

Job Satisfaction among Outsourced Workers in Bihar's Technical Institutions: Challenges and Interventions

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Abstract

Job satisfaction among outsourced workers remains understudied in developing regions such as Bihar, India, where technical institutions increasingly rely on outsourced labour for essential services like maintenance and administrative support, often prioritizing cost savings over employee welfare. This study aimed to examine job satisfaction levels and associated challenges among outsourced workers in Bihar's technical institutions and to identify key interventions. A descriptive-correlation design was used with a sample of 126 outsourced workers from Bihar's technical institutions. Data were collected using the adapted Minnesota Satisfaction Questionnaire (MSQ) with a five-point Likert scale. Descriptive statistics revealed moderate satisfaction for salary, leave, and work-life balance (mean $M = 1.93$); dissatisfaction with working relationships with permanent staff (mean $M = 1.28$); and dissatisfaction with decision-making, skill training, and performance evaluation (mean $M = 1.20$). Key challenges included inadequate salary (Rank 1), lack of leave and overtime pay (Rank 2), and absence of night differential pay (Rank 3). The findings interpreted through Herzberg's Two-Factor Theory, Social Exchange Theory, and the Job Demands-Resources (JD-R) model, highlight the need for enforcement of labor laws, targeted up skilling, participatory mechanisms, and relationship-building initiatives to improve job satisfaction and retention among outsourced workers. Implementing such measures could transform precarious roles into sustainable careers, advancing social equity and labor reforms.

Keywords: Bihar, Job Satisfaction, Labor Policy, Outsourced Workers, Technical Institutions, Work Environment.

Introduction

Job satisfaction significantly influences workers' well-being, impacting economic outcomes such as turnover, job changes, and absenteeism (1, 2). It is a multidimensional construct encompassing emotional and behavioral responses toward one's work environment and organizational context. In global contexts, temporary or outsourced employment models are increasingly prevalent, particularly in Europe, where civil law contracts often bypass labor protections, creating unstable work environments that heighten health risks and job insecurity among non-permanent staff (3, 4). In India, outsourcing reduces organizational costs but raises concern about worker welfare, especially in technical sectors with high demand for skilled labor, and it aligns with these global trends in contingent work (5, 6). This cost-driven approach, while enhancing operational agility, perpetuates wage gaps and limits access to statutory protections, mirroring international patterns where contingent practices foster precariousness despite regional variations in regulatory safeguards, thereby setting the stage for

understanding India's outsourcing landscape, in which such cost-driven strategies often compromise worker security (7). Moreover, a positive work environment enhances motivation and productivity, whereas a poor one reduces morale and performance (8).

In developing countries, hiring outsourced workers is a common strategy to minimize costs like provident fund contributions and long-term liabilities (9, 10). In the Indian context, this manifests as widespread evasion of retirement benefits, leaving a significant portion of the workforce without financial safeguards. In India, outsourced workers, employed through third-party agencies without structured wage systems, are prevalent across industries (11). This agency-mediated model, while promoting flexibility, often breeds cynicism and disengagement due to opaque compensation structures and limited loyalty ties. This practice enhances flexibility but often compromises worker security and benefits (12, 13). Particularly in knowledge-intensive fields, temporary roles exacerbate work-family balances

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and exclusion from core team dynamics, echoing historical patterns of institutionalized inequities in labor brokerage systems. In Bihar, a state with a developing economy and growing technical institutions, outsourcing reflects economic constraints and the need for skilled labor, yet it raises critical questions about job satisfaction and equitable treatment (14). Amid rapid sectoral expansion and informal dominance, these dynamics suppress collective voice and bargaining power, intensifying disparities in access to fair wages and development opportunities. These practices in Bihar underscore the urgency of examining job satisfaction to inform equitable labor strategies. Labor laws governing outsourced employment vary globally; for instance, Germany limits short-term contracts to two years, while India mandates no fixed contract period, often leaving workers vulnerable (15, 16). Globally, nonstandard arrangements affect a substantial workforce share, with deregulation amplifying informality and enforcement gaps that favor temporary over secure employment.

Against this backdrop, this study investigates job satisfaction among outsourced workers in Bihar's technical institutions, focusing on factors like compensation, work-life balance, and interpersonal relations (17). In collaborative technical environments, such factors are pivotal, as relational exclusions in contract roles diminish satisfaction and innovation contributions. To deepen this inquiry, theoretical frameworks guide this exploration, providing insights into the dynamics of precarious employment (18). Herzberg's Two-Factor Theory distinguishes motivators (e.g., achievement) from hygiene factors (e.g., salary), where inadequate hygiene causes dissatisfaction (19). This theory explains how inadequate hygiene factors in outsourced settings generate dissatisfaction. Social Exchange Theory posits that supportive work environments foster commitment and satisfaction (20). By emphasizing reciprocal fairness, it explains how perceived support in exchanges curbs turnover and builds organizational allegiance, even in hierarchical structures. The JD-R model suggests high job demands cause stress, while resources like supportive colleagues promote satisfaction (21, 22). Validating burnout pathways and crafting strategies, this model highlights how resource-demand imbalances in temporary work intensify

exhaustion but can be mitigated through proactive enhancements. Additionally, a supportive work environment, including clear communication and access to resources, is critical for reducing stress among outsourced workers as evidenced by creativity and motivation frameworks (23). In outsourced employment arrangements, job satisfaction is also shaped by interactions with vendor or agency representatives who act as intermediaries between workers and institutions. These interactions influence perceptions of fairness, grievance redressal, communication clarity, and access to benefits, all of which are central to Social Exchange Theory. Prior studies suggest that strained or opaque relationships with vendors can amplify dissatisfaction by weakening trust and limiting workers' sense of organizational support. Although the present study primarily examines satisfaction within institutional workplaces, interactions with vendors form an important contextual layer influencing outsourced workers' experiences and merit consideration when interpreting relational dynamics and policy implications.

The theoretical frameworks collectively inform the study's analysis of how hygiene factors, exchange dynamics, and resource imbalances affect outsourced workers, addressing gaps in understanding workplace influences and contributing to both organizational and sociological outcomes (24, 25). Drawing on these lenses, the study is structured around targeted research objectives: examining job satisfaction levels among outsourced workers across key workplace dimensions, identifies the primary challenges influencing job satisfaction, and explores potential interventions that may effectively address them.

Methodology

To fulfil these research objectives, this section outlines the research methodology employed in the current study.

Research Design

A descriptive-correlational design was adopted to analyze job satisfaction levels and examine relationships between workplace factors such as salary, leave, work-life balance, working relationships, decision making, skill training, performance evaluation and demographic variables among outsourced workers (26).

Study Context and Data Collection

The study was conducted at technical institutions in Bihar, India, focusing on outsourced workers. A total of 126 respondents participated in the survey. Participants' ages ranged from 22 to 26 years and above, with varied gender and marital status, as detailed in the results section. Participation was voluntary, and respondents were assured of confidentiality.

Sampling Approach

Convenience sampling was employed to select participants, targeting outsourced workers (27). This non-probability method was selected due to practical constraints, such as the transient nature of outsourced roles and limited institutional access to full rosters, though it may introduce selection bias.

Instrumentation

Data were collected using the Minnesota Satisfaction Questionnaire (MSQ), validated through a pilot test for clarity and reliability (Cronbach's alpha $\alpha = 0.85$) (28). The questionnaire utilized a five-point Likert scale (1 = Not Satisfied, 2 = Moderately Satisfied, 3 = Satisfied, 4 = Highly Satisfied and 5 = Fully Satisfied).

Data Analysis

The data were analysed using Statistical Package for the Social Sciences (SPSS) Statistics (29).

Table 1: Categorization of Respondents by Age

Age	Frequency	Percentage
22	6	4.8
23	12	9.5
24	46	36.5
25	28	22.2
26 and above	34	27.0
Total	126	100.0

Age: Table 1 presents the age distribution of 126 respondents. The data indicates that 36.5% are 24 years old, making them the largest group, followed

by 27% who are 26 years and above. Additionally, 22.2% are 25 years old, 9.5% are 23 years old, and 4.8% are 22 years old.

Results

This section presents the objective findings from the study, organized into respondent demographics in Tables 1 to 3 and job satisfaction levels detailed in Tables 4 to 6, challenges faced by outsourced workers listed in Table 7, and proposed interventions summarized in Table 8. Interpretations are reserved for the Discussion section.

Respondent Profile

Respondents were classified based on age, gender, and marital status as shown in Tables 1 to 3.

Table 2: Profile of Respondents by Gender

Gender	Frequency	Percentage
Male	90	71
Female	36	29
Total	126	100

Gender: Table 2 outlines the gender distribution of respondents. The data reveals that 71% of the

respondents, or 90 individuals, are male, while 29%, or 36 respondents, are female.

Table 3: Profile of Respondents by Marital Status

Status	Frequency	Percentage
Married	83	66
Single	43	34
Total	126	100

Marital Status: Table 3 illustrates the marital status of respondents, showing that 66% (83 out of 126) are married, while 34% (43 out of 126) are single.

Job Satisfaction Levels

The MSQ results for outsourced workers in Bihar's technical institutions reveal varied job satisfaction levels. Salary, leave, and work-life balance are presented in Table 4 showing an overall mean of

1.93, indicating moderate satisfaction. Working relationships with permanent staff are evaluated in Table 5 reflecting dissatisfaction with an overall mean of 1.28. Furthermore, Table 6 highlights dissatisfaction across decision-making, skill training, and performance evaluation with an overall mean of 1.2. The Grand Overall Weighted Mean (average of the three sub-category overall weighted means reported in Tables 4-6) is 1.47, indicating systematic dissatisfaction.

Table 4: Job Satisfaction Levels (Salary, Leave, Work-Life Balance)

Parameters	Weighted Mean	Interpretation
Salary alignment with labor law rules and regulations	2.49	MS
Overtime pay for work performed beyond regular hours	1.60	MS
Salary matching job description	2.21	MS
Timeliness of salary payments	2.49	MS
Provision of night differential pay	1.35	NS
Work-life balance	2.32	MS
Availability of leaves	1.07	NS
Overall Weighted Mean	1.93	MS
Legend		
4.50-5.00	FS	Fully Satisfied
3.50-4.49	HS	Highly Satisfied
2.50-3.49	S	Satisfied
1.50-2.49	MS	Moderately Satisfied
1.00-1.49	NS	Not Satisfied

Salary, Leaves, and Work-Life Balance: Table 4 reveals an overall weighted mean of 1.93, indicating moderately satisfied (MS) levels of job satisfaction. Respondents reported the lowest satisfaction with leave availability ($M = 1.07$, Not Satisfied) and night differential pay ($M = 1.35$, Not Satisfied), which refers to additional compensation for work performed during night time hours,

typically between 10 PM and 6 AM, highlighting significant concerns in these areas. In contrast, moderate satisfaction was observed for salary alignment with labor laws ($M = 2.49$, MS), timeliness of salary payments ($M = 2.49$, MS), work-life balance ($M = 2.32$, MS), salary matching job description ($M = 2.21$, MS), and overtime pay ($M = 1.60$, MS).

Table 5: Job Satisfaction Levels (Working Relationships with Permanent Staff)

Parameters	Weighted Mean	Interpretation
Level of cooperation received in the workplace	1.29	NS
Presence of trust and confidence with permanent staff	1.23	NS
Adequate support from permanent staff	1.60	MS
Effective flow of work-related information	1.00	NS
Overall Weighted Mean	1.28	NS
Legend		
4.50-5.00	FS	Fully Satisfied
3.50-4.49	HS	Highly Satisfied
2.50-3.49	S	Satisfied
1.50-2.49	MS	Moderately Satisfied
1.00-1.49	NS	Not Satisfied

Working Relationships with Permanent Staff: Table 5 shows an overall weighted mean of 1.28 (NS) for satisfaction with relationships with permanent staff. Respondents reported the lowest satisfaction with the effective flow of work-related

information ($M = 1.00$, NS), followed by trust and confidence ($M = 1.23$, NS) and cooperation ($M = 1.29$, NS). Support from permanent staff received moderate satisfaction ($M = 1.60$, MS).

Table 6: Job Satisfaction (Decision Making, Skill Training and Performance Evaluation)

Parameters	Weighted Mean	Interpretation
Opportunities for performance evaluation for outsourced workers	1.2	NS
Access to training for skill enhancement for outsourced workers	1.3	NS
Opportunities to learn new technologies for outsourced workers	1.1	NS
Flexibility in work opportunities for outsourced workers	1.3	NS
Overall Weighted Mean	1.2	NS
Legend		
4.50-5.00	FS	Fully Satisfied
3.50-4.49	HS	Highly Satisfied
2.50-3.49	S	Satisfied
1.50-2.49	MS	Moderately Satisfied
1.00-1.49	NS	Not Satisfied

Decision Making, Skill Training and Performance Evaluation: Table 6 shows an overall weighted mean of 1.2 (NS) for satisfaction in decision-making, skill training, and performance evaluation. All parameters—opportunities for performance evaluation ($M = 1.2$, NS), access to training ($M = 1.3$, NS), opportunities to learn new technologies ($M = 1.1$, NS), and flexibility in work opportunities ($M = 1.3$, NS) fall in the not satisfied range.

Challenges Faced by Outsourced Workers

Outsourced workers face multiple structural and relational barriers that undermine their job satisfaction and performance. To capture these issues systematically, respondents were asked to rank the most pressing challenges they face in their work environment. Rankings were derived from aggregated Likert-scale scores, with lower sums indicating higher priority.

Table 7: Challenges Faced by Outsourced Workers in Relation to Job Satisfaction

Challenges	Sum of Rank	Rank
Inadequate salary for outsourced workers	333	1
Lack of leaves and overtime pay for work beyond regular hours	476	2
No night differential pay provided	524	3
Poor working relationship with permanent staff	1002	4
Lack of skills training relevant to job specifications	1129	5
Limited decision-making opportunities to enhance work efficiency and quality	1042	6
No opportunities to learn new technologies	1184	7
Lack of trust and confidence with permanent staff	1232	8

The challenges faced by outsourced workers are outlined by Table 7, with rankings based on job satisfaction survey responses. The primary challenge is inadequate salary (Rank 1, Sum = 333), followed by lack of leaves and overtime pay (Rank 2, Sum = 476), absence of night differential pay (Rank 3, Sum = 524), poor working relationships with permanent staff (Rank 4, Sum = 1002), lack of skills training (Rank 5, Sum = 1129), limited decision-making opportunities (Rank 6, Sum = 1042), no opportunities to learn new technologies

(Rank 7, Sum = 1184), and lack of trust and confidence with permanent staff (Rank 8, Sum = 1232).

Proposed Interventions to Address Challenges Faced by Outsourced Workers

The challenges encountered by outsourced workers are addressed in Table 8, with proposed interventions and specific actions tailored to each issue.

Table 8: Proposed Solutions to Mitigate Challenges Faced by Outsourced Workers

Challenges	Objectives	Activities	Responsible Department	Time Frame	Expected Outcome
Inadequate salary for outsourced workers.	Enable workers to meet basic needs and manage rising living costs.	Provide financial literacy training by certified trainers, advocate for Minimum Wage Act compliance.	Ministry of Labour and Employment, Human Resource Department (HRD)	Half-Yearly	Improved financial stability, compliance with labor laws.
Lack of leaves and overtime pay for work beyond regular hours.	Ensure compliance with leave entitlements and overtime compensation.	Conduct awareness sessions on leave policies and overtime claims.	Ministry of Labour and Employment, HRD	Annually	Worker's access to entitled leaves and payments, reducing burnout.
No night differential pay provided.	Advocate for hazard/shift-based compensation.	Workshops on night shift rights and enforcement mechanisms.	Ministry of Labour and Employment, HRD	Half-Yearly	Improved financial equity for shift workers.
Poor working relationships with permanent staff.	Foster positive relationships between outsourced and permanent workers.	Organize team-building activities facilitated by HRD, including monthly workshops.	HRD	Annually	Creation of a trusting and collaborative work environment.
Lack of skills training relevant to job specifications.	Enhance technical skills to support worker development.	Offer job-specific training and awareness of new technologies.	HRD	Half-Yearly	Increased confidence through the acquisition of new skill sets.
Limited decision-making opportunities to enhance work efficiency and quality.	Empower workers in routine decisions.	Introduce participatory forums for input on workflows.	HRD	Annually	Higher autonomy and job efficacy.
No opportunities to learn new technologies.	Promote continuous learning.	Provide access to online modules and tech demos.	HRD, Information Technology (IT) Department	Half-Yearly	Updated skills and innovation contributions.
Lack of trust and confidence with permanent staff.	Build interpersonal trust.	Facilitate mentorship pairings and feedback sessions.	HRD	Annually	Stronger reciprocity and reduced relational stress.

These interventions aim to provide immediate relief while acknowledging the need for comprehensive strategies, involving collaboration with the Ministry of Labour and Employment, HRD, Labour Welfare Board, and provisions under the labor laws.

Discussion

Synthesizing the empirical evidence, the findings from Tables 1 to 8 highlight the impact of workplace factors on job satisfaction among outsourced workers in Bihar's technical institutions. These findings have significant implications for organizational and sociological outcomes in this developing region. Alignment with Herzberg's Two-Factor Theory is demonstrated, where dissatisfaction is driven by inadequate hygiene factors such as salary ($M = 1.35-2.49$) as shown in Table 4, and availability of leave ($M = 1.07$) also according to Table 4 (18, 19). These findings also reflect shortcomings in the enforcement of legal rights governing outsourced employment. Weak implementation of statutory provisions related to minimum wages, leave entitlements, overtime compensation, and differential pay functions as a structural hygiene deficit, intensifying dissatisfaction and job

insecurity among outsourced workers. Thus, legal rights emerge as an underlying institutional determinant shaping job satisfaction outcome, rather than functioning as a standalone workplace attribute. Similarly, dissatisfaction with working relationships ($M = 1.28$) presented in Table 5 and opportunities for skill development and decision-making ($M = 1.20$) as detailed in Table 6 support Social Exchange Theory, highlighting reciprocity deficits in hierarchical outsourcing arrangements (20, 25). The JD-R model is further corroborated, as high job demands like overtime without pay ($M = 1.60$) as seen in Table 4 coupled with limited resources such as lack of training ($M = 1.3$) shown in Table 6 contribute to workplace stress and dissatisfaction (21, 31). The non-significant correlations (Results) underscore the dominance of structural factors over demographics, consistent with prior outsourcing studies.

Beyond theoretical alignment, demographic profiles reveal nuanced influences on satisfaction. Demographic characteristics, as presented in Tables 1 to 3, play a pivotal role in shaping job satisfaction dynamics. The age distribution shown in Table 1 indicates that the majority of respondents (36.5% aged 24, 27% aged 26 and above) constitute a young workforce, suggesting

that early-career instability in outsourced roles may amplify dissatisfaction with opportunities for training ($M = 1.3$) and learning new technologies ($M = 1.1$), as shown in Table 6. Younger workers are often driven by aspirations for skill-building and long-term career progression, and the lack of such opportunities, as evidenced in Table 6, may exacerbate turnover intentions (32). The gender distribution presented in Table 2, with 71% male and 29% female respondents, aligns with broader trends in technical sectors, where females may face additional barriers, such as work-life balance conflicts ($M = 2.32$) as shown in Table 4, potentially contributing to lower satisfaction among female workers, warranting sub-group analysis in future studies (33). The predominance of married respondents (66%) as indicated in Table 3 suggests that family responsibilities heighten sensitivity to hygiene factors like salary and leave availability, as married workers are more likely to prioritize financial stability and work-life balance to meet household demands (34). In determining the overall job satisfaction score, it is important to note that the aggregated mean reflects pooled responses across genders and may mask gender-specific variations in satisfaction experiences. Given the unequal gender composition of the sample, the overall score should be interpreted as a general indicator rather than a uniform representation across male and female workers. While the present study did not conduct gender-disaggregated inferential analysis due to sample size constraints, the observed patterns suggest that gender-based differences, particularly in work-life balance and relational dimensions, merit focused examination in future research.

Turning to the core satisfaction patterns, the data expose a multifaceted dissatisfaction profile. The job satisfaction levels reported in Tables 4 to 6 reveal a complex interplay of workplace factors. Table 4 indicates moderate satisfaction ($M = 1.93$) across parameters like salary alignment with labor laws ($M = 2.49$), timeliness of salary payments ($M = 2.49$), and work-life balance ($M = 2.32$), but significant dissatisfaction is observed with leave availability ($M = 1.07$) and night differential pay ($M = 1.35$). These findings reflect systemic issues in Bihar's informal labor market, where labor norms, such as those mandated by the Minimum Wage Act (1948), are often inadequately enforced, leading to worker dissatisfaction (16). The dissatisfaction

with leave availability is particularly critical, as it may exacerbate work-life balance challenges, especially for married workers who face family obligations as shown in Table 3 (33). Table 5 highlights pervasive dissatisfaction with working relationships with permanent staff ($M = 1.28$), with the lowest satisfaction reported for the flow of work-related information ($M = 1.00$) and trust and confidence ($M = 1.23$). This relational strain aligns with Social Exchange Theory, suggesting that hierarchical divides between permanent and outsourced workers hinder mutual trust and cooperation, potentially reducing organizational cohesion (20, 25). Table 6 reveals uniform dissatisfaction ($M = 1.20$) across decision-making, skill training, and performance evaluation, with particularly low scores for opportunities to learn new technologies ($M = 1.1$). This lack of access to training and development stifles innovation and career growth, further undermining motivation and increasing turnover risks (17). The Grand Overall Weighted Mean of 1.47 across Tables 4 to 6 reinforces the mixed satisfaction levels, with hygiene and relational factors emerging as critical levers for improvement.

An important dimension underlying these relational outcomes is whether outsourced workers are treated as members of the institutions in which they work. While labor laws recognize technical institutions as principal employers responsible for statutory compliance, outsourced workers are often excluded from organizational membership in practice. Limited inclusion in decision-making, performance evaluation, and institutional communication reinforces a sense of peripheral status, despite legal accountability resting with the principal employer. This gap between legal recognition and organizational treatment is likely to intensify dissatisfaction, particularly in relational and participatory dimensions of job satisfaction.

The challenges ranked in Table 7 provide a clear hierarchy of issues faced by outsourced workers, with inadequate salary (Rank 1, Sum = 333) identified as the primary barrier. This finding is consistent with Herzberg's theory, as salary is a fundamental hygiene factor, and its inadequacy prevents workers from meeting basic needs, reflecting broader challenges in Bihar's informal labor market (19). The lack of leaves and overtime pay (Rank 2, Sum = 476) and absence of night

differential pay (Rank 3, Sum = 524) further violate labor norms, exacerbating dissatisfaction and potentially contributing to health and well-being issues (16). Poor working relationships with permanent staff (Rank 4, Sum = 1002) and lack of trust (Rank 8, Sum = 1232) highlight relational barriers that hinder effective collaboration, aligning with Social Exchange Theory's emphasis on reciprocal workplace relationships (20, 25). The lack of skills training (Rank 5, Sum = 1129) and opportunities to learn new technologies (Rank 7, Sum = 1184) reflect systemic gaps in professional development, which are particularly detrimental in technical institutions requiring up-to-date skills (17). Limited decision-making opportunities (Rank 6, Sum = 1042) further diminish workers' sense of autonomy and efficacy, contributing to stress and disengagement as per the JD-R model (21).

The proposed interventions in Table 8 are designed to address these challenges systematically. Financial literacy programs to mitigate inadequate salary align with sustainable Human Resource Management (HRM) practices by empowering workers to manage limited resources effectively (3). Training on labor laws to address the lack of overtime and night differential pay aims to enhance workers' awareness of their rights, potentially fostering advocacy for better enforcement (16). Job-specific training programs to address insufficient skill development are critical for enhancing technical competence and confidence, particularly for younger workers seeking career progression as shown in Table 1. Team-building activities to improve relationships with permanent staff are proposed to foster trust and collaboration, addressing the low satisfaction scores in Table 5 and aligning with Social Exchange Theory (20, 25). These interventions require collaboration with the Ministry of Labour and Employment, Human Resource Department, and Labour Welfare Board to ensure compliance with labor laws and sustainable outcomes. Implementation barriers, such as budget constraints, could be addressed via public-private partnerships. However, the feasibility of these interventions must be considered in the context of Bihar's economic constraints, where cost-driven outsourcing practices may limit institutional resources for implementation (5).

Implications of State and Central Labor Policies

The findings must also be interpreted in the context of labor policies framed at both the central and state levels. At the central level, legislations such as the Contract Labour (Regulation and Abolition) Act, Minimum Wage Act, and recent labor codes emphasize wage protection, social security, and regulated outsourcing. However, uneven enforcement and limited monitoring often dilute their intended impact, particularly for outsourced workers. At the state level, Bihar's labor administration faces capacity constraints that affect implementation, grievance redressal, and compliance monitoring. The persistence of low satisfaction with wages, leave entitlements, and differential pay observed in this study reflects gaps between policy intent and on-ground enforcement, highlighting the need for stronger institutional coordination between state authorities, contracting agencies, and technical institutions.

Study Limitations

The study's use of convenience sampling and a small sample size (n=126) limits generalizability and statistical power. Potential self-report bias in the MSQ responses may also skew perceptions of satisfaction, particularly for sensitive issues like salary and relationships. Future studies should include larger, stratified samples and longitudinal designs for stronger inference. A gender-disaggregated analysis could not be undertaken due to sample size imbalance, and future studies should explicitly examine gender-based variations in job satisfaction outcomes.

Conclusion

This study revealed varied satisfaction levels: an overall mean of 1.93 for salary, leave, and work-life balance as shown in Table 4, indicating moderate satisfaction; an overall mean of 1.28 for working relationships with permanent staff as detailed in Table 5, reflecting dissatisfaction; and an overall mean of 1.2 for decision-making, skill training, and performance evaluation according to Table 6, indicating dissatisfaction across all parameters. The Grand Overall Mean of 1.47 (average of the three sub-category overall weighted means reported in Tables 4–6) underscores systemic issues. Grounded in Herzberg's Two-Factor Theory, Social Exchange Theory, and the JD-R model, these findings highlight the sociological and

organizational consequences of precarious employment. Inadequate salary and relational barriers undermine motivation and institutional efficacy. By addressing these challenges through targeted, time-bound interventions and robust monitoring, institutions can foster a sustainable workforce, contributing to labor reforms and social equity in Bihar's technical education sector.

Recommendations

To improve job satisfaction among outsourced workers in Bihar's technical institutions, several evidence-based interventions are proposed based on the findings from Table 4 through Table 7 and aligning with the strategies in Table 8. Institutions must first ensure compliance with labor standards, including the Minimum Wage Act (1948), to provide fair salaries and all mandatory benefits within a six-month timeframe through regular audits. It is also recommended to implement quarterly training and skill-enhancement programs to boost employability, technical competence and confidence, addressing dissatisfaction with skill development opportunities. To foster a collaborative environment, the Human Resource Department should facilitate structured team-building activities, such as monthly interaction workshops, to improve the poor relationships between outsourced workers and permanent staff. Additionally, establishing clear annual systems for performance evaluation and recognition will enhance worker motivation and support professional growth among outsourced workers. Support should also be extended through gender-responsive mechanisms such as flexible work arrangements to improve work-life balance, particularly for female workers, and the enforcement of leave and night differential pay policies through quarterly audits. Finally, the effectiveness of these interventions should be systematically monitored through annual job satisfaction surveys, enabling institutions to assess progress and refine policies.

Collectively, these measures can foster a more inclusive, motivated, productive and sustainable outsourced workforce, contributing to labor equity and institutional effectiveness in Bihar's technical education sector. Future research could longitudinally track the impact of these interventions or compare outcomes with neighbouring states to further enhance

generalizability in light of evolving employment trends.

Abbreviations

HRD: Human Resource Department, JD-R: Job Demands-Resources, M: Mean, MS: Moderately Satisfied, MSQ: Minnesota Satisfaction Questionnaire, NS: Not Satisfied.

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Author Contributions

Equal contributions have been made by all authors.

Conflict of Interest

The authors declare no conflict of interest related to this research.

Declaration of Artificial Intelligence (AI) Assistance

Artificial Intelligence (AI) assistance was used exclusively for language editing and improving clarity.

Ethics Approval

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