional contexts may influence how empowerment-related factors translate into satisfaction, engagement and performance (Chang & Wang, 2025). Prior research suggests that marital status can shape women's work-life experiences, role expectations and career

progression patterns, potentially altering the strength of relationships within the model (Latif et al., 2023). Similarly, institutional type (e.g., public vs. private) may differ in terms of resource availability, organizational culture, policy support and performance expectations, thereby influencing structural relationships among the constructs (Adinew, 2024; Alkhodary, 2023). Therefore, it is important to examine whether the proposed model operates uniformly across different demographic and institutional categories.

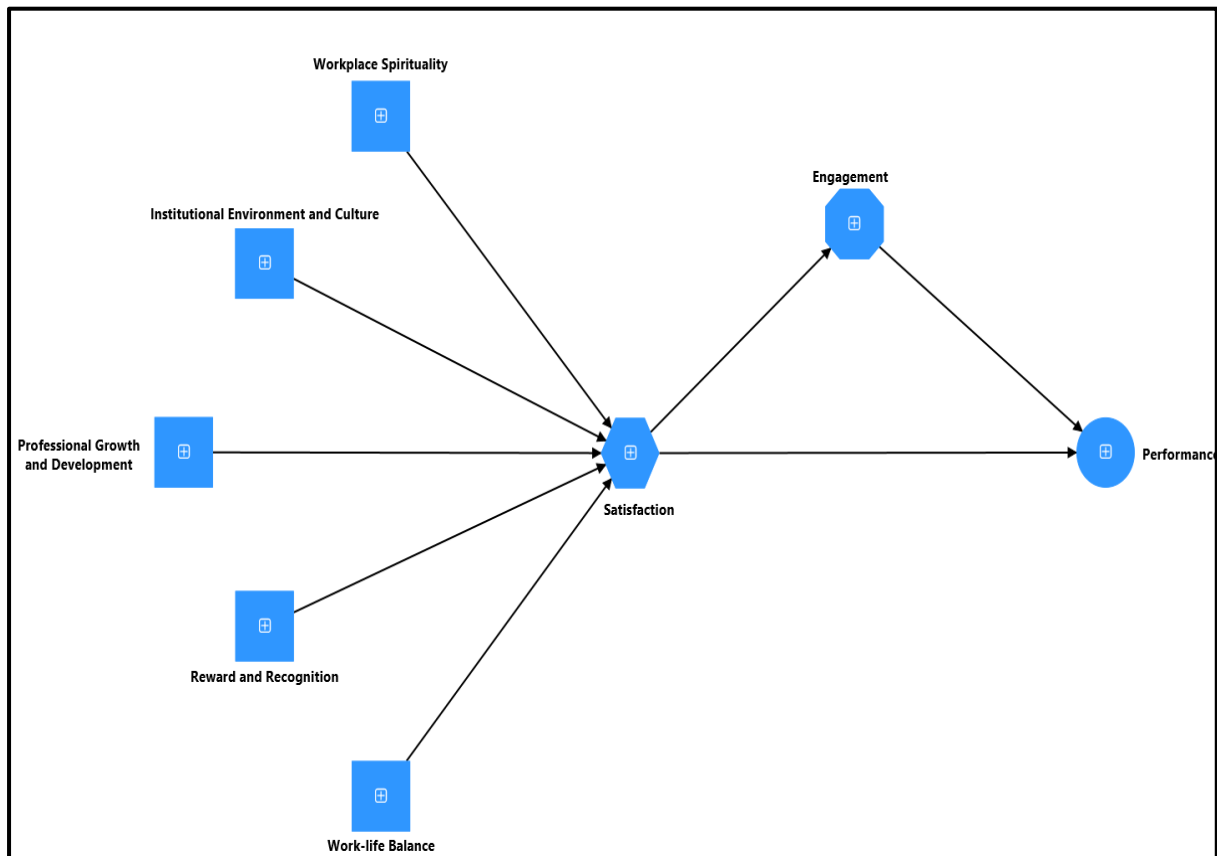
Based on the above arguments, to examine these potential variations, the following hypotheses are formulated:

H_{1d}: There is significant difference between the single female educators of with that of married female educators in respect of the effect of the independent factors.

H_{1e}: There is significant difference between the female educators of government/government-aided HEI with that of female educators of private HEI in respect of the effect of the independent factors.

3.7 Conceptual Model

The proposed conceptual model exhibiting the structural relationships among the study constructs, based on the reviewed literature and designed hypotheses, is illustrated in Figure 1.

Figure 1: Proposed Conceptual Model of the Study

Source: Conceptualised by the Researcher

4. Methodology of the Study

4.1 Research Design

The present investigation employed a quantitative research methodology to examine the attributes influencing female educators' satisfaction and their impact on performance within the framework of higher educational institutions in West Bengal.

4.2 Design of Research Instrument and Collection of Data

Primary data were obtained through a structured questionnaire. A pilot study was undertaken to ascertain if the items selected for the investigation necessitated any modifications. Following the respondents' feedback, essential revisions were implemented concerning item alterations and also rephrasing some of them. The initial section of the questionnaire documented demographic information, whereas the subsequent segment assessed responses related to various constructs using a Five-point Likert scale,

ranging from 1 to 5, with 1 representing Strongly Disagree and 5 representing Strongly Agree.

4.3 Population and Sampling

In alignment with the study objectives, the population comprised female educators working in higher educational institutions across West Bengal, including colleges and universities offering undergraduate and postgraduate programmes. As the higher education sector in the state includes government/government-aided and private institutions, respondents from all categories were included to ensure representativeness.

A multi-stage sampling technique was employed to account for geographical diversity. In the first stage, 6 out of 23 districts were selected through random sampling namely South 24 Parganas, Kolkata, Darjeeling, Paschim Burdwan, Paschim Medinipur and Nadia. In the second stage, 40 institutions were identified from these districts and female educators were approached through institutional visits for data collection.

After data screening and cleaning, 218 valid responses were retained for analysis. The respondents' profile is presented in Table 1.

Table 1: Profile of the Respondents'

Demographic Variable	Category	Frequency (N = 218)	Percentage (%)
Age Group	25 - 40 years	141	64.68
	41 - 50 years	57	26.15
	Above 50 years	20	9.17
Marital Status	Married	148	67.89
	Unmarried	70	32.11
Type of Institution	Government / Government-aided	116	53.21
	Private	102	46.79
Experience (Years)	0 - 6 years	76	34.86
	7 - 14 years	72	33.03
	Above 14 years	70	32.11

Source: Primary Data

4.4 Variables Descriptions

The study incorporated eight major constructs namely, Professional Growth and Development, Reward and Recognition, Institutional Environment and Culture, Work–Life Balance, Workplace Spirituality, Satisfaction, Engagement and Performance. Each construct was measured using multiple items adapted from previously validated scales. In addition, multi-group analysis (MGA) was conducted to examine structural differences based on marital status and type of institution. The details of all constructs are presented in Table 2.

Table 2: Description of the Variables

Type of Construct	Construct	Abbreviation	Source(s)
Dependent	Performance	PER	Heng et al. (2020); Lee (2014)
	Satisfaction	SAT	Islam & Ahmed (2018); Zaimoğlu & Dağtaş (2025)
Independent	Professional Growth and Development	DEV	Skaalvik & Skaalvik (2023); Al-Husseini et al. (2021)
	Reward and Recognition	REW	Mabaso (2019); Zhau & Ma (2022)
	Institutional Environment and Culture	ENV	Addimando (2019); Dewangan & Goswami (2025)
	Work-life Balance	WLB	McDonald & Hatcher (2023); Effendi et al. (2025)
	Workplace Spirituality	WSP	Demir & Çobanoğlu (2023); Belwalker et al. (2016)
Mediating	Engagement	ENG	Perera et al. (2018); Butakor et al. (2021)
Moderating	Marital Status		Latif et al. (2023)
	Type of Institution		Adinew (2024); Alkhodary (2023)

Source: Compiled by the Researcher from Literature Review

4.5 Technique of Data Analysis

The collected data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) with the SmartPLS software. PLS-SEM was found appropriate due to its suitability for predictiveness for research models, complex structural relationships and mediation as well as multi-group analysis with relatively moderate sample sizes.

5. Analysis and Findings of the Study

5.1 Reliability and Validity of the Research Instrument

The measurement model was assessed for reliability and convergent validity prior to structural analysis. As shown in Table 3, Cronbach's alpha values range from 0.704 to 0.853 and composite reliability (CR) values range from 0.808 to 0.910, exceeding the recommended threshold of 0.70, thereby confirming internal consistency. Convergent validity was evaluated using average variance extracted (AVE). All AVE values range between 0.551 and 0.772, surpassing the minimum criterion of 0.50 (Fornell & Larcker, 1981). These results indicate that the constructs demonstrate satisfactory reliability and convergent validity, supporting the adequacy of the measurement model.

Table 3: Composite Reliability and Convergent Validity Results

	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
DEV	0.704	0.808	0.585
ENV	0.853	0.910	0.772
REW	0.819	0.880	0.649
WLB	0.766	0.864	0.680
WSP	0.837	0.883	0.603
SAT	0.727	0.846	0.655
ENG	0.735	0.850	0.654
PER	0.729	0.830	0.551

Source: Computed by the Researcher with the help of SmartPLS

Discriminant validity was assessed using the Heterotrait–Monotrait (HTMT) ratios. As presented in Table 4, all HTMT values range between 0.463 and 0.883. Since all values are below the recommended threshold of 0.90 (Henseler et al., 2015), discriminant validity is confirmed. These findings indicate that the constructs are empirically distinct from one another, thereby supporting the adequacy of the measurement model.

Table 4: Discriminant Validity Results using HTMT Ratio

	DEV	ENG	ENV	PER	REW	SAT	WLB	WSP
DEV								
ENG	0.673							
ENV	0.760	0.674						
PER	0.718	0.869	0.611					
REW	0.657	0.706	0.739	0.474				
SAT	0.748	0.850	0.795	0.883	0.527			
WLB	0.589	0.877	0.563	0.803	0.463	0.789		
WSP	0.662	0.832	0.485	0.643	0.481	0.708	0.621	

Source: Computed by the Researcher with the help of SmartPLS

Discriminant validity was further examined using the Fornell–Larcker criterion. As shown in Table 5, the square root of the AVE for each construct (diagonal values) is higher than its corresponding inter-construct correlations. This indicates that each construct shares more variance with its own indicators than with other constructs, thereby satisfying the Fornell–Larcker criterion for discriminant validity and confirms that the measurement model demonstrates adequate discriminant validity.

Table 5: Discriminant Validity Results using Fornell-Larker Criteria

	DEV	ENG	ENV	PER	REW	SAT	WLB	WSP

DEV	0.765							
ENG	0.486	0.809						
ENV	0.572	0.534	0.879					
PER	0.520	0.656	0.494	0.742				
REW	0.492	0.534	0.635	0.377	0.805			
SAT	0.541	0.646	0.647	0.662	0.444	0.809		
WLB	0.430	0.636	0.457	0.643	0.368	0.615	0.825	
WSP	0.525	0.658	0.438	0.509	0.412	0.558	0.493	0.777

Source: Computed by the Researcher with the help of SmartPLS

5.2 Analysis of Collinearity

Common method bias (CMB) can occur in survey-based research when data is collected using a single instrument, which could inflate connections between variables and compromise the validity of the results (Memon et al., 2023). The variance inflation factor (VIF) approach was employed to assess the likelihood of CMB because this study only used one questionnaire. Multicollinearity, which occurs when predictor variables have a high degree of correlation, is evaluated by VIF values (Kock, 2015). Values for the inner and outer VIFs were determined and the results are illustrated in Tables 6 for inner model and Table 7 for outer model. The results confirmed that the model was free of multicollinearity and common method bias because all VIF values were less than 5 (Bhutta et al., 2019).

Table 6: Result of Collinearity Statistic (VIF) of the Inner Model

	VIF
DEV -> SAT	1.780
ENV -> SAT	2.071
REW -> SAT	1.778
WLB -> SAT	1.479
WSP -> SAT	1.610

SAT -> ENG	1.000
ENG -> PER	1.718
SAT -> PER	1.718

Source: Computed by the Researcher with the help of SmartPLS

Table 7: Result of Collinearity Statistic (VIF) of the Outer Model

	VIF		VIF		VIF		VIF
DEV1	1.241	REW2	3.008	WSP2	1.847	ENG1	2.027
DEV2	1.314	REW3	1.874	WSP3	1.654	ENG2	2.063
DEV3	1.281	REW4	1.513	WSP4	2.300	ENG5	1.191
ENV1	2.095	WLB1	1.655	WSP5	2.306	PER2	1.253
ENV2	2.256	WLB2	1.552	SAT1	2.277	PER3	1.508
ENV3	1.987	WLB3	1.500	SAT2	2.097	PER4	1.490
REW1	2.027	WSP1	1.662	SAT4	1.186	PER5	1.406

Source: Computed by the Researcher with the help of SmartPLS

5.3 Hypothesis Testing

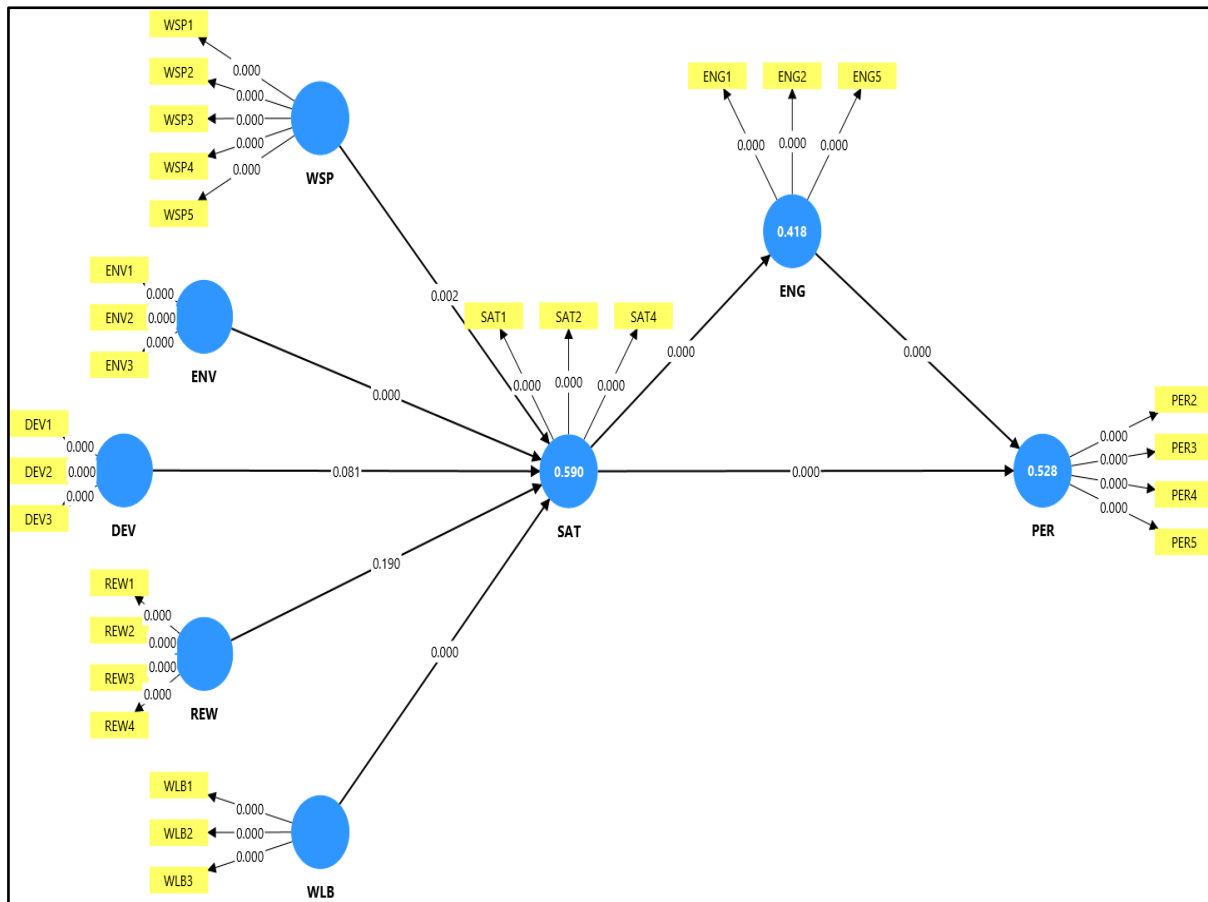
The results of the path analysis, which are shown in Table 8 and Figure 2, convey a clear picture of the directional connections between the components of the study. The results show that, among the different institutional elements affecting teachers' satisfaction, some had a greater impact on the participating respondents than others.

Table 8: Path Analysis Results

Hypothesis		Paths	Path Coefficient	t-value	p values	Remarks
H _{1b1}		DEV -> SAT	0.105	1.398	0.081*	Accepted
H _{1b2}		ENV -> SAT	0.390	5.248	0.000***	Accepted
H _{1b3}		REW -> SAT	-0.052	0.878	0.190	Rejected
H _{1b4}		WLB -> SAT	0.313	5.028	0.000***	Accepted
H _{1b5}		WSP -> SAT	0.200	2.884	0.002***	Accepted
H _{1c}	H _{1c1}	SAT -> ENG	0.646	15.136	0.000***	Accepted
	H _{1c2}	ENG -> PER	0.390	5.340	0.000***	Accepted
H _{1a}		SAT -> PER	0.410	6.130	0.000***	Accepted
Note: *** Significant at 1%, * Significant at 10%						

Source: Computed by the Researcher with the help of SmartPLS

Figure 2: Graphical Representation of the Path Analysis Results



Source: Computed by the Researcher with the help of SmartPLS

Among the determinants of job satisfaction, Institutional Environment and Culture demonstrates the strongest positive effect ($\beta = 0.390$, $t = 5.248$, $p < 0.01$) for the respondent educators, highlighting the critical role of supportive institutional policies and inclusive work environments. Work–Life Balance also shows a significant positive influence ($\beta = 0.313$, $t = 5.028$, $p < 0.01$), indicating that flexible and balanced work arrangements substantially enhance satisfaction for the respondents. Workplace Spirituality exerts a moderate yet significant effect ($\beta = 0.200$, $t = 2.884$, $p < 0.01$), suggesting that meaningful work and value alignment contribute to professional fulfilment. Professional Growth and Development has a marginally significant impact ($\beta = 0.105$, $t = 1.398$, $p < 0.10$), implying a relatively weaker but notable contribution. In contrast, Reward and Recognition does not significantly influence satisfaction ($\beta = -0.052$, $t = 0.878$, $p > 0.05$), leading to the rejection of H_{1b3} .

Job satisfaction significantly predicts employee engagement ($\beta = 0.646$, $t = 15.136$, $p < 0.01$), indicating a strong relationship. Both engagement ($\beta = 0.390$, $t = 5.340$, $p < 0.01$) and satisfaction ($\beta = 0.410$, $t = 6.130$, $p < 0.01$) significantly influence performance. The significance of both direct and indirect paths suggests partial mediation, where engagement complements the effect of satisfaction on performance. Hence, the results emphasize that institutional and psychological factors are more influential than extrinsic rewards in enhancing performance among female educators.

The explanatory power of the structural model was assessed using the coefficient of determination (R^2). This can be found in the given figure. As shown in Figure 2, the model explains 59.0% of the variance in Job Satisfaction, 41.8% of the variance in Employee Engagement and 52.8% of the variance in Performance. According to established benchmarks by Hair et al. (2021), these values indicate moderate to substantial explanatory power, suggesting that the proposed empowerment framework provides strong capacity to explain satisfaction and performance outcomes.

5.4 Predictive Power of the Model

The predictive relevance of the model was assessed using $Q^2_{predict}$. The results are presented in Table 9 below.

Table 9: Predictive Power Results

	$Q^2_{predict}$
SAT	0.553
ENG	0.474
PER	0.432

Source: Computed by the Researcher with the help of SmartPLS

As shown in Table 9, all endogenous constructs exhibit substantial predictive power, with $Q^2_{predict}$ values of 0.553 for Satisfaction, 0.474 for Engagement and 0.432 for Performance. Since all values exceed zero and are well above

the benchmark of 0.35, the model demonstrates strong predictive capability (Hair et al., 2021).

6. Multi-group Analysis (MGA)

To examine whether the structural relationships differ across contextual and demographic categories, multi-group analysis (MGA) was conducted for institutional type and marital status. Prior measurement invariance was assessed using the MICOM procedure, permitting meaningful group comparisons.

6.1 Type of Institution Wise

The MGA results for institutional type (Government/Government-Aided vs. Private) are presented in Table 10.

Table 10: MGA Results for Type of Institutions

	Path Co-efficient (Govt./Govt.-Aided)	Path Co-efficient (Pvt.)	t value (Govt./Govt.-Aided)	t value (Pvt.)	p value (Govt./Govt.-Aided)	p value (Pvt.)	Invariant
DEV -> SAT	0.146	-0.114	1.738	1.066	0.041**	0.143	No
ENV -> SAT	0.426	0.225	5.441	2.026	0.000***	0.021**	Yes
REW -> SAT	-0.155	0.305	2.394	2.630	0.008***	0.004***	Yes
WLB -> SAT	0.396	0.206	6.092	2.108	0.000***	0.018**	Yes
WSP -> SAT	0.159	0.309	2.074	2.628	0.019**	0.004***	Yes
SAT -> ENG	0.544	0.804	8.454	24.852	0.000***	0.000***	Yes
ENG -> PER	0.388	0.537	4.447	4.472	0.000***	0.000***	Yes
SAT -> PER	0.447	0.228	5.195	1.868	0.000***	0.031**	Yes
Note: *** Significant at 1%, ** Significant at 5%							

Source: Computed by the Researcher with the help of SmartPLS

From the results it is evident that the path from Professional Growth and Development to Satisfaction shows an interesting as well as notable variation across groups. While the relationship is positive and significant in government/government-aided institutions ($\beta = 0.146$, $p < 0.05$), it is negative and insignificant in private institutions ($\beta = -0.114$, $p > 0.05$). This indicates that professional development opportunities contribute more meaningfully to satisfaction in government/government-aided institutions for the set of respondents considered for the study. As per the path from Institutional Environment and Culture, the relationship is significant in both groups, but stronger in government/government-aided institutions ($\beta = 0.426$) compared to private institutions ($\beta = 0.225$). Similarly, for Work-life Balance to Satisfaction, the path demonstrates a stronger effect in government/government-aided institutions ($\beta = 0.396$) than in private institutions ($\beta = 0.206$). Interestingly, the path from Reward and Recognition to Satisfaction displays contrasting effects. It is negative and significant in government/government-aided institutions ($\beta = -0.155$, $p < 0.01$), but positive and significant in private institutions ($\beta = 0.305$, $p < 0.01$). This suggests that reward mechanisms operate differently across institutional structures. For Workplace Spirituality, the construct significantly influences satisfaction in both institutional types. However, the relationship is stronger in private institutions ($\beta = 0.309$) than in government/government-aided institutions ($\beta = 0.159$).

The relationship Satisfaction and Engagement is strong and significant in both groups, but considerably stronger in private institutions ($\beta = 0.804$) than in government/government-aided institutions ($\beta = 0.544$). Similarly, the relationship between Engagement and Performance remains significant across both institutional types, confirming structural stability of the engagement-performance linkage. Finally, Job Satisfaction directly influences performance in both groups, with a stronger effect in government/government-aided institutions ($\beta = 0.447$) than in private institutions ($\beta = 0.228$).

6.2 Marital Status Wise

The MGA results for Marital Status (Single vs. Married) are presented in Table 11.

Table 11: MGA Results for Marital Status

	Path Co-efficient (Married)	Path Co-efficient (Single)	t value (Married)	t value (Single)	p value (Married)	p value (Single)	Invariant
DEV -> SAT	0.087	0.102	0.882	0.820	0.189	0.206	Yes
ENV -> SAT	0.286	0.462	3.275	3.824	0.001***	0.000***	Yes
REW -> SAT	0.059	-0.092	0.792	0.752	0.214	0.220	Yes
WLB -> SAT	0.267	0.377	3.069	3.002	0.001***	0.001***	Yes
WSP -> SAT	0.265	0.122	2.912	1.086	0.002***	0.139	No
SAT -> ENG	0.719	0.522	16.041	5.299	0.000***	0.000***	Yes
ENG -> PER	0.512	0.315	6.028	3.193	0.000***	0.001***	Yes
SAT -> PER	0.224	0.611	2.527	7.726	0.006***	0.000***	Yes
Note: *** Significant at 1%							

Source: Computed by the Researcher with the help of SmartPLS

From the outcomes, it is evident that Professional Growth and Development as well as Reward and Recognition do not significantly influence Satisfaction across either group ($p > 0.1$), suggesting that these empowerment dimensions operate similarly irrespective of marital category for the respondents considered. Institutional Environment significantly enhances satisfaction for both married ($\beta = 0.286$) and single respondent educators ($\beta = 0.462$), with a stronger impact among single faculty members. This may reflect greater institutional dependence among early-career or independently positioned respondent educators. Work-Life Balance significantly influences satisfaction across both groups ($p < 0.01$), confirming its universal importance for female faculty regardless of marital status. Workplace Spirituality, however, is significant only among married respondent educators ($\beta = 0.265$), indicating that value alignment and sense of meaning may be more closely tied to satisfaction among those balancing professional and family roles. Satisfaction strongly predicts Engagement in both groups, particularly among married educators ($\beta = 0.719$ & 0.522). Engagement, in turn, enhances Performance consistently across groups ($p < 0.01$). A notable finding appears in the Satisfaction - Performance relationship, which is substantially stronger among single respondents ($\beta = 0.611$) compared to married respondents ($\beta = 0.224$). This suggests that satisfaction may translate more directly into performance outcomes among single faculty, whereas for married educators, engagement may serve as a more important mediating mechanism.

7. Discussion

This study examined the structural relationships between institutional empowerment factors, job satisfaction, employee engagement and performance among female educators in higher education institutions. The findings provide strong empirical support for the argument that institutional and psychological resources significantly shape professional outcomes. Institutional Environment and Culture emerged as the strongest predictor of job satisfaction. This finding is consistent with Skaalvik and Skaalvik (2011), who demonstrated that supportive institutional contexts significantly enhance teacher satisfaction and reduce turnover intentions. Professional

Growth and Development demonstrated a meaningful effect across institutional categories. This finding is consistent with Joo and Lim (2009), who found that career development support significantly enhances job satisfaction and organizational commitment. Academic environments are inherently growth-oriented, therefore, access to research opportunities, training programs and promotion pathways likely strengthens professional identity and satisfaction. The results suggest that developmental empowerment remains central to sustaining faculty motivation. Work-Life Balance significantly enhanced job satisfaction, aligning with the cross-cultural evidence provided by Haar et al. (2014), who found that work-life balance positively influences job satisfaction and psychological well-being across occupational settings. For female educators, who frequently manage multiple professional and domestic responsibilities, supportive work-life arrangements likely reduce role strain and foster emotional stability, thereby improving satisfaction levels. Workplace Spirituality also demonstrated a positive relationship with job satisfaction. This result supports Milliman et al. (2003), who found that meaningful work and a sense of community contribute significantly to positive work attitudes. In academic environments, where intellectual purpose and social contribution are central, perceptions of meaningful engagement appear to strengthen intrinsic satisfaction. Interestingly, Reward and Recognition did not consistently exert a positive influence on job satisfaction. This finding diverges from purely transactional motivational assumptions but aligns with Deci et al. (1999), who found that extrinsic rewards do not always enhance intrinsic motivation and may, in some contexts, weaken it. Further, Judge et al. (2001) reported that the job satisfaction-performance relationship is multifaceted and not exclusively driven by financial incentives. The present study also suggests, that in higher education settings, structural empowerment and meaningful professional engagement may outweigh monetary rewards in shaping satisfaction. The relationship between Job Satisfaction and Employee Engagement was strong and statistically significant. This finding is consistent with Saks (2006), who identified job satisfaction as a key antecedent of engagement. Engagement, in turn, significantly predicted performance, supporting the meta-analytic

evidence of Christian et al. (2011), who confirmed that engaged employees demonstrate superior task and contextual performance. The observed partial mediation indicates that satisfaction enhances performance both directly and indirectly through behavioural activation mechanisms reflected in engagement.

The multi-group analysis further revealed that institutional type moderates several empowerment relationships, while marital status exhibits comparatively limited structural variation. This pattern aligns with Hakanen et al. (2006), who demonstrated that contextual work resources within educational institutions significantly shape engagement and burnout outcomes. The relative stability of the satisfaction–engagement–performance pathway across demographic categories suggests that while institutional context influences empowerment dynamics, the core motivational mechanism remains robust.

Thus, the study extends the empirical understanding of satisfaction-driven engagement as a strategic mechanism for enhancing institutional performance. It situates faculty well-being not as an isolated psychological outcome, but as a strategic institutional asset within higher education systems.

8. Conclusion

The present study contributes to the growing discourse on gender equity in higher education by empirically demonstrating that the empowerment of female educators is a critical driver for sustainable education and inclusive growth. Using a PLS-SEM approach, the findings reveal that institutional support and psychological empowerment are not merely determinants of job satisfaction, but foundational elements that enable female educators to act as catalysts for the vision of Viksit Bharat 2047.

Beyond identifying statistically significant relationships, the study underscores a broader reality which says that the path to a developed India relies on transforming higher education institutions into inclusive ecosystems where female educators are supported, not just employed. The differential patterns observed across demographics in West Bengal indicate that policy

interventions must be context-sensitive to effectively bridge the gender gap in academic leadership. Thus, this research provides an evidence-based roadmap for policymakers, asserting that empowering the female academic workforce is not just a social goal, but a strategic prerequisite for achieving SDG 4 (Quality Education), SDG 8 (Decent Work) and national resilience in an evolving global knowledge economy.

9. Policy Prescription

The results underscore the need for gender-sensitive and inclusive institutional reforms that particularly support women educators through transparent promotion systems, research opportunities, flexible work arrangements and supportive academic ecosystems. Such measures contribute directly to women's empowerment by enabling sustained career progression and leadership participation within the academic framework. Aligning institutional development with sustainability principles, policymakers should treat faculty well-being as a strategic resource for long-term educational quality and human capital formation. In the broader vision of Viksit Bharat 2047, strengthening higher education institutions through equal, supportive and development-oriented workplace policies will be instrumental in building a resilient knowledge economy driven by empowered and productive academic professionals.

10. Limitation of the Study

The study is limited by its cross-sectional design, which constrains causal interpretation. The reliance on self-reported survey responses may introduce perceptual bias, even though statistical checks for common method bias were conducted. The geographical concentration within West Bengal restricts generalizability to other regions. Additionally, broader institutional variables such as funding structure, leadership models and regulatory frameworks were not included in the model.

11. Future Scope of Research

Future research may adopt longitudinal designs to examine causal dynamics over time. Comparative inter-state or national-level studies would enhance

generalizability. Incorporating institutional-level indicators and adopting multi-level modelling approaches may provide deeper insights into contextual variations. Further in-depth exploration of moderation and mediation frameworks could refine understanding of how satisfaction and engagement mechanisms operate across diverse institutional settings.

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