

## To Evaluate the Efficacy of Training on IT industry Employee from Nagpur

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### Abstract

Effective utilization of human resources within a business is critical to its success. Only human resources might be the primary source of value for all other resources. The company must prioritize the ability, knowledge, and skills of its employees in order to enhance its human resources and adapt to both internal and external changes. The foundation for the growth of human capital is "training." The purpose of training is to enhance the work culture of the group working on a task together as well as to meet individual and organizational needs connected to the duties being done. Participants' attitudes, abilities, and forward-thinking outlook on the activity should all be altered by an ideal training program. This paper discusses a quantitative research to evaluate a efficacy of training on employee using Chi-square at 5% level of significance.

*Keywords: Human Resource, Training, Quantitative Research, Efficacy, Chi-Square,*

### Introduction

Business analytics refers to the practice of using data, statistical methods, and computational tools to extract insights and knowledge from business data, in order to improve decision making and drive business performance. The goal of business analytics is to help organizations make better, data-driven decisions that improve operational efficiency and profitability.

Even if terminology like "staff," "manpower," "personnel," etc. are still in use, workers or employees who work for or in an organization are now regarded as "human assets." Treating them as "human resources" or "assets" is a growing trend. Any organization's ability to succeed depends on how well its people resources are used. Only human assets could serve as the foundation for all other assets. In order to enhance its human capital and adapt to external and internal shifts, the organization must prioritize the development of its workforce's aptitude, experience, and competencies.

To guarantee the greatest return, educational activities must be managed more skillfully. Since expenses are not negligible, organizational management must progressively show the influence of employee training and development on the performance of businesses and the success of the entire organization as a result, it is important to investigate the efficacy of organizational training and development in particular because the outcomes are frequently incalculable or challenging to gauge. Analyzing the efficacy of processes enables training and development programs to be modified accordingly, optimizing processes and raising yields or outputs in all organizations. The outcome of training itself is widely determined and primarily depends on the accuracy of the effectiveness evaluation.

Business analytics involves various techniques, such as data mining, statistical analysis, predictive modeling, and machine learning. These techniques can be used to identify patterns, trends, and relationships in data, as well as to forecast future outcomes and develop actionable insights. The use of business analytics has become increasingly important in today's data-driven business environment, where organizations are collecting and storing vast amounts

of data about their customers, operations, and markets. By using business analytics tools and techniques, organizations can turn this data into valuable insights that can be used to drive business strategy and improve performance. Some common applications of business analytics include customer segmentation, marketing optimization, supply chain management, financial forecasting, and risk management. As organizations continue to invest in data-driven decision-making, the demand for skilled business analytics professionals is expected to grow in the coming years.

Any firm must make it a top priority to work toward the development of its workers into valued members of the management team. The foundation for the development of a human asset is "training." In addition to being a tool for meeting organizational and individual needs linked to the tasks performed, training also aims to enhance the group's work culture.

A perfect training program should alter participants' attitudes, abilities, and forward-thinking outlook on the work and must help them to do their daily task in more efficient way. This paper discusses the efficacy of training on employee using quantitative data and Chi-square algorithm at 5% level of significance.

## Literature Review

Ananthalakshmi Mahadevan et al. (2019) examined how training approaches affected workers' performance in a Malaysian direct selling company. Building a knowledgeable and skilled workforce, according to researchers, is one of the most important actions taken by a company to guarantee a high degree of competency with a skilled team in order to survive and expand in a fast-paced business climate. This study set out to investigate the effects of both on-the-job and off-the-job training on worker performance. The outcome shown that, with a significant value of 0.000, both on-the-job and off-the-job training attained standard coefficient beta values of 0.370 and 0.546, respectively. The researcher discovered that off-the-job training has a greater effect on employee performance than on-the-job training based on the beta value reading.

Sumaiya Shafiq et al. (2017) examined how employee performance is affected by training and development in a Malaysian private organization. According to researchers, staff members are a valuable resource for the company and can contribute to an success of the organization. Therefore, it is essential to look after their education in order to improve worker performance. The goal was to find out how employee performance in private enterprises was affected by work rotation, job enrichment, on-the-job training, and off-the-job training. According to the study's findings, the other independent variables have no bearing on how well employees perform; job enrichment is the only independent variable that significantly positively affects employee performance.

Ashikhube Humphrey Otuko et al. (2013), established how Mumias Sugar Company in Kenya's employee performance was impacted by the training dimension. The purpose of the study was to determine how employee performance was impacted by the assessment of training needs. employee performance in relation to training content and employee performance in relation to training evaluation. The outcome shows that employee performance and the evaluation of training needs had a favorable and substantial relationship. As a result, the majority of respondents said that the assessment of training needs was done prior to the training itself. The outcome suggests that employee performance is positively and significantly impacted by training material. This suggests that more training is necessary. Content will raise worker performance standards. Based on the outcome, there was a sign that there was a favorable and strong correlation between employee performance and training evaluation increases. This may be taken to indicate that, depending on the evaluation criteria chosen, evaluating the training's content and delivery methods as well as comparing performance knowledge, skill, and attitude to the standard could all readily help to improve employee performance at work.

Tarun Singh (2015), stated that the best way to use an employee's potential is through training and development. Employee development is the process of helping staff members advance at all levels whereas training is giving them the tools they need to do their jobs. An attempt was made to investigate how Bharat Heavy Electricals Ltd. (BHEL) employees' productivity is affected by training and development initiatives. The survey found that BHEL staff are quite happy with the company. The average mean score and percentage score for the 20 items were calculated to be 3.62 (65.5%). Employees find their current position satisfactory and so do not wish to change. The working environment is positive and there is good interaction between supervisors and subordinates. However, there are a few key issues that need to be implemented, including its policy, reward system, and training programs.

Philipina Ampomah (2016), asserted that boosting employee performance in firms is mostly dependent on training and development. The study's goal was to examine how employee performance is affected by training and development in a

An analysis of Pentecost University College, a private higher education establishment in Ghana, is presented. The study found that training increases employee motivation, and that Pentecost University College performs better as a result of training and development. Pentecost University College undoubtedly had a well-established policy to support employee training and development. They also periodically arranged training sessions for staff members to refresh their knowledge and abilities. The report suggested that mandatory training and development programs for all employees be implemented with enthusiasm.

## Research Methodology

### Hypothesis

$H_0$  = There is no significant relationship between two categorical variable.

$H_a$  = There is significant relationship between two categorical variable.

$H_0$  = The training is not effective

$H_a$  = The training is effective.

### Test to be used: Chi-Square

The chi-square test is a statistical method used to test the hypothesis of independence between two categorical variables. The null hypothesis for the chi-square test is that there is no significant association between the two variables, meaning they are independent. The alternative hypothesis is that there is a significant association between the two variables, meaning they are not independent.

To perform the chi-square test, the observed frequencies of the two variables are compared to the expected frequencies under the assumption of independence. If the observed frequencies differ significantly from the expected frequencies, then the null hypothesis is rejected, and it is concluded that the two variables are not independent. The chi-square test also provides a p-value, which indicates the probability of observing the data if the null hypothesis were true. A p-value less than the chosen level of significance (usually 0.05) suggests that the null hypothesis should be rejected in favor of the alternative hypothesis.

**The assumptions for the Chi-square test for Independence are as follows:**

1. The data in the cells should be frequencies, or counts of cases rather than percentages or some other transformation of the data.
2. The levels (or categories) of the variables are mutually exclusive.
3. The study groups are independent.
4. There are 2 variables, and both are measured as categories, usually at the nominal level. However, data may be ordinal data.
5. The value of the cell expected should be 5 or more in at least 80% of the cells.

**Formula**

Chi-square formula is a statistical formula to compare two or more statistical data

sets. It is used for data that consist of variables distributed across various categories and is denoted by

$\chi^2_{stat}$ . The chi-square formula is:

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

Where,  $O_i$  = observed value (actual value)

$E_i$  = expected value.

**Decision Rule**

If,  $\chi^2_{stat} > \chi^2_{\alpha}$  & p-value < 0.05, Reject Null Hypothesis

p-value < 0.05, Reject Null Hypothesis

**Formulas to Calculate Degrees of Freedom**

Df = (r-1) (c-1)

Where; r = Row, C = Column

**Limitations of the Chi-Square Test**

The chi-square test is sensitive to sample size. Relationships may appear to be significant when they aren't simply because a very large sample is used.

In addition, the chi-square test cannot establish whether one variable has a causal relationship with another. It can only establish whether two variables are related.

## Data Analysis and Interpretation

### ACTUAL VALUE

	Executives	Supervisor	Total
Effective	60	58	118
Neutral	10	8	18
Not Effective	5	9	14
Total	75	75	150

table 1: Actual Value

### EXPECTED VALUE

	Executives	Supervisor
Effective	59	59
Neutral	9	9
Not Effective	7	7

table 2: Expected Value

O	E	$(O-E)^2/E$
60	59	0.0169492
10	9	0.1111111
5	7	0.5714286
58	59	0.0169492
8	9	0.1111111
9	7	0.5714286
		1.3989777

table 3: calculations of Chi-square

## Findings

1.  $\chi^2_{stat} = 1.3989777$
2.  $\chi^2_{\alpha} = 5.991$
3. P- value = 0.496839206
4. Df = 2
5.  $\chi^2_{stat} < \chi^2_{\alpha}$
6.  $1.398777 < 5.991$

## Conclusion

In the light of the considered data, as  $\chi^2_{stat} < \chi^2_{\alpha}$  and obtained p-value  $> 0.05$ , there is no significant evidence to reject a null hypothesis. Therefore, we conclude that there is no significant relation between two categorical variable and the training given to the employee is not effective at 5% level of significance.

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