

Effect of Flexible Working Hours on Employee Engagement in the Mining Industry

Dhanshree Gomkar¹, Prof. Suziya Khan²

Student, Department of Business Management, SBJITMR, Nagpur¹
Assistant Professor, Department of Business Management, SBJITMR, Nagpur²

Abstract: The present study examines the effect of flexible working hours on employee engagement in the mining industry in Nagpur. The study aims to assess employees' perception towards flexible working hours and analyze their impact on employee engagement. Primary data were collected from 345 employees through a structured questionnaire using simple random sampling technique. The collected data were analyzed using percentage analysis, correlation and regression analysis. The findings revealed that employees have a positive perception toward flexible working hours, particularly in maintaining work–life balance, reducing stress and improving job satisfaction. The study also found a strong positive relationship between flexible working hours and employee engagement. The research concludes that flexible working arrangements significantly improve employee motivation, organizational commitment and overall workplace effectiveness in the mining industry.

Keywords: Flexible Working Hours, Employee Engagement, Mining Industry.

I. Introduction

In the changing work environment, organizations are increasingly adopting flexible working arrangements to improve employee satisfaction, productivity and overall organizational performance. Flexible working hours allow employees to choose or adjust their working schedules according to personal and professional needs, helping them maintain a better work–life balance. As employee expectations continue to evolve, flexible working practices have become an important strategy for attracting, retaining and engaging employees.

Employee engagement refers to the level of commitment, involvement and enthusiasm employees have toward their work and organization. Engaged employees are more motivated, productive and likely to contribute positively to organizational goals. Therefore, organizations are focusing on various practices that can enhance employee engagement and improve workforce performance.

The mining industry is traditionally known for fixed schedules, demanding work conditions and operational challenges. However, with changing workforce expectations and the increasing importance of employee well-being, mining organizations are exploring flexible work arrangements to support employees and improve engagement levels. Providing flexibility in working hours may help reduce stress, increase job satisfaction, and encourage employees to perform more effectively.

This study aims to examine the effect of flexible working hours on employee engagement in the mining industry. The research focuses on understanding employees' perceptions regarding flexible working practices and analyzing how these practices influence their engagement at work. The findings of the study may help organizations in the mining sector design effective work policies that support employee well-being while improving organizational effectiveness and productivity.

II. Literature Review

Several studies found that flexible working hours positively influence employee engagement by improving autonomy, satisfaction and workplace motivation. Hemali Nandani and Vishal Doshi (2025) reported that flexible work timing significantly improves employee engagement in the IT sector. Similarly, Aris Setiyani et al. (2019) found that flexible working hours enhance employee engagement, with employee motivation acting as a mediating factor. These findings indicate that flexibility in work schedules can strengthen employees' emotional and psychological connection with the organization.

Work-life balance emerged as one of the most frequently discussed outcomes of flexible working hours. Studies by Shagvaliyeva and Yazdanifard (2014), Gorde (2023) and Palan & Palan (2023) concluded that flexible work arrangements help employees balance personal and professional responsibilities, reducing stress and improving overall wellbeing. Jabbar et al. (2025) further highlighted that work-life balance partially mediates the effect of flexible working hours on job satisfaction.

Research indicates that flexible working hours contribute to higher employee productivity and performance. Waseem John (2017) emphasized that strategically implemented flexibility enhances organizational productivity through improved employee wellbeing and talent retention. Similar findings were

reported by Abid and Barech (2017), Inothkumar and Anandhi (2025), and Aman Singh & Chaudhary (2025), who observed improved productivity, reduced stress and better efficiency among employees under flexible work arrangements.

Flexible work practices have shown a positive effect on employee motivation and job satisfaction. Ahmad et al. (2013) found a strong positive impact of flexible working hours on employee motivation. Durge and Tekade (2025) reported increased job satisfaction among banking employees due to flexible schedules. The effectiveness of flexible working arrangements depends largely on organizational support and policy implementation. Smite et al. (2022) found that employee preferences, workplace facilities and nature of tasks influence flexible work adoption.

Flexible working hours contribute to employee wellbeing by reducing stress, exhaustion and work-life conflict. Kattenbach et al. (2010) found that time autonomy reduces exhaustion and work–nonwork conflict, while time restrictions increase these issues. Other studies also reported reduced stress and improved quality of life as major outcomes of flexible work arrangements.

Problem Statement

Existing studies have focused on sectors such as IT, banking, education, telecommunications and manufacturing. Limited research has examined the impact of flexible working hours on employee engagement within the mining industry, where work conditions, operational demands and workforce expectations differ significantly. Therefore, the present study aims to explore the effect of flexible working hours on employee engagement in the mining industry.

III. Objective of the Study:

1. To study the existing flexible working hour practices.
2. To assess the perception of employees towards flexible working hours.
3. To analyze the impact of flexible working hours on employee engagement.

IV. Hypothesis:

H01: Employees do not have a positive perception towards flexible working hours.

H02: Flexible working hours do not have a positive impact on employee engagement.

V. Research Methodology:

The present study is descriptive and analytical in nature and aims to examine the effect of flexible working hours on employee engagement in the mining industry in Nagpur. The study is based on both primary and secondary data sources. Primary data were collected through a structured questionnaire from employees working in selected mining industries in the Nagpur region. A total of 345 employees participated in the study and respondents were selected using the simple random sampling method to ensure equal representation. Secondary data were gathered from research journals, books, company reports, official websites, newspapers and other relevant online sources related to flexible working hours and employee engagement. The collected data were organized, classified and analyzed using percentage analysis and suitable statistical methods to interpret the findings and draw meaningful conclusions. The study seeks to understand how flexible working hours influence employee engagement and contribute to improving organizational effectiveness in the mining industry.

VI. Data Analysis and Interpretation

The present study examined the effect of flexible working hours on employee engagement among employees working in selected mining industries in Nagpur.

Data were collected from 345 employees using a structured questionnaire.

The collected information was analyzed through percentage analysis, correlation analysis and regression analysis to understand how flexible working hours influence employee engagement.

Table 1: Demographic Profile of Respondents

| Demographic Factors | Categories | No. of Respondents | Percentage |
|---------------------|-------------|--------------------|------------|
| Age Group | 21–25 years | 230 | 66.67% |
| | 26–30 years | 77 | 22.32% |
| | 31–35 years | 23 | 6.67% |
| | 36–40 years | 15 | 4.34% |

| | | | |
|-----------------|--------------------|------------|-------------|
| | Total | 345 | 100% |
| Gender | Male | 146 | 42.32% |
| | Female | 199 | 57.68% |
| | Total | 345 | 100% |
| Qualification | 12th Pass | 8 | 2.32% |
| | Diploma | 54 | 15.65% |
| | Graduate | 184 | 53.33% |
| | Postgraduate | 99 | 28.70% |
| | Total | 345 | 100% |
| Job Designation | Junior Staff | 176 | 51.01% |
| | Senior Staff | 54 | 15.65% |
| | Manager | 38 | 11.01% |
| | Administrative | 39 | 11.30% |
| | CHO | 38 | 11.01% |
| | Total | 345 | 100% |
| Work Experience | Less than 1 year | 192 | 55.65% |
| | 1–3 years | 115 | 33.33% |
| | 4–6 years | 23 | 6.67% |
| | 7–10 years | 0 | 0.00% |
| | More than 10 years | 15 | 4.35% |
| | Total | 345 | 100% |

The demographic analysis reveals that the majority of respondents (66.67%) belonged to the age group of 21–25 years, indicating that the mining workforce largely consists of young employees. Female respondents constituted 57.68% of the total sample, while male respondents accounted for 42.32%. In terms of educational qualification, most respondents were graduates (53.33%), followed by postgraduates (28.70%), indicating a qualified workforce in the selected mining industries. Regarding job designation, more than half of the respondents (51.01%) were junior staff members, while the remaining respondents belonged to senior staff, managerial, administrative and CHO positions. The work experience analysis indicates that a majority of employees (55.65%) had less than one year of experience, reflecting the presence of relatively new employees in the mining sector.

Table 2: Perception of Employees towards Flexible Working Hours

| Statements | Mean Score | Standard Deviation | Interpretation |
|--|-------------|--------------------|----------------------------|
| Flexible working hours help maintain work–life balance | 4.21 | 0.81 | Positive |
| Flexible timing reduces work stress | 4.08 | 0.89 | Positive |
| Flexible working hours improve job satisfaction | 4.15 | 0.85 | Positive |
| Flexible work schedules increase productivity | 3.98 | 0.93 | Positive |
| Flexible working arrangements motivate employees | 4.12 | 0.84 | Positive |
| Overall Mean Score | 4.11 | 0.86 | Positive Perception |

The analysis of employees’ perception toward flexible working hours indicates a positive response from the respondents in the selected mining industries. The statement “Flexible working hours help maintain work–life balance” recorded the highest mean score of 4.21 with a standard deviation of 0.81, showing that employees strongly agree that flexible schedules help them balance their professional and personal responsibilities effectively.

The statement “Flexible working hours improve job satisfaction” obtained a mean score of 4.15, indicating that employees feel more satisfied with their jobs when flexibility is provided in work schedules. Similarly, the statement “Flexible working arrangements motivate employees” recorded a mean score of 4.12, reflecting that flexible work practices positively influence employee motivation and morale.

Further, the statement “Flexible timing reduces work stress” achieved a mean score of 4.08, which suggests that employees believe flexible working arrangements help reduce workplace stress and pressure. The

statement “Flexible work schedules increase productivity” recorded the lowest mean score of 3.98; however, it still indicates a positive opinion among employees regarding improved productivity through flexible schedules.

The overall mean score of 4.11 with a standard deviation of 0.86 indicates that employees have a positive perception toward flexible working hours. Therefore, it can be concluded that flexible working arrangements contribute significantly toward employee wellbeing, satisfaction and workplace effectiveness in the mining.

Table 3: Impact of Flexible Working Hours on Employee Engagement

| Employee Engagement Variables | Mean Score | Standard Deviation | Interpretation |
|--|-------------|--------------------|------------------------|
| Employees feel more committed toward work | 4.06 | 0.86 | Positive Impact |
| Flexible hours improve employee morale | 4.18 | 0.82 | High Positive Impact |
| Employees feel motivated to perform better | 4.11 | 0.87 | Positive Impact |
| Flexible work timing improves organizational loyalty | 3.97 | 0.91 | Positive Impact |
| Flexible working increases overall engagement level | 4.14 | 0.84 | Positive Impact |
| Overall Mean Score | 4.09 | 0.86 | Positive Impact |

The analysis indicates that flexible working hours have a positive impact on employee engagement in the mining industry. The highest mean score (4.18) was recorded for improvement in employee morale, showing that flexible schedules enhance employee enthusiasm and workplace attitude. Employees also agreed that flexible working hours increase engagement levels (4.14) and motivate them to perform better (4.11).

Further, employees felt more committed toward their work (4.06), while organizational loyalty also improved through flexible work timing (3.97). The overall mean score of 4.09 with a standard deviation of 0.86 indicates that flexible working hours significantly contribute to improving employee engagement and organizational commitment.

Table 4: Correlation between Flexible Working Hours and Employee Engagement

| Variables | Correlation Coefficient (r) | Significance Value |
|--|-----------------------------|--------------------|
| Flexible Working Hours & Employee Engagement | 0.79 | 0.00 |

The correlation coefficient value of 0.79 indicates a strong positive relationship between flexible working hours and employee engagement. The significance value ($p = 0.000$) is less than 0.05, which confirms that the relationship is statistically significant. Therefore, flexible working hours significantly contribute toward improving employee engagement in the mining industry.

Table 5: Regression Analysis of Flexible Working Hours on Employee Engagement

| Variables | Beta Value | t-value | Significance |
|------------------------|------------|---------|--------------|
| Flexible Working Hours | 0.79 | 14.82 | 0.00 |

The regression analysis reveals that flexible working hours have a significant positive impact on employee engagement in the mining industry. The beta value of 0.79 indicates a strong positive effect of flexible working hours on employee engagement. The t-value of 14.82 shows that the relationship is statistically significant and reliable. Since the significance value is 0.00, which is less than 0.05, the null hypothesis is rejected. Therefore, it can be concluded that flexible working hours significantly improve employee engagement, motivation and organizational commitment among employees.

VII. Conclusion

The study concludes that flexible working hours have a significant positive effect on employee engagement in the mining industry. The findings revealed that employees perceive flexible working arrangements positively as they help maintain work–life balance, reduce stress, improve job satisfaction and enhance motivation. Statistical analysis further confirmed a strong positive relationship between flexible working hours and employee engagement. Employees working under flexible schedules demonstrated improved

morale, organizational commitment and workplace performance. Therefore, mining organizations should adopt effective flexible work policies to improve employee wellbeing, increase productivity and strengthen organizational effectiveness.

Future Scope of the Study

The present study is limited to selected mining industries in Nagpur; therefore, future research can be conducted in different industries such as manufacturing, banking, healthcare and IT sectors to compare the impact of flexible working hours on employee engagement. Future studies may also include additional factors such as organizational culture, leadership style, and employee wellbeing and job performance for a broader understanding of employee engagement. Researchers can conduct studies with a larger sample size and wider geographical coverage to obtain more comprehensive findings. Further research may also examine the long-term effects of flexible working arrangements, remote work and hybrid work models on employee productivity, retention and organizational effectiveness.

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