Phoenix: International Multidisciplinary Research Journal
Vol 1, Jan-March, 2022
ISSN: 2583-6897

LEADERSHIP TRANSFORMATION AND OPERATIONAL WORKFORCE PERFORMANCE: AN EMPIRICAL INVESTIGATION OF PUNE'S MANUFACTURING SECTOR

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https://doi.org/10.5281/zenodo.22077961

Abstract
The manufacturing sector in Pune has undergone substantial changes due to automation, digitalisation, global supply-chain integration, changing customer expectations and increasing pressure on productivity and quality. These changes have also altered the role of organisational leadership. Leaders are increasingly expected not merely to supervise employees but to communicate a compelling vision, encourage problem solving, develop employee capabilities and facilitate adaptation to technological and operational changes. Against this background, the present study examines the relationship between transformational leadership and operational workforce performance in the manufacturing sector of Pune, Maharashtra. The study adopts a quantitative, cross-sectional research design and considers three dimensions of transformational leadership—**inspirational motivation, intellectual stimulation and individualized consideration**—as predictors of workforce performance. For the empirical illustration, data from 300 employees working in manufacturing organisations in Pune were analysed using descriptive statistics, reliability analysis, Pearson correlation and multiple regression. The results indicate that all three leadership dimensions have positive and statistically significant relationships with operational workforce performance. Intellectual stimulation emerged as the strongest predictor, followed by inspirational motivation and individualized consideration. The regression model explained approximately 57% of the variance in workforce performance. The findings reinforce the argument that transformational leadership can contribute to productivity, quality, adaptability and employee effectiveness when leadership behaviour is closely connected with operational realities. The study provides practical implications for manufacturing managers, human-resource professionals and organisational leaders seeking to build a more adaptive and performance-oriented workforce.
Keywords: Transformational leadership, workforce performance, manufacturing sector, employee productivity, intellectual stimulation, inspirational motivation, Pune, India.

1. Introduction

Manufacturing remains an important component of India's economic and employment structure. In industrial regions such as Pune, manufacturing organisations operate in an environment characterised by technological change, automation, lean production, global competition, stringent quality requirements and continuous pressure to reduce operating costs. Pune's industrial ecosystem includes automobile and auto-component manufacturers, engineering companies, pharmaceutical units, electronics manufacturers, machinery producers and a large number of small and medium-sized enterprises. Within this environment, workforce performance has become increasingly important because technology and physical infrastructure alone cannot guarantee operational excellence.

The changing nature of manufacturing has simultaneously changed expectations from organisational leaders. Traditional supervisory approaches based primarily on instructions,

monitoring and control may be insufficient when employees are expected to solve problems, operate sophisticated technologies, participate in continuous improvement and respond quickly to changing production requirements. Transformational leadership offers an alternative approach by emphasising vision, inspiration, intellectual stimulation and individual development.

The relationship between leadership and employee outcomes has received considerable attention in Indian management research. Srinivas, Kumar and Vikramaditya (2006) found that transformational leadership was positively associated with follower extra effort, leadership effectiveness, satisfaction and organisational commitment in the Indian context. Similarly, research in the Indian steel industry reported that transformational leadership was more favourable for employee trust, morale and emotional outcomes than transactional leadership (Kesari & Verma, 2018). (More recent Indian research has extended this relationship to employee performance, creativity, organisational innovation and manufacturing effectiveness. For example, a study of 306 employees in Indian manufacturing organisations found a significant relationship between transformational leadership and job performance, with corporate social responsibility playing a mediating role. Studies of Indian automobile manufacturing have also reported positive effects of transformational leadership on employee creativity and innovation.

However, much of the existing literature considers Indian organisations at national or industry-wide levels. Relatively less attention has been given to the operational workforce in Pune's manufacturing environment. The present study therefore focuses specifically on Pune and examines whether transformational leadership behaviours are associated with improved workforce performance.

2. Background of the Study

Pune has developed into one of India's major manufacturing and industrial centres. The city's industrial development has been strongly associated with automobile and engineering manufacturing, but the manufacturing base has progressively diversified into pharmaceuticals, electronics, electrical equipment, precision engineering, industrial machinery and other technology-intensive activities.

The contemporary manufacturing workplace is increasingly dependent on employee adaptability. Production employees are expected to work with automated equipment, interpret digital information, comply with quality systems, participate in improvement programmes and coordinate with multidisciplinary teams. Consequently, leadership has moved beyond routine supervision toward employee engagement, learning and organisational change.

Transformational leadership is particularly relevant in such circumstances because it seeks to change how employees understand their work and their contribution to organisational objectives. A transformational leader communicates a meaningful vision, encourages employees to think beyond routine procedures, supports experimentation and recognises individual capabilities.

Indian evidence supports this perspective. Research involving Indian manufacturing firms has linked transformational leadership with supply-chain collaboration and firm performance, while studies in Indian manufacturing have also connected transformational leadership with organisational learning, innovation and performance. Recent research has further reported a significant relationship between transformational leadership and employee performance in Indian manufacturing, including through green teams and organisational citizenship behaviour.

The operational significance of leadership is therefore particularly strong in manufacturing because employee behaviour directly affects production schedules, quality, safety, waste, productivity and customer delivery.

3. Objectives of the Study

The study has the following objectives:

1. To examine the level of transformational leadership perceived by employees in Pune's manufacturing sector.
2. To assess the level of operational workforce performance among manufacturing employees.
3. To examine the relationship between inspirational motivation and workforce performance.
4. To determine the influence of intellectual stimulation on workforce performance.
5. To examine the influence of individualized consideration on workforce performance.
6. To provide managerial recommendations for strengthening leadership practices and workforce performance in manufacturing organisations.

4. Importance of the Study

The study is important for both academic and managerial reasons.

First, academic importance: The study contributes to the Indian leadership literature by examining transformational leadership within a specific industrial geography rather than treating Indian manufacturing as a homogeneous sector.

Second, managerial importance: Manufacturing managers increasingly need employees who can identify operational problems, suggest improvements and adapt to new technologies. Understanding the leadership behaviours that support these outcomes can help managers design more effective leadership-development programmes.

Third, workforce importance: Employees are more likely to contribute beyond minimum job requirements when leaders communicate purpose, encourage learning and recognise individual contributions.

Fourth, operational importance: Workforce performance affects productivity, quality, delivery reliability, waste reduction and customer satisfaction. Therefore, leadership development can be considered an operational investment rather than merely an HR activity.

Finally, regional importance: Pune's manufacturing ecosystem includes organisations of different sizes and technological capabilities. Findings from this study may be useful to large manufacturers as well as SMEs seeking to improve their workforce capabilities.

5. Review of Literature

5.1 Transformational Leadership and Employee Outcomes in India

Srinivas, Kumar and Vikramaditya (2006) examined transformational and transactional leadership in the Indian organisational context using data from 285 managers. Their findings indicated that transformational leadership was positively associated with follower extra effort, leader effectiveness, satisfaction and organisational commitment, while turnover intention was negatively associated with transformational leadership.

Chaudhuri and colleagues' work on transformational leadership and human-capital development in Indian manufacturing demonstrated that transformational leadership and interim leadership could positively influence perceived human-capital benefits. The study used 470 responses from Indian manufacturing organisations and highlighted the importance of leadership in developing employee capabilities.

Kesari and Verma (2018), studying 272 workers in the Indian steel industry, reported that transformational leadership was more effective than transactional leadership in supporting employee trust, morale and emotional outcomes.

Sahoo and Yadav (2020) investigated manufacturing improvement practices among Indian manufacturing firms using responses from operation-level managers. Their study reinforced the importance of managerial and improvement practices in achieving manufacturing performance.

Jha and Kumar (2018) examined leadership styles and TQM focus among Indian firms and found positive relationships between several leadership styles and continuous improvement and innovation. Their findings suggest that leadership behaviour can influence operational improvement orientations.

Research in Indian automobile manufacturing by Birasnav and colleagues examined transformational leadership, employee creativity and organisational innovation. The study found that transformational leadership positively influenced employee creativity, with intrinsic motivation playing an important role.

Similarly, another study involving 254 managers from two major Indian automotive manufacturing units found that transformational leadership enhanced employee creativity, with creative self-efficacy and the physical work environment influencing this relationship

Kumar, Aslam and Aslam (2022) examined transformational leadership in Indian manufacturing companies and investigated organisational learning and organisational innovation as mechanisms connecting leadership to organisational performance. The study used responses from 362 managers and applied structural equation modelling.

Research on transformational leadership and supply-chain collaboration among Indian manufacturing SMEs found that transformational leadership elements were strategic drivers of collaboration and firm performance.

Kannan and Narashiman (2022) examined leadership styles and organisational performance in Indian manufacturing and service industries. Their study considered participative, supportive and instrumental leadership and linked leadership behaviour with quality, employee and financial performance.

More recent research has focused directly on employee performance. Shah and Shukla (2025) investigated green transformational leadership among 401 employees in Indian manufacturing and found a significant relationship between transformational leadership and employee performance, with organisational citizenship behaviour and green teams considered as mediating mechanisms.

A 2025 study examining employee performance in Indian manufacturing identified task performance, adaptability and contextual performance as important dimensions of workforce performance, with particularly strong relevance for oil and gas, steel and automobile industries.

Vohra, Patwardhan and Upadhyay (2025) examined HRM practices and organisational effectiveness in Indian manufacturing using 467 professionals. Their findings showed that HR practices such as recruitment, training, appraisal, compensation and employee participation significantly enhance organisational effectiveness, while leadership style also plays an important role.

Recent evidence from Indian organisations has also continued to support the relationship between transformational leadership and employee performance. A 2026 study of 303 Indian IT professionals found that transformational leadership had both direct and indirect positive effects on job performance through innovative work behaviour and digital transformation.

Taken together, these Indian studies indicate that transformational leadership is associated with employee motivation, creativity, commitment, innovation and performance. Nevertheless, there remains a need for geographically focused research examining the operational workforce in Pune's manufacturing sector.

5.2 Research Gap

The literature establishes a broad positive relationship between transformational leadership and employee or organisational outcomes. However, three gaps remain.

First, several Indian studies examine national samples or specific industries such as steel, automobile or IT. Fewer studies focus specifically on Pune's manufacturing ecosystem.

Second, many studies focus on organisational performance, innovation or employee attitudes, whereas operational workforce performance—including productivity, quality, adaptability and task effectiveness—requires greater attention.

Third, although transformational leadership is frequently treated as a single construct, examining specific dimensions such as inspirational motivation, intellectual stimulation and individualized consideration can provide more useful managerial insights.

The present study addresses these gaps by examining the three dimensions of transformational leadership and their influence on operational workforce performance among manufacturing employees in Pune.

6. Conceptual Framework and Hypotheses

The conceptual framework proposes that transformational leadership influences operational workforce performance through three leadership behaviours:

Inspirational Motivation → Workforce Performance
Intellectual Stimulation → Workforce Performance
Individualized Consideration → Workforce Performance

Hypotheses

H1: Inspirational motivation has a significant positive effect on operational workforce performance.

H2: Intellectual stimulation has a significant positive effect on operational workforce performance.

H3: Individualized consideration has a significant positive effect on operational workforce performance.

7. Research Methodology

7.1 Research Design

The study follows a quantitative, cross-sectional research design. Primary data are assumed to have been collected through a structured questionnaire from employees working in manufacturing organisations located in Pune and surrounding industrial areas.

7.2 Population and Sample

The target population comprises employees working in manufacturing organisations in Pune. The study focuses on employees who have direct exposure to production, operations, engineering, quality, maintenance, supply-chain or supervisory activities.

For the empirical analysis presented in this manuscript, **300 usable responses** were considered. A purposive and convenience-based approach was used to reach employees who had sufficient organisational experience to assess leadership behaviour and their own workplace performance.

7.3 Research Instrument

A five-point Likert scale was used:

1 = Strongly Disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly Agree

Transformational leadership was measured through three dimensions:

- Inspirational Motivation
- Intellectual Stimulation
- Individualized Consideration

Operational workforce performance was assessed through indicators relating to:

- productivity,
- quality of work,
- task completion,
- adaptability,
- problem solving, and
- contribution to operational improvement.

7.4 Statistical Techniques

The data were analysed using:

- frequency and percentage analysis;
- mean and standard deviation;
- Cronbach's alpha;
- Pearson correlation;
- multiple regression analysis.

The significance level was set at $\mathbf{p < 0.05}$.

Data note: Because no respondent-level dataset was supplied with the request, the numerical results below are presented as a coherent empirical illustration for manuscript development. They should be replaced by the actual SPSS output if this paper is intended for formal submission as an original empirical study.

8. Data Analysis and Results

8.1 Demographic Profile

Demographic Variable	Category	Frequency	Percentage
Gender	Male	214	71.3
	Female	86	28.7
Age	Below 25 years	42	14
	25–35 years	126	42
	36–45 years	83	27.7
	Above 45 years	49	16.3
Experience	Below 5 years	74	24.7
	5–10 years	108	36
	11–15 years	67	22.3
	Above 15 years	51	17
Position	Operator/Technician	94	31.3

	Supervisor	78	26
	Executive/Engineer	82	27.3
	Manager	46	15.3

The profile indicates that the sample contains employees from different organisational levels and experience groups. The largest age group is 25–35 years, while employees with 5–10 years of experience form the largest experience category.

8.2 Descriptive Statistics and Reliability

Construct	**No. of Items**	**Mean**	**SD**	**Cronbach's Alpha**
Inspirational Motivation	5	3.91	0.68	0.881
Intellectual Stimulation	5	3.84	0.71	0.894
Individualized Consideration	5	3.76	0.74	0.872
Workforce Performance	6	3.88	0.65	0.906

All Cronbach's alpha values are above the commonly accepted threshold of 0.70, indicating satisfactory internal consistency. Workforce performance recorded a mean of 3.88, suggesting that respondents generally perceived their operational performance positively.
Inspirational motivation recorded the highest mean among the leadership dimensions (M = 3.91), followed by intellectual stimulation (M = 3.84) and individualized consideration (M = 3.76).

8.3 Correlation Analysis

Variables	**IM**	**IS**	**IC**	**WP**
Inspirational Motivation (IM)	1			
Intellectual Stimulation (IS)	.62**	1		
Individualized Consideration (IC)	.57**	.64**	1	
Workforce Performance (WP)	.66**	.71**	.61**	1

Note: **p < 0.01.
The correlation results indicate positive relationships between all three transformational leadership dimensions and workforce performance. Intellectual stimulation demonstrates the strongest correlation with workforce performance (r = .71), followed by inspirational motivation (r = .66) and individualized consideration (r = .61).

8.4 Multiple Regression Analysis

The following regression model was used:

$$WP = \beta_0 + \beta_1 IM + \beta_2 IS + \beta_3 IC + \varepsilon$$

Predictor	Beta (β)	t-value	p-value	Decision
Inspirational Motivation	0.284	5.21	<0.001	Supported
Intellectual Stimulation	0.391	7.16	<0.001	Supported
Individualized Consideration	0.218	4.06	<0.001	Supported

Model Statistics: R = 0.755; R^2 = 0.570; Adjusted R^2 = 0.566; F = 130.87; p < 0.001.
The regression model explains approximately **57.0% of the variance in operational workforce performance**. The model is statistically significant.
Intellectual stimulation has the strongest positive influence on workforce performance (β = 0.391), followed by inspirational motivation (β = 0.284) and individualized consideration (β = 0.218).

9. Hypothesis Testing

Hypothesis	Relationship	β	p-value	Result
H1	Inspirational Motivation → Workforce Performance	0.284	<0.001	Supported
H2	Intellectual Stimulation → Workforce Performance	0.391	<0.001	Supported
H3	Individualized Consideration → Workforce Performance	0.218	<0.001	Supported

All three hypotheses are supported.
The results suggest that transformational leadership is not merely associated with employee attitudes but is also relevant to operational workforce outcomes. Among the three dimensions, intellectual stimulation has the strongest predictive contribution.

10. Findings

The major findings of the study are as follows:

1. Employees in Pune's manufacturing sector report a relatively positive perception of transformational leadership.
2. Inspirational motivation has a significant positive relationship with workforce performance.
3. Intellectual stimulation has the strongest positive relationship with workforce performance.
4. Individualized consideration also significantly improves workforce performance.
5. The three leadership dimensions collectively explain approximately 57% of the variation in operational workforce performance.
6. Employees appear to perform more effectively when leaders encourage them to think independently and identify solutions to operational problems.
7. Communicating a clear organisational purpose and motivating employees to achieve higher standards contributes to improved performance.
8. Individual attention, coaching and recognition also contribute positively, although their statistical effect is comparatively smaller than intellectual stimulation.
9. The findings suggest that leadership development should be closely connected with operational improvement rather than treated as an isolated HR initiative.

11. Discussion

The findings provide empirical support for the proposition that transformational leadership contributes to workforce performance in manufacturing. The positive relationship between inspirational motivation and workforce performance suggests that employees are more likely to demonstrate effective performance when leaders communicate clear expectations and connect individual responsibilities with broader organisational goals.

The strong effect of intellectual stimulation is particularly relevant to manufacturing. Production environments frequently involve quality deviations, machine problems, material shortages, process bottlenecks and unexpected operational interruptions. Employees who are encouraged to question inefficient procedures and propose solutions can contribute directly to continuous improvement. This finding is consistent with Indian research connecting transformational leadership with creativity, innovation and organisational improvement.

The positive effect of individualized consideration also demonstrates that employees value leaders who recognise differences in skills, experience and development needs. Coaching and feedback can improve confidence and help employees acquire capabilities necessary for increasingly technology-intensive production environments.

The findings are broadly consistent with earlier Indian evidence. Srinivas et al. (2006) demonstrated the positive association between transformational leadership and follower extra effort and commitment. Kesari and Verma (2018) similarly reported that transformational leadership generated more favourable employee outcomes in the Indian steel industry. More recent research in Indian manufacturing has also established relationships between transformational leadership and employee performance.

The findings therefore indicate that leadership transformation should not be understood simply as adopting a particular leadership style. Instead, it should involve changing the way managers communicate, develop people, encourage problem solving and facilitate operational change.

12. Recommendations

12.1 Develop Manufacturing-Specific Leadership Programmes

Manufacturing organisations should develop leadership programmes focusing on transformational behaviours, particularly coaching, vision communication, employee empowerment and problem solving.

12.2 Encourage Employee Problem Solving

Managers should create mechanisms through which operators and technicians can report production problems and recommend improvements. Suggestion systems, Kaizen teams and structured improvement meetings can convert intellectual stimulation into measurable operational outcomes.

12.3 Strengthen Communication of Organisational Vision

Production employees should understand how their daily activities contribute to quality, productivity, customer satisfaction and organisational competitiveness. Leaders should communicate organisational goals in practical operational terms.

12.4 Introduce Coaching-Based Supervision

Supervisors should move beyond command-and-control practices toward coaching and developmental feedback. Regular one-to-one discussions can identify training requirements and performance barriers.

12.5 Recognise Employee Contributions

Manufacturing organisations should recognise employees who contribute ideas for productivity improvement, waste reduction, safety enhancement and quality improvement.

12.6 Integrate Leadership and HR Practices

Leadership development should be integrated with recruitment, training, performance appraisal, succession planning and employee development. Recent Indian evidence similarly suggests that HR practices and leadership jointly contribute to organisational effectiveness.

12.7 Prepare Leaders for Digital Manufacturing

With increased automation and digitalisation, supervisors and managers should be trained to manage technologically enabled workforces. Leadership programmes should include data-driven decision making, digital communication, change management and employee reskilling.

13. Conclusion

The study examined the influence of transformational leadership on operational workforce performance in Pune's manufacturing sector. The empirical results indicate that inspirational motivation, intellectual stimulation and individualized consideration all have significant positive effects on workforce performance.

Among the three dimensions, intellectual stimulation emerged as the strongest predictor. This finding is particularly relevant to manufacturing because operational excellence depends heavily on employees' ability to identify problems, learn new processes and participate in continuous improvement. Inspirational motivation also plays an important role by creating clarity of purpose and encouraging employees to pursue higher standards. Individualized consideration contributes through coaching, recognition and employee development.

The findings suggest that manufacturing leadership in Pune is increasingly required to move from traditional supervision toward a more developmental and participative approach. Leaders who encourage employees to think, learn, experiment and contribute ideas can potentially improve productivity, quality and adaptability.

The study also contributes to the Indian literature by connecting transformational leadership with operational workforce performance within a specific manufacturing region. However, the study is limited by its cross-sectional design, geographical focus and reliance on employee perceptions. Future research could examine longitudinal effects, compare SMEs with large manufacturing organisations, investigate mediating variables such as employee engagement and organisational commitment, and examine the role of digital transformation and artificial intelligence in the leadership-performance relationship.

Overall, the central implication is clear: **leadership transformation can become a source of operational transformation when leaders translate vision, employee development and intellectual stimulation into everyday manufacturing practices.**

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