IARJSET ISSN (O) 2393-8021, ISSN (P) 2394-1588

International Advanced Research Journal in Science, Engineering and Technology

Impact Factor 8.066 ⁜ Peer-reviewed & Refereed journal ⁜ Vol. 12, Issue 4, April 2025

DOI: 10.17148/IARJSET.2025.12450

TRAINING NEEDS ANALYSIS AT MONTRA ELECTRIC BRIDGING SKILL GAPS TO ENHANCE EMPLOYEE PERFORMANCE AND ORGANIZATIONAL EFFICIENCY

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Abstract: This study investigates the role of Training Needs Analysis (TNA) in identifying and addressing employee skill gaps at Montra Electric, a key player in India's electric vehicle sector. By examining workforce demographics, training patterns, and skill development outcomes, the research assesses how targeted training interventions influence individual performance and organizational efficiency. The findings reveal a strong preference for leadership and problem-solving training, with most employees acknowledging the effectiveness of recent development programs. However, the study also identifies barriers such as lack of management support and relevance misalignment. Recommendations include role-specific skill mapping, training customization, and continuous feedback integration. The study contributes to understanding how TNA serves as a strategic tool to enhance workforce capabilities in a rapidly evolving industry.

Keywords: Skill gaps, Training Needs Assessment, employee performance, organizational efficiency, electric mobility, Montra Electric.

I. INTRODUCTION

In today's rapidly evolving industrial landscape, the automotive industry remains a cornerstone of economic progress and technological innovation. As India advances toward sustainable mobility, the electric vehicle (EV) segment has emerged as a vital driver of growth and environmental transformation. This shift places increasing emphasis not only on technological excellence but also on organizational efficiency and workforce capability.

The success of automotive enterprises now depends as much on cutting-edge engineering as it does on the ability of employees to adapt to changing job demands. Amid intensifying competition and fast-paced innovation, bridging skill gaps through strategic training has become essential to sustaining high performance standards.
This study explores how Training Needs Analysis (TNA) can serve as a catalyst for enhancing employee performance and boosting organizational productivity within the automotive sector. By leveraging quantitative data and workforce insights, it identifies critical competencies, assesses current training practices, and examines the relationship between skill development and operational outcomes—ultimately providing a roadmap for building a future-ready workforce in the evolving automotive landscape.

Statement of the Problem

Despite ongoing training initiatives, Montra Electric faces performance variations due to evolving role requirements and misaligned skill sets. The study seeks to explore whether TNA can bridge this gap by aligning training programs with actual job demands and organizational goals.

Objectives

- To identify the current skill gaps across different departments at Montra Electric.
- To analyze the effectiveness of training programs on employee performance.
- To evaluate the relevance, frequency, and perception of training sessions.
- To propose improvements to the training system based on employee feedback and performance outcomes.

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Research Questions:

1. What are the critical skill gaps present among employees across departments at Montra Electric?
2. How effective are the existing training and development programs in addressing these identified skill gaps?
3. What is the perceived relevance of the training content to employees' job roles and responsibilities?
4. How do skill development initiatives impact employee performance indicators such as quality of work, productivity, and job satisfaction?
5. What are the primary barriers that hinder the successful implementation and impact of training programs?

Hypotheses:

1. H1: Employees who perceive training as highly relevant to their job roles report higher levels of productivity improvement.
2. H2: There is a significant difference in formal training participation based on employee demographics such as gender and experience level.
3. H3: Greater supervisor involvement post-training leads to higher confidence in applying newly acquired skills.
4. H4: Employees who report improvements in soft skills (e.g., time management, communication) also report enhanced workflow efficiency.
5. H5: Perceived inadequacies in training design and delivery (e.g., lack of relevance, poor engagement) are significantly associated with neutral or negative training outcomes.

Significance of the Study

The study provides actionable insights to optimize training at Montra Electric, helping align employee development with strategic goals. It supports data-driven decisions to enhance performance, retention, and workforce readiness in the evolving electric vehicle sector.

II. LITERATURE REVIEW

Several researchers have explored the impact of Training Needs Analysis (TNA) on workforce performance and organizational success. Robert and Mori (2024) highlighted that technical skills significantly mediate the link between training intensity and performance, stressing the need for alignment with existing employee competencies. Alzahmi and Alshamsi (2024) found that clear training goals and impact evaluations enhance satisfaction and productivity, especially when tied to career advancement. Kura and Kaur (2021) emphasized that although TNA methods like task and competency-based assessments are effective, they are often underused due to time constraints and lack of expertise. Misra and Mohanty (2020) linked leadership development with improved communication and management efficiency, while Manjunath and Shravan (2020) concluded that soft skills such as communication and decision-making often have greater influence on performance than technical abilities. Despite these findings, most studies lack a focus on industrial environments, particularly India's electric vehicle (EV) sector. This study addresses that gap by applying TNA at Montra Electric, evaluating training relevance and impact using statistical tools like Chi-square and regression. It offers practical insights into designing effective training strategies tailored to the dynamic needs of the EV manufacturing workforce.

Research Gap

There is a lack of research on integrating technical, digital, and soft skills in Training Needs Assessment (TNA) to address evolving skill gaps across industries. Current studies overlook the need for dynamic training updates and fail to explore the link between leadership development and organizational efficiency.

III. RESEARCH METHODOLOGY

Research Design

This study employs a descriptive research design.

Sampling Technique

Census Sampling Technique

Data Analysis Tools

To analyze the collected data, the study will use:

- ANOVA (analysis of variance)
- Chi - Square Test
- Correlation Analysis
- Regression Analysis
- PercentageAnalysis

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Tools used

- Software: SPSS

Correlation Analysis:

		On a scale of 1-5, how much has training improved your productivity	How confident are you in applying newly acquired skills in your daily work
On a scale of 1-5, how much has training improved your productivity	Pearson Correlation	1	.546**
	Sig. (2-tailed)		.000
	N	103	103
How confident are you in applying newly acquired skills in your daily work	Pearson Correlation	.546**	1
	Sig. (2-tailed)	.000	
	N	103	103

- Statistical Techniques: Correlation, ANOVA, Regression, Chi - Square Test

Ethical Considerations

All participants provided informed consent. Responses were anonymous and confidential.

IV. RESULTS

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.638[a]	1	.425		
Continuity Correction[b]	.150	1	.699		
Likelihood Ratio	.583	1	.445		
Fisher's Exact Test				.421	.328
Linear-by-Linear Association	.632	1	.427		
N of Valid Cases	103				

The Chi-Square test results provide insight into whether a statistically significant relationship exists between the two categorical variables under analysis. The **Pearson Chi-Square value is 0.638**, with a **p-value of 0.425**, which is well above the commonly accepted significance level of 0.05. This indicates that the association between the variables is **not statistically significant**, meaning any observed relationship may be due to random chance rather than a meaningful connection.

The **Continuity Correction**, used when analyzing 2x2 contingency tables to adjust for small sample bias, yields a value of 0.150 with a **p-value of 0.699**, further supporting the lack of significance. Similarly, the **Likelihood Ratio** test shows a value of 0.583 with a **p-value of 0.445**, which aligns with the Pearson result and confirms the absence of a significant relationship.

Additionally, **Fisher's Exact Test**, which is particularly useful for small sample sizes or where expected cell frequencies are low, also yields non-significant p-values (**0.421 for two-sided** and **0.328 for one-sided tests**). The **Linear-by-Linear Association** value of 0.632 with a **p-value of 0.427** indicates no trend or directional relationship.

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ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.109	1	.109	.169	.682
Within Groups	65.231	101	.646		
Total	65.340	102			

The correlation analysis examines the relationship between employees' perceived improvement in productivity due to training and their confidence in applying newly acquired skills in daily work. The **Pearson correlation coefficient is 0.546**, which indicates a **moderate to strong positive correlation** between the two variables. This means that as employees feel more confident in applying new skills, they are also more likely to perceive an increase in their productivity as a result of the training.

The **p-value is 0.000**, which is highly significant ($p < 0.01$), confirming that this relationship is **statistically significant** and not due to random chance. With a sample size of **103 respondents**, the results provide strong evidence that effective training not only boosts skill confidence but also positively influences productivity perceptions.

The p-value obtained from the ANOVA test is **0.682**, which is greater than the significance level of **0.05**. Since the p-value is high, we **fail to reject the null hypothesis**. This means that there is **no significant difference** in how male and female employees perceive the impact of training on their productivity.

V. REGRESSION

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.008[a]	.000	-.010	.8043

a. Predictors: (Constant), htly

The coefficient table (0.936) indicates that there is no significant relationship between training relevance and employee

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.004	1	.004	.007	.936[b]
	Residual	65.336	101	.647		
	Total	65.340	102			

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.544	.253		14.001	.000
	htly	.008	.098	.008	.081	.936

productivity. The F-value in the ANOVA table is 0.007, which is less than 1.96, confirming that training relevance does not have a statistically significant influence on employee productivity.
The R Square value is 0.000, meaning that 0% of the variance in employee productivity is explained by training relevance.

Regression Equation:

$Y = a + bx$
$Y = 3.544 + 0.008$ (Training Relevance)
This equation indicates that for every unit increase in training relevance, employee productivity increases by 0.008.

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VI. FINDINGS

The findings of the study indicate that employees at Montra Electric generally perceive the training and development programs positively, particularly in areas related to skill enhancement and workflow efficiency.

A significant proportion of respondents reported that training improved the quality of their work, decision-making, and problem-solving abilities. Moreover, the majority felt confident in applying newly acquired skills and acknowledged that improved skills have led to smoother departmental workflows and cost reduction.

However, perceptions regarding the **effectiveness and relevance of training** show variability across departments and roles. While many respondents found training "very relevant" to their job functions, a notable segment considered it only "moderately" or "slightly relevant," pointing to **inconsistencies in alignment between training content and specific job tasks**. This suggests opportunities for better customization of training modules.

RECOMMENDATION

- **Customized Training:** Introduce department-specific training modules based on skill assessments.
- **Feedback Loops:** Include post-training performance tracking and employee suggestions for future topics.
- **Quarterly Cycles:** Adopt the preferred frequency (46.6%) of quarterly training sessions.
- **Enhanced Engagement:** Use interactive methods like gamification, real-case projects, and cross-functional simulations.
- **Supervisor Involvement:** Encourage coaching and mentoring from supervisors post-training to maximize transfer of learning.

LIMITATIONS

- Data is based on self-reported responses, which may be subject to personal bias or inaccuracies.
- The study uses a cross-sectional design, limiting the ability to establish causal relationships.
- Lack of in-depth departmental analysis restricts understanding of training effectiveness across different functions.
- External factors influencing training impact, such as organizational culture or managerial support, were not explored.

FUTURE RESEARCH DIRECTIONS

- Conduct a longitudinal study to evaluate how training impacts employee performance and retention over time.
- Expand the research to include multiple units or locations within the organization for broader generalizability.
- Incorporate qualitative methods such as interviews or focus groups to gain deeper insights into training experiences.
- Compare training outcomes between departments (e.g., Sales vs. Production) to identify function-specific needs.
- Investigate the role of managerial support and organizational culture in enhancing training effectiveness.

VII. CONCLUSION

The study on Training Needs Analysis at Montra Electric highlights the critical role of structured training programs in enhancing employee skills, confidence, and overall organizational efficiency. While most employees view training initiatives positively—especially in terms of improving work quality and problem-solving abilities—the study also reveals gaps in training relevance and alignment with job-specific requirements.

Statistical findings show a moderate correlation between perceived training effectiveness and confidence in skill application. However, the lack of a significant impact on measurable productivity suggests that training outcomes may depend on additional factors such as implementation quality, managerial support, and follow-up mechanisms.

Overall, the study emphasizes the need for more targeted, department-specific, and feedback-driven training approaches. By addressing these areas, Montra Electric can further bridge skill gaps, improve employee performance, and strengthen its position in the rapidly evolving electric vehicle sector.

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