

Research Article

Training Need Analysis of Employees and its Impact in an Manufacturing Industry

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Abstract

This research examines the Training Need Analysis (TNA) of employees in the manufacturing industry, with a focus on a reputed company in Hosur. In the ever-evolving manufacturing landscape, the continuous development of employees' skills and knowledge is paramount for organizational success. This abstract delves into the significance of conducting comprehensive Training Need Analysis (TNA) for employees in the manufacturing industry using a descriptive research methodology and a sample of 100 employees. Hypotheses are formulated to analyze relationships among various factors. The research perseveres, employing the Likert scale for data collection and ensuring tool validity through pre-testing. It highlights the importance of identifying skill gaps, understanding employee performance, and aligning training initiatives with organizational goals. The purpose of this article is to offer insights and useful suggestions for putting into practice efficient TNA procedures in order to improve employee efficiency and support the overall growth of manufacturing industries.

Keywords: Training need analysis, skill gap analysis, performance improvement, employee performance.

Introduction

Training need Analysis is a crucial process within the part of training and development. It entails evaluating and determining each person's, a team's, or the organization's overall unique training needs. Organizations utilize the methodical process of Training Needs Analysis (TNA) to find gaps in the skills, knowledge, and competencies of their workforce. It is an essential place to start when creating training curricula that work. Businesses can increase employee performance, boost overall productivity, and match their training efforts with specific organizational goals by undertaking a training needs analysis (TNA). During this process, a variety of techniques, including surveys, interviews, and performance reviews, are used to collect information and insights that will assist businesses decide what kind and how much training is necessary. It entails evaluating the workforce's present condition and figuring out what kind of training and development are needed to close those gaps. TNA is essential in making sure that training programs support employees in gaining the skills they need to do their jobs well and are in line with corporate objectives. It usually entails gathering and analyzing data as well as creating customized training curricula to improve performance on both an individual and organizational level.

In the industrial sector, Training Needs Analysis (TNA) is an essential procedure to guarantee that workers have the abilities and know-how required to succeed in their positions. The importance of TNA in this industry, which is frequently marked by rapidly developing technologies and exacting quality standards, cannot be emphasized. This analysis entails evaluating the workforce's gaps and present competencies, which will ultimately result in training programs that are specifically designed to improve performance, safety, and productivity. We will explore the essential elements of training needs assessment (TNA) in the industrial sector, its significance, and the techniques used to carry out an exhaustive evaluation of training needs in this talk.

Training Needs Analysis (TNA) is important in commercial and industrial contexts, as Susan Denby's 2010 article in *Industrial and Commercial Training* highlights. By assisting in the identification of skill gaps and needs for staff development, TNA fosters employee engagement, job satisfaction, productivity, and organizational growth. It is imperative to employ a methodical strategy that encompasses data gathering, analysis, and evaluation. Performance evaluations, observations, interviews, surveys, and other TNA methods are covered.

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Implementing TNA presents a number of challenges, including limited resources, schedule conflicts, and opposition to change. The significance of TNA for individuals and businesses is emphasized throughout the essay, rendering it beneficial for professionals in training, human resources, and business administration. This book offers a concise synopsis of the literature review for the training needs assessment methods, tools, and strategies article by Barbazette (2006). The procedure for firms to determine employee skill gaps and growth requirements is emphasized in the essay. It emphasizes how important it is to get accurate and practical results by using the right tools, approaches, and procedures. The author discusses a variety of techniques, including SWOT analysis, job analysis, performance evaluation, and focus groups in addition to instruments like surveys, interviews, and observation. The essay also emphasizes how employee involvement, company culture, and resources all play a part in the assessment process. It recommends regular evaluations and ongoing enhancements for successful training initiatives.

A comprehensive evaluation of the research is given in Chandrasekaran's 2013 study on the efficacy of training in the manufacturing sector, which emphasizes the importance of training and the difficulties that businesses confront. The study discusses several training approaches, their benefits and drawbacks, and the function of human resource management. It also discusses the necessity for adaptable training programs as well as how technology improvements and globalization have affected the industrial industry. In order to comprehend and meet the training demands in the sector, academics, researchers, and professionals can all benefit greatly from this study.

In a study on Training Need Analysis and Its Impact with Regard to Training and Development Activities in Automobile Firms in Chennai," Mohammed Nasrullah (2021) examines the significance of Training Need Analysis (TNA) in the automotive sector, particularly in Chennai, India-based firms. The importance, techniques, and effects of TNA on training and development initiatives are covered in the literature review. It also emphasizes how technology may improve training initiatives and the difficulties automakers have when putting TNA into practice. The study's overall findings highlight the necessity of efficient TNA in order to guarantee that workers possess the abilities and know-how required to thrive in the automotive industry.

The present study on the examination of employees' training needs in the manufacturing industry is important for a number of reasons. Effective training programs that meet the needs for employees can improve performance, reduce mistakes, and increase productivity in the industrial Sector.

Effective training programs give businesses a competitive advantage by improving worker competencies and, in turn, the quality of products or services, time to market, and customer satisfaction. Labor expenses can be decreased through programs of training that decrease the need for supervision, reduce chances of employee mistakes and accidents, and reduce staff turnover. Efficient training initiatives that give employees the necessary skills to acquire and apply new technologies and procedures support innovation in the manufacturing sector. Training programs are essential for ensuring compliance with business-specific regulations, safety guidelines, and quality requirements in the manufacturing industry. Carefully planned training programs that address the requirements and goals of employees improve satisfaction with work, motivation, and retention in the industrial sector. This study was aimed to analyze and understand the training need analysis of employees in the manufacturing industry with the following objectives.

- To study the overall implication Training need analysis of employees in the manufacturing industry.
- To identify the deficiency in current employee performance and skills related to their job roles and tasks.
- To determine the training needs of employees to enhance their productivity and efficiency.
- To identify the skill gaps and areas of improvement of employees.

Methodology

Research design: The researcher used the descriptive research design. The descriptive research technique uses various kinds of methods to understand and explore a study topic. Because the goal of this study is to understand the training needs of employees in the manufacturing industry, the researcher will utilize a descriptive methodological technique to determine the components leading to the analysis of the training needs of workers.

Universe & sampling: The researcher has selected the manufacturing industry located at Hosur. The researcher is used Probability sampling design. The probability sampling design (disproportionate sampling) will be adopted by the researcher. Probability sampling, also called as random sampling or chance sampling The researcher will gather data from the whole universe of manufacturing industry Hosur which has a population of 1500 employees, and the actual data collection is likely to be done with a sampling size is 100.

Tools of data collection: The researcher used questionnaire model by adopting the Likert scale because the questionnaire model is one of the good methods in which the respondents would read and understand easily and give their answers in an effective manner.

Table 1. Distribution of respondents based on training need analysis.

Overall training need analysis	Low	Percentage	High	Percentage
Organizational analysis	51	51.0	49	49.0
Individual analysis	65	65.0	35	35.0
Performance gap analysis	57	57.0	43	43.0
Task analysis	63	63.0	37	37.0
Environmental analysis	62	62.0	38	38.0
Future analysis	53	53.0	47	47.0
Preference for improvement	75	75.0	25	25.0
Overall training need analysis	54	54.0	46	46.0

Table 2. 't'-test between gender of the respondents and TNA.

Gender of the Respondents		Mean	Std. Deviation	Std. Error Mean	Df	Sig. (2-tailed)
Organizational Analysis	Male (5)	43.80	1.095	.490	98	't'= 0.805 P>0.05 Not Significant
	Female (95)	43.11	6.234	.640	26.037	
Individual Analysis	Male (5)	30.60	.548	.245	98	't'= 0.544 P>0.05 Not Significant
	Female (95)	29.40	4.382	.450	51.478	
Performance gap analysis	Male (5)	27.20	1.643	.735	98	't'= 0.004 P < 0.05 Significant
	Female (95)	21.36	4.337	.445	7.428	
Task analysis	Male (5)	30.40	.548	.245	98	't'= 0.776 P>0.05 Not Significant
	Female (95)	30.98	4.505	.462	54.046	
Environmental Analysis	Male (5)	26.60	2.191	.980	98	't'= 0.270 P>0.05 Not Significant
	Female (95)	28.32	3.415	.350	5.085	
Future analysis	Male (5)	28.80	1.643	.735	98	't'=0.494 P>0.05 Not Significant
	Female (95)	27.55	4.047	.415	6.932	
Preference for improvement	Male (5)	8.00	1.225	.548	98	't'= 0.524 P>0.05 Not Significant
	Female (95)	7.64	1.220	.125	4.428	
Overall Total	Male (5)	195.40	3.050	1.364	98	't'=0.399 P>0.05 Not Significant
	Female (95)	188.35	18.502	1.898	29.758	

The research questions will be both open-ended & conclusion. These questions were framed based on the specific objectives of the research. The reliability of the tool was found to be 0.750 Cronbach's alpha.

Results and discussion

The presented Table 1 shows that a little more than half (51%) of the respondents are low level of knowledge in organizational analysis. A slightly less than half (49%) of the respondents are High level of knowledge in organizational analysis. This indicates that there is a relatively balanced need for improvement in organizational analysis.

Significant majority (65%) of the respondents have a low level of understanding in Individual analysis and more than one-third (35%) of the respondents are high level of understanding in Individual analysis. It indicates that recognizing and meeting each person's unique training needs is given more importance. Less than majority (57%) of the respondents is low level of performance gap analysis. More than two-fifth (37%) of the respondents are high level of performance gap analysis. This shows a relatively balanced need for improvement in this area. More than majority (63%) of the respondents is lack of awareness about their tasks. Less than two-fifth (37%) of the respondents are high level of aware about their tasks.

This highlights how crucial it is to comprehend and evaluate activities in order to provide successful training. Majority (62%) of the respondents are low level in Environmental analysis and more than one-third (38%) of the respondents are high level of environmental analysis. This clearly indicates that the organization recognizes the significance of considering environmental factors while designing training programs. More than half (53) of the respondents are low level about their future analysis and less than half (47%) of the respondents are high level of future analysis. This indicates a moderate need for improvement in predicting future training needs. Three-fourth (75%) of the respondents are low level of clear about organization's improvement and one-fourth (25%) of the respondents are high level of clear about organization's improvement. More than half (54%) of the respondents rated the overall training need analysis as low and more than two-fifth (46%) of the respondents are rated it as high. So, it was suggesting that there is a need to further enhance the overall training needs analysis process. The presented Table 2 states that there is a significant difference between the of the Gender respondents of performance gap analysis. And also, there is no significant difference between the male and female of the respondents' dimensions of the study include Organizational analysis, Individual analysis, task analysis, Environmental analysis Future analysis and performance for Improvement.

Ho: There is no significant difference between the gender of the respondents and their Performance Gap Analysis.

H1: There is significant difference between the gender of the respondents of Training need Analysis.

Result: The t-test was applied. It is found that there is significant difference between the gender of the respondents and their Performance Gap Analysis. Hence the research Hypothesis is accepted and the null Hypothesis is rejected.

The presented Table 2 reveals that there is a significant difference among the domicile of the respondents and the dimensions of the study include, performance gap analysis and Environmental analysis. And also it is evident that there is no significant difference among the domicile of the respondents and the following dimensions are Organizational Analysis, Individual Analysis, Task Analysis, future Analysis and performance for improvements.

Ho: There is no significant difference among the Educational Qualification of the respondents and Training need Analysis.

H1: There is a significant difference among the Educational Qualification of the respondents and Training need Analysis.

Test Type: F-Test.

Result: The F-test was applied. It is found that there is a significant difference among the Educational Qualification of the respondents of Training need Analysis. Hence the research Hypothesis is accepted and the null hypothesis is rejected.

The presented data in Table 3 reveals that there is a significant difference among the domicile of the respondents and the dimensions of the study include, performance gap analysis and Environmental analysis. And also, it is evident that there is no significant difference among the domicile of the respondents and the following dimensions are Organizational Analysis, Individual Analysis, Task Analysis, future Analysis and performance for improvements.

Ho: There is no significant difference among the Educational Qualification of the respondents and Training need Analysis.

H1: There is a significant difference among the Educational Qualification of the respondents and Training need Analysis.

Test Type: F-Test

Result: The F-test was applied. It is found that there is a significant difference among the Educational Qualification of the respondents of Training need Analysis. Hence, the research Hypothesis is accepted and the null hypothesis is rejected.

The Table 4 states that there is a significant relationship between the experience of the respondents and the dimensions of the study includes Individual Analysis, Task Analysis Environmental Analysis, Future Analysis, and Preference for improvement and over all factor. The analysis also reveals that there is no significant relationship between the experience of the respondents and the dimensions of the study which includes Organizational Analysis and Performance Gap Analysis.

Ho: There is No significant relationship between the Experience of the respondents and Training need Analysis.

H1: There is no Significant relationship between the Experience of the respondents of Training need Analysis.

Test Type: Correlation

Result: The correlation was applied. It is found that there is a significant relationship between the Experience of the respondents of Training need Analysis. Hence the research hypothesis is accepted and the null hypothesis is rejected.

Table 3. F-Test based on the educational qualification of the respondents and training need analysis.

Factors		Sum of Squares	df	Mean Square	F	Sig.
Organizational Analysis	Between Groups	91.646	3	30.549	.822	Sig. =0.485 P> 0.05 Not Significant
	Within Groups	3568.394	96	37.171		
	Total	3660.040	99			
Individual Analysis	Between Groups	100.850	3	33.617	1.885	Sig. =0.137 P> 0.05 Not Significant
	Within Groups	1711.990	96	17.833		
	Total	1812.840	99			
Performance Gap Analysis	Between Groups	120.947	3	40.316	2.127	Sig. =0.102 P> 0.05 Not Significant
	Within Groups	1819.803	96	18.956		
	Total	1940.750	99			
Task Analysis	Between Groups	62.801	3	20.934	1.087	Sig. =0.358 P> 0.05 Not Significant
	Within Groups	1847.949	96	19.249		
	Total	1910.750	99			
Environmental Analysis	Between Groups	5.150	3	1.717	.147	Sig. =0.932 P> 0.05 Not Significant
	Within Groups	1124.560	96	11.714		
	Total	1129.710	99			
Future Analysis	Between Groups	23.471	3	7.824	.490	Sig. =0.690 P> 0.05 Not Significant
	Within Groups	1534.319	96	15.982		
	Total	1557.790	99			
Preference for Improvement	Between Groups	5.166	3	1.722	1.170	Sig. =0.325 P> 0.05 Not Significant
	Within Groups	141.274	96	1.472		
	Total	146.440	99			
Overall Total	Between Groups	208.864	3	69.621	.207	Sig. =0.891 P> 0.05 Not Significant
	Within Groups	32242.136	96	335.856		
	Total	32451.000	99			

Table 4. Correlation test based on the experience of the respondents and training need analysis.

Variable	Correlation Value	Statistical Inference
Organizational Analysis	0.090	P > 0.05 Not Significant
Individual Analysis	0.315**	P < 0.05 Significant
Performance Gap Analysis	0.145	P > 0.05 Not Significant
Task Analysis	0.262**	P < 0.05 Significant
Environmental Analysis	0.221*	P < 0.05 Significant
Future Analysis	0.198*	P < 0.05 Significant
Preference for Improvement	0.038	P < 0.05 Significant
Overall TNA	0.220*	P < 0.05 Significant

** . Correlation is significant at the 0.01 level (2-tailed), * . Correlation is significant at the 0.05 level (2-tailed).

Table 5. Correlation test based on the age of the respondents and training need analysis..

Variable	Correlation Value	Statistical Inference
Organizational Analysis	0.100	P > 0.05 Not Significant
Individual Analysis	0.166	P > 0.05 Not Significant
Performance Gap Analysis	0.035	P > 0.05 Not Significant
Task Analysis	0.058	P > 0.05 Not Significant
Environmental Analysis	0.003	P > 0.05 Not Significant
Future Analysis	0.048	P > 0.05 Not Significant
Preference for Improvement	0.176	P > 0.05 Not Significant
Overall TNA	0.027	P > 0.05 Not Significant

** . Correlation is significant at the 0.01 level (2-tailed), * . Correlation is significant at the 0.05 level (2-tailed).

The Table 5 states that there is no significant relationship between the age of the respondents and the dimensions of the study which includes Organizational Analysis, Individual Analysis, Performance Gap Analysis, Task Analysis, Environmental Analysis, Future Analysis , preference for improvement and Over all factor.

H₀: There is No significant relationship between the age of the respondents and Training need Analysis.

H₁: There is no significant relationship between the age of the respondents of Training need Analysis.

Test Type: Correlation.

Result: The correlation was applied. It is found that there is a significant relationship between the age of the respondents of Training need Analysis. Hence the null hypothesis is accepted.

Suggestions

The recommendations of this study are based on some of the major findings. Additionally, these studies have shown the importance of training need analysis.

Suggestions for the Organizations

- Organize frequent training sessions to improve employees' skills, knowledge and abilities, especially in areas where they perform poorly.
- Promote gender equality and provide chances for employees with varying experiences and backgrounds to foster a diverse workforce.
- Invest in the professional development of your staff by giving them access to tools for learning and career progression.
- Encourage a culture of ongoing training and development to keep employees inspired and involved.
- Work together with other institutions or organizations to provide possibilities for advanced training and growth.
- Update the training programs in accordance with the organization's ongoing assessment of its training needs.

Suggestions for Employees

- Utilize the organization's training opportunities to advance your knowledge and abilities.
- Be willing to pick up tips from coworkers and ask for criticism to find areas that need work.
- Actively engage in training sessions and use the knowledge they have gained in their day-to-day job.
- Have a growth mentality and take the initiative to determine their own training requirements.
- To create a cooperative and encouraging work atmosphere, employees should share their knowledge and skills with one another.
- Work on your professional and personal development constantly to stay current with best practices and industry trends.

Suggestions for the training and development team

- Develop a strong understanding of the organization's goals and objectives to ensure that training programs align with them.
- To make sure that training programs are in line with the organization's goals and objectives, gain a thorough understanding of them.

- Provide interactive, engaging training sessions that accommodate a range of learning preferences and styles.
- To make adjustments, keep an eye on and assess training programs' efficacy on a regular basis.
- Work together with other teams, including management and HR, to make sure that training programs are implemented and followed up on smoothly.
- Provide a variety of in-person and online training options to suit varying schedules and preferences. Invite employee feedback and make use of it to improve the level of upcoming training programs.

Conclusion

In conclusion, the training need analysis for employees in the manufacturing industry is crucial to ensure their growth, productivity, and safety. This process involves identifying gaps in knowledge, skills, and competencies, as well as understanding the organization's goals and objectives. The analysis should consider various factors such as job roles, experience levels, and performance metrics. By conducting a comprehensive training need analysis, organizations can develop targeted training programs that address specific issues and foster a culture of continuous learning. This will ultimately lead to improved employee performance, increased job satisfaction, and a more competitive edge in the industry. Moreover, the analysis should be an ongoing process, regularly updated to reflect changes in the industry, technology, and employee needs. This ensures that the training remains relevant and effective in meeting the evolving demands of the manufacturing sector. In summary, a well-executed training need analysis for employees in the manufacturing industry is essential for maintaining a skilled workforce, enhancing organizational performance, and driving overall success.

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