

# A Study on An One Way ANOVA Analysis of Profitability of Selected Information Technology Companies In India During 2013-14 TO 2017-18

Dr. Pratik J. Shukla

Assistant professor, College of Business Administration, Mandvi, Gujarat (India)

---

## ARTICLE DETAILS

### Article History

Published Online: 20 February 2019

### Keywords

Information Technology companies, Profitability, Ratio analysis, One way ANOVA

### Corresponding Author

Email: pratikshukla8186@gmail.com

---

## ABSTRACT

The focus of the study to analyze an one way ANOVA analysis of profitability of information Technology Companies namely Mphasis, Oracle, Polaris, Rolta and Tech Mahindra for the period of five years in India. The objective of the study is to analyze the profitability of the selected companies in India during the study period by using Ratio analysis; one way ANOVA have been used. To conclude that the profitability of the selected companies is good but it has some ups & downs during the study periods.

## 1. Introduction

The information technology industry has become of the most robust industries in the world. IT, more than any other industry or economic facet, has an increased productivity, particularly in the developed world, and therefore is a key driver of global economic growth. Economies of scale and insatiable demand from both consumers and enterprises characterize this rapidly growing sector. The Information Technology Association of America has defined information technology as “the study, design, development, application, implementation, support or management of computer-based information systems”, but the term has also been applied more narrowly to describe a branch of engineering dealing with the use of computers and telecommunications equipment to store, retrieve, transmit and manipulate data. Although commonly used to refer to computers and computer networks, IT encompasses other information-distribution technologies such as television and telephones, a wider field more explicitly known as information and communications technology.

## 2. Review of literature

**Dharmendra S (2011)** analyzed that Liquidity is in closely relation with the profitability of the Indian Cement Industry as compared to the solvency ratios like Total Assets Ratio, Inventory Turnover Ratio, Debt-Equity Ratio and Operating Expenses Ratio.

**Basil Moore (1968)**, referred to the basic reality about the growth of business. He argued that shareholders benefit not from a high level of profits per se, but rather from increases in the level of profits. They will particularly be concerned that earnings and dividends for a firm grow over time, so as to produce a higher yield on the historical value of their own investment. In addition, in an expanding economy growth is essential merely to maintain a firm's competitive market position vis-à-vis its competitors. For both of these reasons shareholders are concerned fundamentally about the growth prospects of their corporations, rather than with the static profit maximization.

## 3. Research Methodology

Research Methodology is a systematic and continuous method of defining a problem collecting the facts and analyzing them, reaching conclusion forming generalization.

### 3.1 Research Statement:

“An one way ANOVA analysis of Profitability of selected Information Technology companies in India.”

### 3.2 Need of the study

No business can service without earning profit. Profits are a measure of efficiency of a business enterprise. Profits also serve as a protection against risks which cannot be ensured. The accumulated profits enable a business to face risks like fall in prices, competition from other units, adverse government. Profit earning is the main aim of every economic activity. A business being an economic institution must earn profit to cover its costs and provide funds for growth.

### 3.3 Research Design

**3.3.1 Source of Data:** The study is based on secondary data. The secondary data are collected from information various journals, magazines, newspapers and annual reports, literature and websites and through various search engines.

**3.3.2 Sample selection:** The convenient sample method has been adopted to select the Information Technology companies namely TCS, Wipro, Infosys, HCL, Mind tree for the present study.

**3.3.3 Period of study:** The study covers a period of 2013-14 to 2017-18.

### 3.4 Objectives of study:

To know the profitability of the selected IT companies in India.

### 3.5 Scope of the study

The scope of study is confined only to selective IT companies on the basis of their financial performance and

analyzing the financial performance of the IT companies. The study is restricted to collecting information about the companies from websites and annual report.

**3.6 Tools of Analysis**

The following tools and techniques are used for the present study.

- 3.6.1 Ratio Analysis
- 3.6.2 One Way ANOVA analysis

**4. Data Analysis & Interpretation**

**One Way ANOVA for Gross Profit Ratio**

*Null hypothesis*

Ho: There is no significant difference in Gross Profit ratios of five selected Information Technology companies.[ All means are equal ]

*Alternative hypothesis*

H1: There is significant difference in Gross Profit ratios of five selected Information Technology companies. [At least one mean is different]

TABLE:-VI  
GROSS PROFIT RATIO

Sources	SS	DF	MSS	F cal	P value	F critical
Between Groups	4712	4	523.57	19.01	0.000	2.87
Within Group	2286	20	27,55			
Total	6999	24				

[Source: One Way ANOVA has been performed in MINITAB 17 ]

In the ANOVA table the calculated value of F value is 19.01 which is greater than F critical value and p value is 0.000, p value is less than 0.05, Hence it is concluded that gross profit ratio position of IT companies differ significantly. Hence the given hypothesis is rejected i.e. there is significant difference in Gross profit ratio among the selected IT companies.

*Null hypothesis*

Ho: There is no significant difference in Operating Profit Margin ratios of five selected Information Technology companies.[ All means are equal]

*Alternative hypothesis*

H1: There is significant difference in Operating Profit Margin ratios of five selected Information Technology companies.[ At least one mean is different]

**One Way ANOVA for Operating Profit Margin**

TABLE:-VII  
OPERATING PROFIT RATIO

Sources	SS	DF	MSS	F cal	P value	F critical
Between Groups	12599	4	1399.90	56.16	0.000	2.87
Within Group	2069	20	24.93			
Total	14668	24				

[Source: One Way ANOVA has been performed in MINITAB 17 ]

In the ANOVA table the calculated value of F value is 56.16 which is greater than F critical value and p value is 0.000, p value is less than 0.05, Hence it is concluded that Operating profit ratio position of IT companies differ significantly. Hence the given hypothesis is rejected i.e. there is significant difference in Operating profit ratio among the selected IT companies.

*Null hypothesis Ho:*

There is no significant difference in Net profit Ratio of 5 selected Information Technology companies.[ All means are equal]

*Alternative hypothesis H1:*

There is significant difference in Net profit Ratio of 10 selected Information Technology companies.[ At least one mean is different]

**One Way ANOVA for Net profit Ratio**

TABLE:-VIII  
NET PROFIT RATIO

Sources	SS	DF	MSS	F cal	P value	F critical
Between Groups	4763	4	529.2	5.15	0.000	2.87
Within Group	9254	20	102.8			
Total	14017	24				

[Source: One Way ANOVA has been performed in MINITAB 17 ]

In the ANOVA table the calculated value of F value is 5.15 which is greater than F critical value and p value is 0.000, p value is less than 0.05, Hence it is concluded that Net profit

ratio position of IT companies differ significantly. Hence the given hypothesis is rejected i.e. there is significant difference in Net profit ratio among the selected IT companies.

**One Way ANOVA for Return on capital employed**

*Null hypothesis*

Ho: There is no significant difference in Return on capital employed of five selected Information Technology companies.[All means are equal]

*Alternative hypothesis*

H1: There is significant difference in Return on capital employed of five selected Information Technology companies.[At least one mean is different]

TABLE:-IX  
RETURN ON CAPITAL EMPLOYED

Sources	SS	DF	MSS	F cal	P value	F critical
Between Groups	7750	4	861.15	9.09	0.000	2.87
Within Group	7865	20	94.76			
Total	15615	24				

[Source: One Way ANOVA has been performed in MINITAB 17]

In the ANOVA table the calculated value of F value is 9.09 which is greater than F critical value and p value is 0.000, p value is less than 0.05, Hence it is concluded that Return on capital employed position of IT companies differ significantly. Hence the given hypothesis is rejected i.e. there is significant difference in Return on capital employed among the selected IT companies.

*Null hypothesis Ho:*

There is no significant difference in Return on Net worth ratio of five selected Information Technology companies. [All means are equal]

*Alternative hypothesis H1:*

There is significant difference in Return on Net worth ratio of five selected Information Technology companies.[At least one mean is different]

**One Way ANOVA for Return on Net worth**

TABLE:-X  
NET WORTH RATIO

Sources	SS	DF	MSS	F cal	P value	F critical
Between Groups	5652	4	750.2	6.11	0.000	2.87
Within Group	8944	20	106.5			
Total	14796	24				

[Source: One Way ANOVA has been performed in MINITAB 17]

In the ANOVA table the calculated value of F value is 6.11 which is greater than F critical value and p value is 0.000 which is less than 0.05, Hence it is concluded that Net worth ratio position of IT companies differ significantly. Hence the given hypothesis is rejected i.e. there is significant difference in Net worth ratio among the selected IT companies.

**5. Conclusion**

All the ratios are significant in selected companies. From this analysis it can be noticed that the profitability ratios are good but it has ups and downs in selected companies. In the ANOVA table the calculated value of F value is greater than F critical value and p value is 0.000 which is less than 0.05, Hence it is concluded that profitability position of IT companies differ significantly. Hence the given hypothesis is rejected i.e. there is significant difference in profitability ratio among the selected IT companies.

**References:**

1. Cost and Management Accounting, M. N. Arora, Himalaya Pub. House
2. Ken Black Business Statistics for Contemporary Decision Making Wiley Student Edition Fourth or later Edition
3. Management Accounting, N. Vinayakan & G. B Gupta
4. D. P. Apte Statistics for Managers, Excel Books, Latest edition
5. Orlikowski, W. J., Iacono, C. S.(2001). Research Commentary: Desperately Seeking the "IT" in IT
6. Baskerville, R., Wood-Harper, a. T.(1998). Diversity in Information Systems Action Research Methods. European Journal of Information Systems, Vol. 7.
7. International Conference on Information Systems. Brisbane, Australia.
8. www.mindtree.com
9. www.hcl.com
10. www.IBEF.org.in
11. www.wipro.com
12. www.tcs-ca.tcs.co.in
13. www.infosys.com