

Analysing Effective and Efficient Techniques to regulate Workers Participation in Management at Bokaro Steel Plant

Renu Singh

ABSTRACT

Evaluating the efficient and effective techniques of Workers Participation In Management is the challenges of the organization to cope up with the changing environment. Organization support provides accountability and responsibility to each employee of the organization. As the communication channel develops the workers involvement and trust towards management and the employees to continue with the satisfaction and cooperation in the system. As the whole productivity of the employee depend on the involvement and organization support with the smooth communication channel regulated in the organization. The trust and loyalty between management and employee creates environment of satisfaction and belongingness. The efficient relationship of management and employees deliver productivity and growth of the organization. Workers Participation at all level in the organization provide open culture and climate. Industrial democracy leads to the satisfaction with upward movement towards efficiency and productivity of the Learning organization. Workers Participation In Management Tools as works committee, Joint Management Council, Board representative, Shop Floor Etc is the way of creating job as well as physical security to each employee. How each variable as Management committee, Organization Support, communication Effectiveness, Trust between worker and management, workers involvement effect the workers Participation in management is the focus of the research analysis. WPM will provide social justice and economic prosperity to each employee.

Key Words: Organizational Support (OS), Management Commitment (MC), Trust Between Workers and Management (TW), Communication Effectiveness (CE), Workers Participation in Management (WPM), Worker Involvement (WI)

INTRODUCTION

SAIL Bokaro Steel Plant

The Bokaro Steel Plant (BSL), a premier unit of the Steel Authority of India Limited (SAIL), stands as a testament to India's industrial prowess. Strategically located in Bokaro, Jharkhand, BSL is renowned for its state-of-the-art infrastructure, diverse product range, and commitment to excellence in steel production.

Historical Background

Conceived in the late 1950s, the Bokaro Steel Plant was established in collaboration with the former Soviet Union. Incorporated as a limited company in 1964, it became a part of SAIL in 1978. BSL is recognized as India's first 'Swadeshi' steel plant, emphasizing indigenous development in equipment, materials, and know-how.

Infrastructure and Facilities

BSL boasts a fully integrated steel production facility, encompassing the entire process from raw material handling to finished products.

The plant has undergone several modernization initiatives to enhance efficiency, product quality, and environmental sustainability.

Product Portfolio

BSL specializes in producing a wide array of flat steel products catering to diverse industrial sectors:

- **Hot Rolled Coils, Plates, and Sheets:** Used in construction, automotive, and machinery manufacturing.
- **Cold Rolled Coils and Sheets:** Serve the appliance and automotive industries.
- **Galvanized Plain and Corrugated Sheets:** Ideal for roofing and cladding applications.
- **Specialty Steels:** Including DMR grade, low-weight stainless steel, and SeQR TMT bars for specialized applications.

These products are integral to sectors such as infrastructure, automotive, consumer goods, and energy.

We have conducted the survey to know about the implementation of Workers Participation In Management in the Plant. How different variables under the WPM are taken care by the management and the employee are studied.

LITRATURE REVIEW

Programs to improve cooperation between labour and management promoted in developed and developing countries around the world (Wehmhorner 1980: Schregle:1982). Labour Management cooperation programs improve productivity. Reduce absenteeism, accidents, grievances and work stoppage (Katz, Kochan, Gobeille: 1983).

Government Of India implement several techniques to felicitate the relation between labour and the management. The Government of India has declared the workers' participation in the management of the enterprise as one of the methods by which social justice and economic prosperity might be secured for workers and at the same time production could be increased. Various steps have been taken by the Government to make the scheme of participative management a successful venture. Initially the provision was made for the establishment of the Joint Management Councils in public as well as in private sector undertaking. By the Constitutional Amendment Act of 1976' constitutional provision, namely, Article 43, it was introduced under which obligation has been imposed on the Government to take appropriate measures aiming to ensure the participation of the workers in the management of undertakings, establishments or other organizations engaged in any industry. Consequently the Government of India in January 1977 introduced a new scheme of workers' participation in management in commercial and service organisation, as well as the public sector establishments having large scale public dealings. With the result the Government implemented workers' participation in various sectors of employment, namely, the public organization, viz. Posts and Telegraphs offices, Railway Stations, Booking Offices. (Kunal K. Majee: 2003)

We examined the human resource challenges in business organisations. A major findings of the study has been that most respondents express their desire to assume greater levels of responsibilities and expect more transparency and involvement in manpower planning and development of the people. The study called for labour involvement at various stages of decision-making in an Organisation right from the idea generation stage. (Bhat and Maheswari (2005)

Brigid and Bechtold (1997) explored how organisational culture was created and its impact in industry and studied how inclusion and participation become the cultural norms in an Organisation. The studies found that there should be a change in the fundamental assumptions about human nature, organisational philosophy, and business strategy to self organisations. Only then participation will work effectively.

Marin Garcia (2001) has studied the participative management in Spanish large industrial companies. He observed that a considerable amount of companies has opted for introducing procedures that are aimed towards workers participation. The study identified those programmes and procedures that are associated to participative management, industrial democracy, and co-operatives. It identified the relationships existing among participation programmes and also the situations in which participative companies will most probably be found. A comparison was also made of the Spanish situation with that of the large companies in the United States.

Nico (1999) studied the relationship between labour involvement in decision-making and the employees' intrinsic desire to contribute more to improve their professional services. Labour involvement has led to commitment among employees and reduced the need for external monitoring mechanisms. Committed employees need less supervision to control their behaviour and they will strengthen the Organisation's image among the customers and society

In India, WPM aligns with the country democratic ethos and labour policies. The roots of participative management trace back to the Industrial Disputes Act of 1947, which mandated the establishment of Works Committees for resolving grievances and fostering cooperation. Subsequent Five-Year Plans emphasized WPM to achieve industrial peace and productivity. WPM was made regulatory by the Government to give the moral boost to the labour for development and growth of the employee as well as the Organization.

HYPOTHESIS

Looking the different variable associated with Workers Participation Of Management and its effect in regulating the tools and techniques was clearly mentioning the requirement of the below hypothesis to judge the effectiveness of WPM.

1. OS positively significant on CE
2. MC positively significant on CE
3. CE positively significant on WI

4. CE positively significant on TW
5. WI positively significant on TW
6. CE positively significant on WPM
7. TW positively significant on WPM

Workers Participation in Management (WPM)
 Organizational Support (OS)
 Worker Involvement (WI)
 Management Commitment (MC)
 Trust Between Workers and Management (TW)
 Communication Effectiveness (CE)

RESEARCH METHODOLOGY

Research Design

Descriptive study was conducted through several tools and techniques of the descriptive design. This study adopts a descriptive research design, which is suited for making specific predictions, measuring the percentage of units in a specified population exhibiting certain behaviors, and describing the characteristics of relevant groups. Descriptive research enables a systematic analysis of Workers Participation in Management (WPM) and its effectiveness in Bokaro Steel Ltd.

Sampling Design

The sample design refers to the method of selecting respondents. This study employs simple random sampling to ensure that each unit in the population has an equal chance of being selected, thereby minimizing selection bias.

Sample Size

The sample consists of 50 executives and 50 workers, selected from the total employee strength of Bokaro Steel Ltd.

Data Collection

The study relies on both primary and secondary data:

Primary Data:

Collected through an interview schedule specifically designed to gather information from participative workers and executives. Data was collected through personal interviews and observations during visits to the organizations.

A structured interview schedule was developed with input from the organizations to ensure relevance and clarity. The researcher personally administered the interviews to maintain consistency in data collection.

Secondary Data:

Obtained from sources such as company booklets, reports, websites, and existing literature. Secondary data complements the primary data and helps validate findings.

ANALYSIS AND FINDINGS

This model below (Figure – 1) shows how the different variables of Industrial Relations is related to the channel towards Workers Participation of Management. Organization Support with Management Committee develops a strong effective communication channel. The communication channel demands a strong worker involvement having the trust of the workers towards the participation in the management. A strong coordination and cooperation along with the variables will be the strength of the organization. Trust, Loyalty, involvement, communication, support are the pillars to develop a strong relation between management and the employee with responsibility and authenticity.

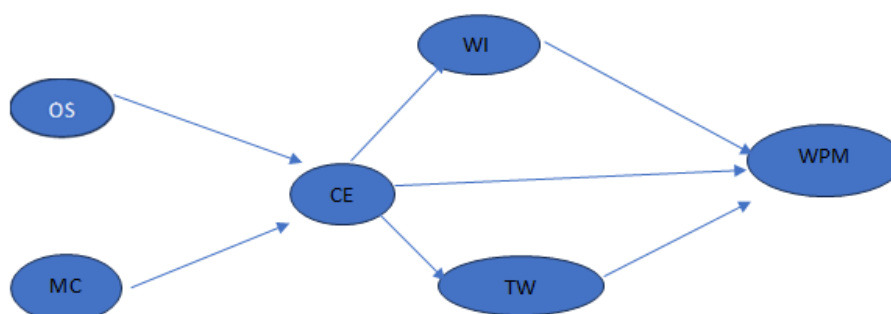


Figure: 1

Cronbach's Alpha for Multi-Item Scales

Cronbach's Alpha Used to measure of reliability.

Below is the formula for Cronbach's alpha.

$$\alpha = \frac{N * \bar{c}}{\bar{v} + (N - 1) * \bar{c}}$$

Where:

- \bar{N} = number of items
- \bar{c} = mean covariance between items.
- \bar{v} = mean item variance.

Scale	Cronbach's Alpha	Interpretation
Organizational Support (OS)	0.568	Moderate reliability
Worker Involvement (WI)	0.579	Moderate reliability
Management Commitment (MC)	0.618	Acceptable reliability but could be improved.
Communication Effectiveness (CE)	0.653	Acceptable reliability.
Trust Between Workers (TW)	0.583	Moderate reliability

Overall Reliability:

Most scales have moderate reliability, with Cronbach's Alpha values between 0.57 and 0.62.

Kolmogorov-Smirnov Normality Test Results

The Kolmogorov-Smirnov test was conducted to assess the normality of the distribution for each variable. Here's the detailed interpretation:

Variable	N	KS-Z	p-value	Interpretation
Workers Participation in Management (WPM)	200	1.591	0.091	The data does not significantly deviate from normality.
Organizational Support (OS)	200	1.327	0.327	The data is approximately normally distributed.
Worker Involvement (WI)	200	0.822	0.058	The data is close to normality,
Management Commitment (MC)	200	1.227	0.121	The data does not significantly deviate from normality.
Trust Between Workers and Management (TW)	200	1.161	0.055	Similar to WI, the data is close to normality.
Communication Effectiveness (CE)	200	1.423	0.370	The data appears approximately normal.

Overall Findings

1. Normality Confirmed:

- **OS, MC, and CE:** These variables have p-values greater than 0.05, indicating no significant deviation from normality.
- **WPM:** Close to normal with no significant deviation.

2. Borderline Cases:

- **WI and TW:** Both variables have p-values close to 0.05, suggesting minor deviations from normality. These variables are approximately normal but may warrant further examination through Q-Q plots or transformations if needed.

Model Summary for Hypotheses Testing

Hypothesis	R-Squared	Coefficient (B)	p-value (Sig.)	Interpretation
H1: OS → CE	0.040	0.206	0.005	Significant but weak positive effect of OS on CE.
H2: MC → CE	0.171	0.315	0.000	Strong positive effect of MC on CE.
H3: CE → WI	0.096	0.401	0.000	CE has a moderate positive effect on WI.
H4: CE → TW	0.244	0.525	0.000	CE strongly influences TW positively.

Hypothesis	R-Squared	Coefficient (B)	p-value (Sig.)	Interpretation
H5: WI → TW	0.105	0.267	0.000	WI has a moderate positive effect on TW.
H6: CE → WPM	0.226	0.705	0.000	CE moderately affects WPM positively.
H7: TW → WPM	0.260	0.711	0.000	TW strongly influences WPM positively.

Interpretation

1. **H1: Organizational Support (OS) → Communication Effectiveness (CE):**
 - **R-Squared (4.0%):** OS explains 4% of the variance in CE.
 - **Coefficient (0.206):** A unit increase in OS improves CE by 0.206.
 - **Significance:** Significant ($p = 0.005$). OS has a positive but weak influence on CE.
2. **H2: Management Commitment (MC) → CE:**
 - **R-Squared (17.1%):** MC explains 17.1% of the variance in CE.
 - **Coefficient (0.315):** A unit increase in MC improves CE by 0.315.
 - **Significance:** Highly significant ($p < 0.001$). MC strongly influences CE.
3. **H3: CE → Worker Involvement (WI):**
 - **R-Squared (9.6%):** CE explains 9.6% of the variance in WI.
 - **Coefficient (0.401):** A unit increase in CE improves WI by 0.401.
 - **Significance:** Highly significant ($p < 0.001$). CE moderately influences WI.
4. **H4: CE → Trust Between Workers and Management (TW):**
 - **R-Squared (24.4%):** CE explains 24.4% of the variance in TW.
 - **Coefficient (0.525):** A unit increase in CE improves TW by 0.525.
 - **Significance:** Highly significant ($p < 0.001$). CE strongly influences TW.
5. **H5: WI → TW:**
 - **R-Squared (10.5%):** WI explains 10.5% of the variance in TW.
 - **Coefficient (0.267):** A unit increase in WI improves TW by 0.267.
 - **Significance:** Highly significant ($p < 0.001$). WI moderately influences TW.
6. **H6: CE → Workers Participation in Management (WPM):**
 - **R-Squared (22.6%):** CE explains 22.6% of the variance in WPM.
 - **Coefficient (0.705):** A unit increase in CE improves WPM by 0.705.
 - **Significance:** Highly significant ($p < 0.001$). CE has a strong influence on WPM.
7. **H7: TW → WPM:**
 - **R-Squared (26.0%):** TW explains 26.0% of the variance in WPM.
 - **Coefficient (0.711):** A unit increase in TW improves WPM by 0.711.
 - **Significance:** Highly significant ($p < 0.001$). TW is the strongest driver of WPM.

Key Takeaways

- Trust Between Workers and Management (TW) is the most influential variable for WPM, explaining 26% of its variance.
- Communication Effectiveness (CE) plays a critical role in influencing both WI and TW, making it a central variable in the model.
- Organizational Support (OS) has a relatively weaker impact on CE compared to Management Commitment (MC), which is a stronger driver.

Moderation Analysis

WI as a moderator between CE and WPM.

- TW as a moderator between CE and WPM.

Findings for Moderation Analysis in Bokaro Dataset

Moderation by WI (Worker Involvement)

Metric	Value
R-Squared	0.278
CE Coefficient (B)	1.171
WI Coefficient (B)	0.671

Metric	Value
CE_WI_Interaction (B)	-0.041
Interaction p-value	0.094 (Not significant)

- **Interpretation:**

- CE and WI both significantly impact WPM directly ($p = 0.001$ and $p = 0.011$, respectively).
- The interaction term ($CE \times WI$) is not statistically significant ($p = 0.094$).
- Implication: WI does not significantly moderate the relationship between CE and WPM. However, it does have a direct positive influence on WPM.

Moderation by TW (Trust Between Workers and Management)

Metric	Value
R-Squared	0.345
CE Coefficient (B)	1.095
TW Coefficient (B)	1.163
CE_TW_Interaction (B)	-0.063
Interaction p-value	0.018 (Significant)

- **Interpretation:**

- CE and TW both significantly impact WPM directly ($p = 0.000$ for both).
- The interaction term ($CE \times TW$) is statistically significant ($p = 0.018$).
- Implication: TW moderates the relationship between CE and WPM. The effect of CE on WPM varies depending on levels of TW. However, the negative coefficient for the interaction suggests that high TW may slightly offset the direct impact of CE.

Key Insights

1. **CE as a Core Driver:**

- CE is a dominant predictor of WPM, both directly and when moderated by TW.

2. **TW as a Moderator:**

- TW enhances the relationship between CE and WPM, with $R^2 = 0.345$, accounting for 34.5% of variability in WPM.

3. **WI's Limited Role:**

- WI does not significantly moderate the CE-WPM relationship, though it has a direct positive effect.

Summary of the Analysis

As we see through our studies that Communication is the effective tool in Workers Participation which is less effective at Bokaro Steel Plant. The trust level between workers and the management is also at the moderate level. Employee Involvement is also at the moderate level so the relationship between management and the employee is not strong and the belief in the management is missing so there are problems which are regularly seen in the organization. As a take away from the analysis it is suggested to improve the relationship between management and the employee for each one growth in the changing HRM Prospective. Here is a news from news channel about the recent problem occurred in the plant mentioned below.

Future Scope of the Study

The exploration of the influencing factors on Worker Participatory Management (WPM), such as Organizational Support (OS), Management Commitment (MC), Communication Effectiveness (CE), Worker Involvement (WI), and Trust Between Workers and Management (TW), provides fertile ground for further research and practical applications. There is a significant scope to extend this study across multidimensional aspects as industries grow and workplace dynamics change. Specific areas where this study can be extended and its implications explored in detail are given below.

1. **Longitudinal Studies**

Temporal: A longitudinal approach offers deeper insights into how characteristics like CE, TW, and WPM evolve over time. It would be meaningful to see if interventions—such as improved communication systems or trust-building programs—result in sustained change in participatory management.

2. **Integration of Technological Advancements**

Role of Digital Tools: With digital transformation, AI-driven communication platforms, employee engagement applications, and real-time feedback systems are on the rise. Future research can explore how these technologies enhance or inhibit variables like CE and WI.

Dynamics of Remote Work: As remote or hybrid work models redefine workplace interactions, studies can investigate how these influence interpersonal trust, communication, and participation practices in geographically dispersed teams.

4. Psychological and Behavioral Dimensions

Emotional and Cognitive Factors: Future studies can investigate WPM by incorporating psychological constructs like emotional intelligence, job satisfaction, and workplace resilience that may mediate or moderate outcomes.

5. Greater Impact on Organizational Performance

Connecting WPM with Organizational Success: Future studies could examine both the direct and indirect influences WPM exerts on other key organizational outcomes, such as productivity, innovation, employee retention, and financial performance.

Best Practices Benchmarking: Setting benchmarks concerning participatory management practices across organizations would help identify strategies that consistently provide high performance.

6. Societal and Economic Perspectives

Worker Well-being: It is essential to examine the social effects of WPM, including enhanced worker well-being, reduced stress, and improved work-life balance.

Economic Resilience: Further research could explore how participatory management reinforces organizational resilience during economic downturns, contributing to broader economic stability.

CONCLUSION

The future scope of this research extends well beyond the realms of any single organization or sector. By embracing cross-sectoral, cultural, technological, and psychological perspectives, this study opens a broader frame to explore the mechanisms involved in Worker Participatory Management. As industries undergo rapid changes, understanding WPM and enhancing its implementation will remain critical for building an engaged, resilient, and productive workforce. This ongoing journey of discovery promises to deliver new insights with significant practical applications for businesses, policymakers, and society.

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