



A Study of the Liquidity Position of Certain IT Companies Using One-Way ANOVA

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Abstract

This study conducts a one-way ANOVA analysis on the liquidity condition of specific IT companies using their yearly financial reports from 2013-2014 to 2022-2023. The study aims to examine the liquidity and profitability positions of chosen IT organizations. This study used a one-way ANOVA to do a liquidity analysis of the chosen company. The study indicates that the liquidity position is below the allowed threshold due to a higher proportion of current liabilities.

Key Words: *Liquidity position, IT companies, Ratio analysis, One-way ANOVA.*

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1. INTRODUCTION

The Information Technology Association of America says that information technology is the field that studies, plans, creates, uses, sets up, supports, or manages computer-based information systems. However, the word can also be used to refer to a field of engineering that studies how to use computers and telecommunications equipment to store, retrieve, send, and change data. This word is usually linked to computers and computer networks, but it can also refer to other technologies that send and receive information, like TV and phones. Information and communications technology is a better term for this more general topic. The IT business has become very strong and is doing very well around the world. The information technology (IT) sector has significantly enhanced productivity, especially in industrialized countries, making it a key driver of economic growth. This rapidly growing industry is distinguished by the advantages gained from producing on a large scale from both individuals and companies. The Indian IT industry contributes approximately 8% to the nation's Gross Domestic Product (GDP). India's emergence as an IT hub has not only solidified its position, but it has also generated a multitude of employment opportunities. The top five IT businesses worldwide employ over 700,000 persons. The global influence of Indian IT is pervasive.

1.1 ANOVA ANALYSIS

Analysis of variance, or ANOVA, is what most people call it. The ANOVA method is a way to use statistics to check if the means of more than two groups of numbers are the same. R.A. Fisher came up with the analysis of variance method in the 1920s, and it can be used effectively in a lot of different cases. It basically involves putting statistical data into groups and comparing them. It also involves checking to see if there are big changes between the means of different groups. This method determines the significance of the provided classification in influencing the outcomes. The cross-classification allows for the determination of whether there are substantial differences in the average characteristics of the outputs produced by different machines. A study of this nature would ascertain whether standardizing the methods of the operators and machines will enhance the consistency of output quality. Analysis of variance allows us to examine the overall variety in data and identify the specific origins or causes of this variation.

The analysis of variance was first developed in agricultural research, and as a result, its terminology is heavily influenced by agricultural phrases like as "block" and "treatments," which refer to different types of seeds, fertilizers, or cultivation methods. In the context of analysis of variance, the term "treatment" is used to denote any factor in the experiment that is deliberately manipulated at various levels or values. Anova is a statistical technique employed to examine disparities among two or more means. The nomenclature of the procedure may appear peculiar.

2. REVIEW OF LITERATURE

Kaur Harsh V. and Singh Sukhdev (2013) perform an empirical investigation on 200 manufacturing companies listed on the Bombay Stock Exchange (BSE) in 19 different industries. The study covers the period from 2000 to 2010. The study examines the possibility of modifying the analytical parameters to enhance the efficiency and profitability of 145 organizations. The study examines the correlation between working capital and profitability, as measured by the

ratio of income to current assets and the ratio of income to average total assets. This article centers on the optimization of cash conversion efficiency and the strategic planning of operating cycle days. Ultimately, the research suggests that proficient management of working capital significantly influences profitability.

In the Indian cement business, Dharmendra S. (2011) discovered a direct link between liquidity and profitability. This was different from solvency measures like Total Assets Ratio, Inventory Turnover Ratio, Debt-Equity Ratio, and Operating Expenses Ratio.

3. RESEARCH METHODOLOGY

Research technique is a planned and ongoing way to figure out what the problem is, collect and analyze data, come to a conclusion, and draw broad conclusions.

3.1 Research Statement

A study of the liquidity position of certain IT companies using one-way ANOVA

3.2 Need of the Study

This study is about analysis of liquidity position of 10 IT organizations. Nonetheless, they do supply some highly important information. As a result, financial statements provide a summary snapshot of a company's financial liquidity positions and operations. Liquidity analysis focuses on major liquidity and the relationships that exist between them. The technique of investigating the relationship between the component elements is known as liquidity analysis. IT firms provide substantial economic contributions to our country. Liquidity data lays the groundwork for financial planning, analysis, and decision-making. To forecast, compare, and assess the firm's earning potential, long-term financial strength, short-term financial strength, and working abilities, liquidity data is required.

3.3 Research Design

A research design is a plan that shows the steps and methods that will be used to complete a research project. The conceptual framework is the underlying structure that guides research, providing a plan for gathering, measuring, and analyzing data. This is a description of the methodologies and procedures used to collect the necessary information to address the study issue. Research design, as defined by Prof. Miller, refers to the systematic arrangement of all the steps needed in carrying out a research investigation.

3.3.1 Information Origin

The research makes use of secondary data. A variety of sources, including books, journals, magazines, newspapers, yearly reports, websites, and a plethora of search engines, are used to collect secondary data.

3.3.2 Sample Selection Process

The present study has utilized the easy sampling approach to select 10 Information Technology businesses, namely TCS, Wipro, Infosys, HCL, Mindtree, Mphasis, Oracle, Polaris, Rolta, and Tech Mahindra.

3.3.3 Study Term

From 2013–14 to 2022–2023 is the study's covered time.

3.4 Goal of Study

Identify the current financial health of ten chosen IT firms.

3.5 Hypothesis

Null hypothesis: Ho: Selected ten IT companies do not differ significantly in terms of liquidity.

Alternative hypothesis: H1: Selected ten IT companies differ significantly in terms of liquidity.

3.6 What the Study is About

The research will only look at IT firms that were chosen for their liquidity and how they are doing in terms of liquidity. The study solely relies on data gleaned from company websites and annual reports.

3.7 Tools of Analysis

The present study makes use of the following tools and methodologies.

- Ratio Analysis
- Descriptive Statistics
- One Way ANOVA

4. DATA ANALYSIS

Table No. 1: Descriptive Statistics for Liquidity Ratio

Variable	Current Ratio	Quick Ratio	Liquidity Ratio
Count	10	10	10
Mean	2.564	2.664	2.614
Std Error	0.354	0.332	0.343
Std- Dev	1.121	1.050	1.084
Variance	1.256	1.104	1.175
Minimum	1.649	1.874	1.762
Maximum	4.992	4.938	4.965
Range	3.343	3.064	3.203

Table No. 2.1: Showing Statistical Analysis of One Way ANOVA for Current Ratio

Null Hypothesis:

Ho: Current ratio differences among ten selected information technology corporations are not statistically significant. [Every mean is equivalent]:

Alternative Hypothesis:

H1: The current ratios of 10 chosen IT companies are very different from one another. [One of the means is not the same]

Significance level $\alpha = 0.05$ and 0.01 (1.96 & 2.58)

Assumption: Equal variances were assumed for the analysis.



Table No.: 2.1

Ratio	Sources of variation	SS	DF	Mean of sum of square	F-Cal	P-Value	F- Critical @ 5% and 1 % level of significance	Null Hypothesis Accepted/ Rejected
CR	Factors	113.00	9	12.56	11.56	0.000	As F- value = 11.56 > 1.96 and 2.56	Ho Rejected
	Errors	97.76	90	1.09				
	Total	210.76	99					

Conclusion: Here, Hypothesis is rejected at 5 % and 1 % level of significance. It can be said that the current ratio positions of IT companies are very different. So, the given hypothesis can't be true. And the Current Ratios of the 10 IT companies that were chosen are very different from one another.

Table No. 2.2: Showing Statistical Analysis of One Way ANOVA for Quick Ratio

Null Hypothesis:

Ho: There is no significant difference in Quick ratio of 10 selected Information Technology companies. [All means are equal]

Alternative Hypothesis:

H1: There is significant difference in Quick ratio 10 selected Information Technology companies. [At least one mean is different]

Significance level $\alpha = 0.05$ and 0.01 (1.96 & 2.58)

Assumption: Equal variances were assumed for the analysis.

Table No.: 2.2

Ratio	Sources of variation	SS	DF	Mean of sum of square	F-Cal	P-Value	F- Critical @ 5% and 1 % level of significance	Null Hypothesis Accepted/ Rejected
QR	Factors	99.32	9	11.035	10.93	0.000	As F- value = 10.93 > 1.96 and 2.56	Ho Rejected
	Errors	90.83	90	1.009				
	Total	190.15	99					

Conclusion: Here, Hypothesis is rejected at 5 % and 1 % level of significance. It can be said that Quick of IT companies are very different. So, the given theory is not true; there is a big difference in the Quick ratio between the 10 IT companies that were chosen.

Table No. 2.3: Showing Statistical Analysis of One Way ANOVA for Liquidity Ratio

Null Hypothesis:

Ho: Liquidity ratio differences among ten selected information technology corporations are not statistically significant. [Every mean is equivalent]:

Alternative Hypothesis:

H1: Liquidity ratios of 10 chosen IT companies are very different from one another. [One of the means is not the same]

Significance level $\alpha = 0.05$ and 0.01 (1.96 & 2.58)

Assumption: Equal variances were assumed for the analysis.

Table No.: 2.3

Ratio	Sources of variation	SS	DF	Mean of sum of square	F-Cal	P-Value	F- Critical @ 5% and 1 % level of significance	Null Hypothesis Accepted/ Rejected
LR	Factors	0.05	1	0.04990	0.04	0.84	As F- value = 0.04 < 1.96 and 2.56	Ho Accepted
	Errors	21.23	18	1.17952				
	Total	21.28	19					

Conclusion: Hypothesis is rejected at 5 % and 1 % level of significance. It can be said that the liquidity rates of IT companies are not very different from one another. So, the theory is true: there isn't a big difference between the 10 IT companies that were chosen in terms of their liquidity ratios.

5. CONCLUSION

5.1 Current Ratio

- It has been found that the average current ratio of the IT sector was 2.56 during the whole decade in the company wise comparison, which above to the ideal level.
- The highest average current ratio during the decade was 4.99 of Oracle Financial Services and followed by Infosys 4.27 which was unnecessarily too high. The lowest average current ratio during the decade was 1.65 of Tech Mahindra followed by Polaris 1.85, Mphasis 1.95.
- The current ratios of these companies were up to 2 which were considered high and no risky in terms of current assets and may not create financial crisis for short term expenses. During the decade, there is a considerable variance in the average current ratios of chosen enterprises. All the companies having average current ratios above 2. Out of the selected companies the average current ratios of 2 companies were higher than 2.56 and 8 companies were lower than 2.56.
- Among all the selected Information Technology businesses, Oracle Financial Services beat the others in terms of current ratio, with the greatest mean of 4.99, while Tech Mahindra underperformed the others, with a mean of 1.65.
- According to CV, Rolta India has higher variability than Infosys.



5.2 Quick Ratio

- From the company wise comparison, it has been found that the average quick ratio of the IT sector during the decade was 2.66 which is high in terms of liquidity.
- The highest composite quick ratio was 4.94 for Oracle Financial Services, followed by Infosys 4.23. It indicates high level of liquidity and it needs to be controlled. The lowest average quick ratio was 1.87 for Tech Mahindra, followed by Polaris 1.94, Mphasis & HCL 2.05. The quick ratio above 1 indicates no liquidity risk of liquid assets.
- Out of selected companies the composite quick ratios of 2 companies were higher than 2.66, Wipro was equal to average quick ratio and that of 7 companies were having lower than 2.65. All companies having the average quick ratios more than 1.
- Among all the selected Information Technology businesses, Oracle Financial Services excelled the others in terms of quick ratio, with the greatest mean of 4.94, while Tech Mahindra underperformed the others, with a mean of 1.87.
- According to CV, Rolta India had high variability while Wipro had low variability.

5.3 Liquidity Ratio

- From the liquidity ratio, it can be conceded that the liquidity position of Information Technology companies was satisfactory in whole span of study period.
- The liquidity position of ORECLE and Infosys was very highly satisfactory while the liquidity position of Tech Mahindra.HCL and Mphasis was unsatisfactory but their liquidity ratio was near to standard ratio.
- It has been found that, the average liquidity of the IT sector was 2.614 during the whole decade in the company wise comparison, which above to the ideal level.
- The liquidity ratios of these companies were up to 2 which is considered high and no risky in terms of liquid assets and may not create financial crisis for short term expenses. The average liquidity ratios of the corporations that were chosen during the past decade have not changed significantly.
- It is much tolerable in separate ratio but not to decide under covered ratios position. Individual performance of the selected companies, in individual ratio wise given clean picture and in terms of activity its shows better performance in whole decade in selected 10 IT company.

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