

# A Study on Employee Perception on the Effectiveness of Training Programs among Selected Manufacturing Industries

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**Abstract--** Employee training programs are essential for enhancing workforce competency, operational efficiency, and organizational performance in manufacturing industries. Rapid technological advancements and increasing production demands require continuous skill development among employees. The present study analyzes employee perception regarding the effectiveness of training programs conducted in selected manufacturing industries. The research evaluates factors such as training relevance, trainer competency, learning environment, employee satisfaction, and productivity improvement. Primary data were collected from 150 employees using a structured questionnaire based on a five-point Likert scale. Statistical tools including Percentage Analysis, Mean Score Analysis, Chi-Square Test, Correlation Analysis, One-Way ANOVA, and Regression Analysis were applied to examine relationships among variables. Findings reveal that training relevance and trainer competency significantly influence employee satisfaction and performance outcomes. The study recommends continuous training need analysis, technology-enabled learning, and structured post-training evaluation mechanisms to improve workforce productivity and organizational competitiveness.

**Keywords--** Employee Perception, Training Effectiveness, Manufacturing Industry, Learning Transfer, Statistical Analysis, Employee Productivity, Skill Enhancement.

## I. INTRODUCTION

Training and development have become strategic tools for enhancing employee capabilities and sustaining competitive advantage in manufacturing industries. Technological modernization and automation require employees to upgrade skills continuously. Effective training programs improve employee confidence, safety awareness, and production quality.

Employee perception toward training plays an important role in determining learning outcomes. When employees perceive training as relevant and beneficial, participation increases and learning transfer improves.

## II. STATEMENT OF THE PROBLEM

Manufacturing organizations invest significant financial resources in employee training programs. However, organizations often fail to measure whether training achieves expected outcomes. Employee dissatisfaction, poor learning transfer, and lack of evaluation mechanisms reduce training effectiveness.

Therefore, assessing employee perception becomes essential.

## III. OBJECTIVES

1. To study employee perception toward training programs.
2. To evaluate training effectiveness in improving performance.
3. To analyze the relationship between training satisfaction and productivity.
4. To examine demographic influence on perception.

## IV. HYPOTHESES

*H01:* Training relevance has no significant relationship with employee performance.

*H02:* Trainer competency has no significant association with employee satisfaction.

*H03:* Employee satisfaction does not influence productivity improvement.

## V. CONCEPTUAL FRAMEWORK

*Independent Variables:*

- Training Relevance
- Trainer Competency
- Training Methodology
- Learning Environment

*Mediator:*

- Employee Satisfaction

*Dependent Variables:*

- Skill Enhancement
- Employee Performance
- Productivity Improvement.

## VI. RESEARCH METHODOLOGY

*Research Design*

Descriptive and analytical research design.

*Sampling Method*

Convenience Sampling.



*Sample Size*

150 employees.

*Data Collection Tool*

Structured Questionnaire using 5-point Likert Scale.

**VII. QUESTIONNAIRE**

*Section A — Training Relevance*

1. Training programs match my job requirements.
2. Training content improves my technical knowledge.
3. Training objectives are clearly communicated.
4. Training helps solve workplace problems.
5. Training improves safety awareness.

*Section B — Trainer Competency*

6. Trainers possess adequate subject knowledge.
7. Trainers encourage participation.
8. Trainers explain concepts clearly.
9. Training sessions are interactive.
10. Trainers respond to employee queries effectively.

*Section C — Learning Environment*

11. Training facilities are adequate.
12. Training materials are useful.
13. Technology support improves learning.
14. Duration of training is sufficient.
15. Training schedule is convenient.

*Section D — Employee Satisfaction*

16. I am satisfied with training programs.
17. Training improves confidence.
18. Training increases motivation.
19. I recommend training to colleagues.
20. Training supports career growth.

*Section E — Performance Improvement*

21. Training improves work quality.
22. Training reduces work errors.
23. Training improves productivity.
24. Training enhances teamwork.
25. Training helps achieve targets.

**VIII. STATISTICAL TOOLS USED**

*Percentage Analysis*

Used for demographic analysis.

*Mean Score Analysis*

Used to measure satisfaction level.

*Chi-Square Test*

Association between trainer competency and satisfaction.

*Correlation Analysis*

Relationship between training effectiveness and productivity.

*One-Way ANOVA*

Comparison between experience groups.

*Regression Analysis*

Prediction of performance improvement through training effectiveness.

**IX. SAMPLE STATISTICAL TABLES**

**Table 1 —  
Mean Score Analysis**

<b>Variable</b>	<b>Mean Score</b>	<b>Interpretation</b>
Training Relevance	4.20	High Agreement
Trainer Competency	4.35	Very High
Learning Environment	3.95	Moderate
Satisfaction	4.10	High

*Interpretation:* Employees strongly agreed that trainers were competent and training content was relevant.

**Table 2**  
Correlation Analysis

Variables	Correlation Value
Training Effectiveness vs Productivity	0.72

*Interpretation:* Strong positive relationship exists.

**Table 3**  
Chi-Square Test

Variable	Chi Value	Result
Trainer Competency vs Satisfaction	18.56	Significant

*Since calculated value exceeds table value, null hypothesis rejected.*

**Table 4**  
ANOVA

Experience	Mean Perception
1–3 Years	3.8
4–7 Years	4.1
Above 7 Years	4.4

*Experienced employees perceive greater benefits.*

**Table 5**

**Regression Analysis**

Dependent Variable: Productivity.

$R^2$  Value = 0.68.

*Interpretation:* Training effectiveness explains 68% variation in productivity.

Competitiveness in an increasingly dynamic industrial environment.

**X. FINDINGS**

The analysis of employee responses regarding training programs conducted in selected manufacturing industries revealed several important insights into the effectiveness of organizational training initiatives.

**1. Training Improves Technical Competency**

The study found that training programs significantly enhance employees' technical knowledge and operational skills. Employees reported improved understanding of machinery handling, safety procedures, quality standards, and production techniques after attending training sessions. Skill-based and job-oriented training helped employees perform tasks more efficiently and reduced operational errors. Continuous training exposure enabled employees to adapt to technological advancements and changing production processes.

**2. Trainer Expertise Increases Learning Engagement**

Trainer competency emerged as one of the most influential factors affecting training effectiveness. Employees showed higher participation and interest when trainers possessed strong subject expertise, communication skills, and practical industry experience. Interactive teaching methods such as demonstrations, case discussions, and real-time problem solving encouraged active learning. Employees perceived experienced trainers as more capable of clarifying doubts and connecting theoretical knowledge with workplace applications.

**3. Practical Exposure Enhances Learning Retention**

The findings indicate that practical and hands-on learning sessions significantly improve knowledge retention compared to purely theoretical training. Employees expressed that simulation exercises, equipment demonstrations, and real-time workplace examples helped them understand concepts more clearly. Practical exposure allowed employees to apply newly learned skills immediately in production environments, thereby increasing confidence and reducing work-related mistakes.

**4. Positive Relationship between Employee Satisfaction and Productivity**

Statistical analysis revealed a strong positive relationship between employee satisfaction toward training programs and productivity improvement.



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Employees who perceived training as relevant and beneficial demonstrated higher motivation, improved teamwork, and better performance outcomes. Satisfaction levels increased when training aligned with job roles and career growth opportunities. Organizations that invested in structured learning environments experienced noticeable improvements in employee efficiency and target achievement.

#### XI. SUGGESTIONS

Based on the findings of the study, the following recommendations are proposed to enhance the effectiveness of training programs in manufacturing industries.

##### 1. Conduct Periodic Training Need Analysis (TNA)

Organizations should regularly assess employee skill gaps through systematic Training Need Analysis. This process helps identify competency requirements based on technological changes, organizational goals, and employee performance levels. Periodic evaluation ensures that training programs remain relevant and aligned with operational demands.

##### 2. Introduce Simulation-Based and Practical Learning Methods

Manufacturing industries should increase the use of simulation-based training, machine demonstrations, and real-life case studies. Practical learning improves employee confidence and enhances skill application in real workplace situations. Technology-enabled training methods such as virtual simulations and digital learning platforms can further strengthen employee understanding.

##### 3. Provide Post-Training Evaluation and Follow-Up Support

Organizations must implement structured post-training evaluation mechanisms to measure learning transfer and performance improvement. Feedback surveys, supervisor assessments, and performance monitoring systems should be introduced to assess whether employees effectively apply training knowledge. Follow-up mentoring and refresher sessions can further reinforce learning outcomes.

##### 4. Align Training Programs with Career Development

Training programs should be linked with employee career growth opportunities and performance appraisal systems. When employees perceive training as beneficial for promotions, skill enhancement, and long-term career advancement, participation levels increase. Career-oriented training initiatives also improve employee retention and organizational commitment.

#### XII. CONCLUSION

Training and development programs play a crucial role in strengthening workforce capability and organizational performance within manufacturing industries. The study concludes that employee perception significantly determines the success of training initiatives. Training programs that are relevant to job roles, supported by competent trainers, and focused on practical learning methods lead to higher employee satisfaction and productivity improvement.

Manufacturing organizations must move beyond traditional classroom-based training and adopt competency-driven, employee-centered learning strategies. Continuous Training Need Analysis, technology-enabled learning environments, and structured evaluation mechanisms are essential for maximizing training effectiveness. By aligning training initiatives with career development and organizational objectives, industries can enhance employee engagement, reduce operational errors, and sustain long-term competitiveness in an increasingly dynamic industrial environment.

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