

An Analysis of Operating Performance of Selected Paper Companies in India

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ABSTRACT

Purpose: The aim of this research work is to analyze and compare profitability performance of selected paper companies in India.

Approach/Methodology/Design: An analytical study method is employed in this research work by relying on secondary data. In this research work 12 paper companies are selected as a sample based on their higher net sales and the study period are last 10 financial years from 2012-13 to 2021-22. Ratio Analysis is used as an accounting tool in which six profitability ratios are employed. One-way ANOVA technique of parametric test is used as a statistical tool to identify the difference among sample means.

Findings: The major finding of the research work indicates that in all the selected paper companies the profitability performance shows fluctuating trend during the study period of 10 years. The overall performance was good and satisfactory in Satia Industries Ltd., JK paper Ltd., Seshasayee Paper and Board Ltd. and NR Agarwal Industries Ltd. and it was low and dissatisfactory in Orient Paper & Industries Ltd. and Astron Paper & Board Mill Ltd. for all the selected profitability ratio during the study period. The results of statistical test revealed that in gross profit ratio, operating profit ratio and return on assets ratio formulated null hypotheses are rejected and in net profit ratio, return on net worth ratio and return on capital employed ratio formulated null hypotheses are accepted.

Originality/value: In this research work profitability analysis is carried out which is helpful to know the profitability performance of selected paper companies. The result would help investors to make right choice of investment in selected companies. It would also identify that how efficiently a business can generate profit and value for its shareholders from its sales or operations, shareholders' fund or balance sheet's assets.

INTRODUCTION

The success of organization can be measured or evaluated through a number of factors from which 'profitability' is a very important factor. The prime objective of running any business or organization is to earn maximum profit. Profit is a significant and indispensable component of any organization's financial structure. Profit is a very good indicator of business's financial performance, but the actual standard of financial performance of a business firm can't judge by the absolute size of its periodic profit. And for that profitability is a good mechanism, which represents the earning of a business entity. (Pandy, 2015) The

word ‘profitability’ is composed of two different words i.e., ‘profit’ and ‘ability’. “Profit” refers to the absolute amount of profit (Revenue – Expenditure), but an absolute figure alone doesn’t give an exact idea of the adequacy, where as “ability” means the power of a business entity to earn more and more profits by utilization of the resources in the best way possible; it is also called the firms earning performance. (Arora, 2011) So, profitability is the ability to earn profit from all the activities of an enterprise. It indicates how well management of an enterprise generates earnings by using the resources of its disposal. Earning is an essential requirement to continue the business. No business can survive without earning profit because it is essential for both survival as well as growth of the business firm. So, we can say that a healthy and efficient enterprise is the one which has good profitability. (krishna Trivedi, 2020)

In this era of cut throat competition, both profitability and growth are important and essential for a business to be successful, for survive and remain attractive to investors and analysts. Profit is the blood of the business hence without profit, a business firm is not successive. A generated profit serves as a nerve for the business that brings proper flow of finance for the effective management of fund circulation and employment to ensure growth, expansion and diversification of the business. (Kantharia, 2020) Paper is one of the core industries and is allied to the human’s basic needs. Paper is an essential for education and literacy and its use is an index of progression in these two fields as well as for the overall wellbeing of the society. (Dey, 2014) The Indian paper industry is the 15th largest paper industry in the world. The Indian paper industry accounts for about 1.6% of the world’s production of paper. The anticipated turnover of the industry is Rs. 35,000 crores around.

The industry provides employment to nearly 15 lakh peoples and contributes Rs. 25 billion to the government of India. Presently in India, there are about 515 paper companies engaged in the manufacturing of paper, paperboards and newsprint. (Ambati, 2017) Paper industry of India has formed sustainable livelihood in rural areas and also helped to generate employment for the local residents mainly for women to earn their livelihood. (Tripathi, 2014) Paper has been an unavoidable part of not only for the education but also for the other things because of its different use in our everyday life. Paper and its products have further gained more demand due to discouraging the use of plastic bags. Though the industry is also facing challenges due to rising digitalization. It has motivated to select the paper industry for the purpose of research work.

Statement of the Problem:

In the current economy system, it is very difficult to earn the adequate amount of profit in the organisation and it perhaps the secondary objective of the organisation. Without profits an organization can’t run effortlessly and also it make difficult to compete in the global market. If a company tries to acquire a marginal profit, then it can easily expand its business and achieve vast amount of sales which lead to the huge amount of profit and a company would also enjoy goodwill, reputation and credibility. All these factors can increase the value and wealth of the firm. Profitability analysis plays significant role in running a business smoothly and there should be a balance between operational and financial efficiency. Thus, there is a need to study the profitability performance of growing industry for the sake of investment decisions to be taken by potential investors and also by the management. Thus, in order to evaluate the profitability performance of paper industry in India, the research title is

REVIEW OF LITERATURE

formulated as “An Analysis of Operating Performance of Selected Paper Companies in India”

(Dr. Bhavik Swadia, 2018) has done “A Comparative Study of Profitability of Selected Pharma Companies of India”. The purpose of this research work was to measure the profitability performance of selected Indian pharma companies and to identify the relationship in-between selected companies in the various measures of profitability. The study period of this research work was 10 years from 2007-08 to 2016-17. 14 pharma companies were selected as a sample of this research work. A secondary source of data was used for this research work and it was collected from annual reports of selected companies. Ratio analysis as an accounting tool in which 2 profitability ratios i.e. G. P. Ratio and N. P. Ratio were used in this research work and ANOVA test was used as a statistical tool. The researcher has concluded that selected pharmaceutical companies had a very good profitability performance in the year 2007-08, whereas the weakest profitability performance of all time was in the year 2014-15.

(Dr. P. Chellasamy, 2019) have carried out a study on “Profitability Analysis of Select Steel Companies in India”. The main objective of the study was to analyze and compare the profitability performance of selected steel companies in India for the study period of 10 years from 2006-07 to 2015-16. Top 15 steel companies based on market capital and also listed on BSE were selected as sample of the study and purposive sampling method is used. The study was based on secondary data and data was collected from CMIE & from moneycontrol.com. For the analysis purpose, ratio analysis was used as accounting tool in which 5 profitability ratios were taken and mean, standard deviation, co-efficient of variation, panel unit root tests and co integration test were used as statistical tools. The researchers have concluded that although the steel production has been rising, then also the companies were not able to export more. Also found that financial position of the steel companies was not satisfactory.

(Ahmed Mahdi, 2020) has analyze “Profitability Performance of HDFC Bank and ICICI Bank: An Analytical and Comparative Study”. The purpose of the study was to analyze and compare the profitability performance of selected two Indian private sector banks. The study period was 5 years from 2015-16 to 2019-20. Two private sector banks of India i.e. HDFC bank and ICICI bank were taken as sample and Simple random sampling method was used. The secondary sources data was used and it was collected from annual reports of selected 2 banks. Ratio analysis was used as an accounting tool and arithmetic mean and T-test were used as statistical tools. The results of the study concluded that overall HDFC bank generating more profitability. So, the performance of HDFC bank was better and higher in compared to ICICI bank.

(krishna Trivedi, 2020) has done “A Research Study on Profitability Analysis a Key Feature for Company’s Financial Performance with Special Reference to Selected Oil Companies in India”. The prime objective of the research work was to know about current position of oil industry in India and to analyze the profitability ratios of selected oil companies in India. The time span of this research work was 10 years from 2009-10 to 2018-19. Five oil companies were selected as sample of this research work. This research work was purely based on secondary data and data was collected from annual reports of selected oil companies. Ratio analysis in which 3 profitability ratios as accounting tool and ANOVA test as statistical tool were used for the purpose of analysis. The findings of the research work revealed that Deep Industries and Selan Exploration companies have good ability to generate profit and good capital efficiency with performance. Jindal Drilling, Asian Oil field Services and GNRL have to concentrate and take required steps to improve their profitability position for the continuous existence. (Dr. Anil Verma, 2022; Pandey, 2015) have conducted “An Analytical Study on Profitability Analysis of Selected Private Banks”. The main objectives of the study were to analyze profitability performance of selected private sector banks, to evaluate the

efficiency of selected banks and to examine the overall profitability of selected banks. The time span of this study was last 6 years from 2016-2017 to 2021-2022. Three private sector banks were selected as sample of the study viz. ICICI Bank, Axis Bank and HDFC Bank. This study was mainly based on secondary sources data and it was collected from published annual reports of selected three banks. To analyze the profitability performance, seven profitability ratios were used. The researchers have concluded that the overall performance of HDFC Bank very strong compared to ICICI bank And AXIS Bank during the study period.

METHODOLOGY AND PROCEDURES

Data and Variable Measurements

Research methodology is a scientific and systematic approach to solve a research problem. The methodology implemented for various types of problem are different from each other. It tells about different methods to be followed during the research process starting from investigation to reach its conclusion.

Objectives of the Study:

To analyse profitability performance of selected paper companies during the selected study period. To compare the profitability performance among selected paper companies during the selected study period.

Nature of the Study:

In this paper facts and information used is already available in various secondary sources to make critical evaluation and thus from this point of view, the nature of the research work become analytical.

Period of the Study:

The present research work is made for a period of the last 10 financial years from 2012-13 to 2021-22.

Sampling Design:

All the paper companies listed on BSE are considered as population of the research work. Out of the population, 12 paper companies are selected on the basis of higher net sales and the purposive sampling technique of non-probability sampling methods is used. The selected companies for the research work are as follows:

Table No. 1.1: Selected Companies

Sr. No.	Name of the Company
1.	Tamil Nadu Newsprint and Papers Ltd.
2.	JK Paper Ltd.
3.	West Coast Paper Mills Ltd.
4.	Emami Paper Mills Ltd.
5.	NR Agarwal Industries Ltd.
6.	Andhra Paper Ltd.
7.	Seshasayee Paper and Board Ltd.
8.	Satia Industries Ltd.
9.	Orient Paper & Industries Ltd.
10.	Astron Paper & Board Mill Ltd.

11.	Ruchira Papers Ltd.
12.	Kuantum Papers Ltd.

Scope of the Study:

Functional scope of this research work is to analyze and compare the profitability performance of selected paper companies under the study. In this research work 12 paper companies are selected which provides paper products in India. So, India is considered as geographical criteria for this research work.

Data Collection:

This research work is based on secondary sources data. Financial data is collected from annual reports of selected companies and other information used is collected from various websites, articles, Journals and books.

Tools and Techniques of Data Analysis:

In this research work tools and techniques used for data analysis are as under:

- Tabulation and Classification of Data
- Accounting Tool – Ratio Analysis
- Statistical Tool – ANOVA – test

RESULTS AND DISCUSSION

For data analysis, the numerical data is collected of selected paper companies and six profitability ratios are used i.e., gross profit ratio, operating profit ratio, net profit ratio, return on net worth, return on capital employed and return on assets. These are as follows.

Profitability Ratio:

Profitability ratios assess an organization's capability to earn profits from its sales or operations, funds of shareholders or assets of balance sheet. Profitability ratios indicate that how efficiently a business can generate profit and value for its shareholders. The result of higher ratio is often more favorable, and these ratios give much more information when it compared to the results of company's own historical performance or similar companies or the industry average.

Gross Profit Ratio: Gross profit ratio is a profitability ratio which measures the relationship between the gross profit and net sales. It is expressed as a percentage; it is also known as the Gross Profit Margin. The formula for calculating gross profit ratio is:

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Net Sales}} * 100$$

Table No. 1.2 : Gross Profit Ratio (In Percentage)

Year	Tamil Nadu	JK Paper	West Coast	Emami	NR Agarwal	Andhra	Seshasay ee	Satia	Orient	Astron	Ruchira	Kuantum
2012-13	22.67	9.89	18.79	14.4	4.89	11.27	13.2	15.97	0.83	7.16	17.69	14.34
2013-14	22.89	7.97	13.72	13.5	4.16	6.77	12.72	13.87	5.41	10.7	15.8	16.16
2014-15	24.45	12.34	14.9	11.32	4.97	9.35	9.38	17.65	2.71	12.72	11.69	12.97
2015-16	24.65	16.48	15.12	9.95	8.29	11.82	10.79	16.14	6.41	12.6	13.41	12.47

2016-17	25.89	20.5	19.24	13.34	13.81	15.01	20.02	20.66	10.07	12.52	15.57	19.71
2017-18	14.15	22.46	22.28	12.67	13.29	17.93	19.6	23.99	18.61	12.77	17.4	21.46
2018-19	16.86	28.43	26.75	15.85	14.61	27.54	24.06	24.18	24.17	13.7	17.00	20.71
2019-20	18.59	32.24	26.67	14.01	16.25	24.96	24.55	23.51	9.78	9.94	9.48	17.09
2020-21	11.24	25.58	14.69	16.24	12.3	8.58	16.22	24.27	-5.36	9.8	6.2	9.73
2021-22	10.12	25.7	21.94	16.12	9.54	19.25	13.45	23.24	-1.32	5.55	10.61	14.78
AVG.	19.15	20.20	19.41	13.74	10.21	15.25	16.40	20.35	7.13	10.75	13.49	15.94
MAX.	25.89	32.24	26.75	16.24	16.25	27.54	24.55	24.27	24.17	13.7	17.69	21.46
MIN.	10.12	7.97	13.72	9.95	4.16	6.77	9.38	13.87	-5.36	5.55	6.20	9.73

The above table indicates gross profit ratio with fluctuating trend in all the selected paper companies during the study period of 2012-13 to 2021-22. A minimum ratio was -5.36 % in Orient Paper & Industries Ltd. in the year 2020-21 and a maximum ratio was 32.24 % in JK Paper Ltd. in the year 2019-20. In context to the average ratio of selected companies during the time span of 10 years, a highest ratio i.e. 20.35 % showed by Satia Industries Ltd. and a lowest ratio i.e. 7.13 % showed by Orient Paper & Industries Ltd. Average ratio in JK Paper Ltd., West Coast Paper Mills Ltd. and Tamil Nadu Newsprint and Papers Ltd. were 20.20 %, 19.41 % and 19.15 % respectively, which was near to the highest average ratio. Average ratio in Astron Paper & Board Mill Ltd. and NR Agarwal Industries Ltd. were 10.75 % and 10.21 % respectively, which was near to the lowest average ratio. Average ratio in remaining companies i.e. Seshasayee Paper and Board Ltd., Kuantum Papers Ltd., Andhra Paper Ltd., Emami Paper Mills Ltd. and Ruchira Papers Ltd. were 16.40 %, 15.94 %, 15.25 %, 13.74 % and 13.49 % respectively, which were in between the highest average ratio and lowest average ratio.

The overall performance of gross profit ratio in Satia Industries Ltd. JK Paper Ltd., West Coast Paper Mills Ltd. and Tamil Nadu Newsprint and Papers Ltd. were better. In Astron Paper & Board Mill Ltd., NR Agarwal Industries Ltd. and Orient Paper & Industries Ltd. were low in comparison to all selected companies.

Operating Profit Ratio: Operating profit ratio is a type of profitability ratio that used for determined a relationship between operating profit and net sales. It is expressed in a percentage; it is also known as the Operating Profit Margin. The formula for calculating operating profit ratio is:

$$\text{Operating Profit Ratio} = \frac{\text{Operating Profit}}{\text{Net Sales}} * 100$$

**Table No. 1.3 : Operating Profit Ratio
(In Percentage)**

Year	Tamil Nadu	JK Paper	West Coast	Emami	NR Agarwal	Andhra	Seshasayee	Satia	Orient	Astron	Ruchira	Kuantum
2012-13	13.27	4.90	9.42	8.46	3.04	4.13	7.30	12.36	-2.05	3.38	13.99	10.61
2013-14	14.47	0.94	5.57	7.71	2.25	-1.19	7.88	6.90	2.44	7.69	12.15	12.29
2014-15	18.02	7.08	7.48	6.21	2.54	3.27	6.49	4.17	0.09	10.96	8.93	10.4
2015-16	18.88	11.67	8.40	5.00	5.63	5.51	8.00	8.47	3.98	10.83	10.79	9.89
2016-17	18.87	15.95	12.96	8.44	11.46	9.04	17.26	13.27	5.14	10.72	13.03	17.18

2017-18	6.99	18.21	15.49	7.93	11.13	12.73	16.71	16.88	14.33	11.38	14.73	18.7
2018-19	11.30	24.59	17.9	11.31	12.53	22.79	21.51	17.72	19.72	12.35	14.35	17.55
2019-20	11.93	27.54	18.28	9.22	14.00	18.99	21.59	16.75	4.31	8.44	6.62	12.84
2020-21	2.74	19.98	3.47	10.31	9.42	00.30	11.41	14.34	-12.7	8.41	2.88	1.11
2021-22	4.43	21.45	14.97	12.34	7.41	14.04	10.43	16.10	-6.64	4.36	8.26	9.23
AVG.	12.09	15.23	11.39	8.69	7.94	8.96	12.86	12.70	2.86	8.85	10.57	11.98
MAX.	18.88	27.54	18.28	12.34	14.00	22.79	21.59	17.72	19.72	12.35	14.73	18.70
MIN.	2.74	0.94	3.47	5.00	2.25	-1.19	6.49	4.17	-12.7	3.38	2.88	1.11

The above table presents operating profit ratio with mixed trend for the study period of 10 years from 2012-13 to 2021-22 in all the selected companies. A minimum ratio was -12.7% in Orient Paper & Industries Ltd. in year 2020-21 and a maximum ratio was 27.54% in JK Paper Ltd. in year 2019.-20. About the average ratio of 10 years in selected companies, the lowest ratio 2.86% showed in Orient Paper & Industries Ltd. and the highest ratio 15.23% showed in JK Paper Ltd. Average ratio of Seshasayee Paper and Board Ltd., Satia Industries Ltd., Tamil Nadu Newsprint and Papers Ltd., Kuantum Papers Ltd. and West Coast Paper Mills Ltd. were 12.86%, 12.70%, 12.09%, 11.98% and 11.39% respectively, that was near to the highest average ratio. While, average ratio in Ruchira Papers Ltd., Andhra Paper Ltd., Astron Paper & Board Mill Ltd., Emami Paper Mills Ltd. and NR Agarwal Industries Ltd. were 10.57%, 8.96%, 8.85%, 8.69% and 7.94% respectively, that were in between the highest and lowest average ratio.

The overall performance of operating profit ratio was good in JK Paper Ltd., Seshasayee Paper and Board Ltd., Satia Industries Ltd. and Tamil Nadu Newsprint and Papers Ltd. In Orient Paper & Industries Ltd. it was low and in remaining companies the performance was moderate.

Net Profit Ratio: Net profit ratio is a type of profitability ratio that used for determining a relationship between net profit and net sales. This ratio provides a final picture of how a company is profitable after all expenses, including interest and taxes. It is expressed as a percentage; it is also known as the Net Profit Margin. The formula for calculating net profit ratio is:

$$\text{Net Profit Ratio} = \frac{\text{Net Profit}}{\text{Net Sales}} * 100$$

**Table No. 1.4 : Net Profit Ratio
(In Percentage)**

Year	Tamil Nadu	JK Paper	West Coast	Emami	NR Agarwal	Andhra	Seshasayee	Satia	Orient	Astron	Ruchira	Kuantum
2012-13	4.91	2.58	1.24	2.26	0.89	-1.92	2.46	4.98	-2.53	-15.6	5.52	3.03
2013-14	7.05	-4.44	0.42	3.4	0.08	-3.81	2.64	3.51	0.26	-2.85	4.77	7.00
2014-15	7.80	-0.59	0.06	2.33	-4.61	0.02	1.71	1.99	-1.71	2.71	3.70	5.01
2015-16	10.5	2.49	-0.02	5.18	2.01	3.18	3.44	3.02	1.15	3.86	5.36	4.66
2016-17	8.94	6.19	7.26	1.67	4.76	2.76	11.56	8.40	7.41	5.46	7.79	9.76
2017-18	-1.36	9.14	13.05	1.20	7.43	6.57	11.12	10.82	7.45	8.23	8.49	10.35
2018-19	2.31	13.42	14.95	2.87	7.17	14.01	14.33	11.88	14.31	6.58	8.14	9.82
2019-20	3.74	16.13	13.94	-0.68	8.30	16.76	14.74	11.35	3.28	3.76	5.69	9.64
2020-21	-2.35	11.75	0.14	4.19	4.99	-0.51	12.82	8.42	-10.5	5.01	1.20	-3.15

2021-22	0.35	12.83	10.98	5.86	3.77	10.12	7.60	11.29	-4.93	1.72	5.39	1.61
AVG.	4.19	6.95	6.20	2.83	3.48	4.72	8.24	7.57	1.42	1.89	5.61	5.77
MAX.	10.5	16.13	14.95	5.86	8.30	16.76	14.74	11.88	14.31	8.23	8.49	10.35
MIN.	-2.35	-4.44	-0.02	-0.68	-4.61	-3.81	1.71	1.99	-10.5	-15.6	1.20	-3.15

The above table reveals net profit ratio for the time span of 10 years in all the selected Indian paper companies. A minimum ratio was -15.6% in Astron Paper & Board Mill Ltd. in the first year 2012-13 and a maximum ratio was 16.76% in Andhra Paper Ltd. in year 2019.-20. In context to average ratio of sample companies during the 10 years, lowest ratio 1.42% showed in Orient Paper & Industries Ltd. and highest ratio 8.24% showed by Seshasayee Paper and Board Ltd. Whereas, average ratio in Satia Industries Ltd., JK Paper Ltd. and West Coast Paper Mills Ltd. were 7.57%, 6.95% and 6.20% respectively, which was close to average highest ratio. In NR Agarwal Industries Ltd., Emami Paper Mills Ltd. and Astron Paper & Board Mill Ltd. were 3.48%, 2.83% and 1.89% respectively, which was close to average lowest ratio. Average ratio in remaining companies i.e. Kuantum Papers Ltd., Ruchira Papers Ltd., Andhra Paper Ltd. and Tamil Nadu Newsprint and Papers Ltd. were 5.77%, 5.61%, 4.72% and 4.19% respectively, which were in between the lowest and highest average ratio. The overall performance of net profit ratio was good in Seshasayee Paper and Board Ltd., Satia Industries Ltd., JK Paper Ltd. and West Coast Paper Mills Ltd. It was low in Orient Paper & Industries Ltd., Astron Paper & Board Mill Ltd., Emami Paper Mills Ltd. and NR Agarwal Industries Ltd.

Return on Net Worth: This ratio is developed from the shareholder perspective and is used to analyze the return of investors. This ratio measure that how well a business is utilizing the shareholder's investment to make returns for them. The formula for return on net worth is:

$$\text{Return on Net Worth} = \frac{\text{Profit After Tax}}{\text{Shareholders Funds}} * 100$$

**Table No. 1.5 : Return on Net Worth
(In Percentage)**

Year	Tamil Nadu Paper	JK Paper	West Coast Paper	Emami Paper	NR Agarwal Paper	Andhra Paper	Seshasayee Paper	Satia Paper	Orient Paper	Astron Paper	Ruchira Paper	Kuantum Paper
2012-13	8.83	4.32	3.03	4.95	4.16	-5.18	5.66	19.48	-7.46	-18.3	19.62	16.71
2013-14	14.06	-9.71	1.11	5.96	0.40	-10.0	6.97	15.92	0.99	-12.8	15.92	30.97
2014-15	13.87	-1.64	0.18	3.33	-43.8	0.05	4.41	8.58	-7.28	14.1	12.18	19.54
2015-16	17.56	5.47	-0.09	7.19	18.94	8.18	8.45	12.55	5.14	17.2	16.13	16.56
2016-17	15.52	12.32	20.1	8.13	37.34	6.77	22.00	28.77	3.13	22.18	21.27	9.55
2017-18	-2.62	15.8	26.6	6.73	41.13	14.72	17.51	30.84	3.74	16.52	19.86	10.54
2018-19	5.71	21.41	26.82	17.04	30.3	26.19	21.89	28.53	7.33	16.35	16.46	10.16
2019-20	7.59	20.8	21.33	-4.77	27.87	21.81	17.48	23.22	1.57	8.25	10.34	8.63
2020-21	-4.07	12.39	0.15	17.25	12.01	-0.47	9.10	11.12	-3.17	12.6	1.84	-1.55
2021-22	0.90	16.78	14.46	28.03	11.38	12.77	8.55	18.47	-1.85	4.85	10.68	1.61
AVG.	7.74	9.79	11.37	9.38	13.97	7.48	12.20	19.75	0.21	8.10	14.43	12.27
MAX.	17.56	21.41	26.82	28.03	41.13	26.19	22.00	30.84	7.33	22.18	21.27	30.97
MIN.	-4.07	-9.71	-0.09	-4.77	-43.8	-10.0	4.41	8.58	-7.46	-18.3	1.84	-1.55

The above table indicates return on net worth ratio with high fluctuating trend in all the selected paper companies during the study period of 10 years from 2012-13 to 2021-22. NR Agarwal Industries Ltd. shows both a maximum ratio of 41.13% in the year 2017-18 and a minimum ratio of -43.8% in the year 2014-15. About the average ratio of selected paper companies for study period of 10 years a highest ratio was 19.75% in Satia Industries Ltd. and a lowest ratio was 0.21% in Orient Paper & Industries Ltd. While the average ratio in all the remaining companies i.e. Ruchira Papers Ltd., NR Agarwal Industries Ltd., Kuantum Papers Ltd., Seshasayee Paper and Board Ltd., West Coast Paper Mills Ltd., JK Paper Ltd., Emami Paper Mills Ltd., Astron Paper & Board Mill Ltd., Tamil Nadu Newsprint and Papers Ltd. and Andhra Paper Ltd. were 14.43%, 13.97%, 12.27%, 12.20%, 11.37%, 9.79%, 9.38%, 8.10%, 7.74% and 7.48% respectively, which were in between the lowest and highest average ratio. The overall performance of return on net worth ratio was good in Satia Industries Ltd. and it was low in Orient Paper & Industries Ltd.

Return on Capital Employed: Return on capital employed is a profitability ratio that measure how efficiently a company is used its capital to generate profits. This ratio is commonly used by investors to decide whether a company is right to invest in or not. The Return on capital employed is calculated by dividing profit before interest and tax to capital employed (Total Assets – Current Liabilities). The formula for calculating return on capital employed is:

$$\text{Return on Capital Employed} = \frac{\text{Profit Before Interest and Tax}}{\text{Capital Employed}} * 100$$

Table No. 1.6 : Return on Capital Employed (In Percentage)

Year	Tamil Nadu Paper	JK Paper	West Coast Paper	Emami Paper	NR Agarwal Paper	Andhra Paper	Seshasayee Paper	Satia Paper	Orient Paper	Astron Paper	Ruchira Paper	Kuantum Paper
2012-13	4.42	1.50	1.40	2.06	1.56	-2.62	3.09	6.78	-6.47	-5.35	10.01	5.20
2013-14	7.35	-2.97	0.51	2.4	0.12	-4.54	3.83	5.74	0.79	-4.13	9.39	13.53
2014-15	5.49	-0.51	0.10	1.06	-9.11	0.03	2.56	2.66	-5.30	5.44	8.12	3.35
2015-16	6.57	2.29	-0.04	2.34	4.11	4.19	4.95	4.30	3.39	6.95	10.64	3.08
2016-17	15.21	5.86	21.26	7.80	25.54	4.52	15.74	21.26	2.48	21.32	25.15	6.85
2017-18	6.39	18.41	18.49	8.39	27.06	11.27	13.24	26.46	3.04	20.04	25.06	13.35
2018-19	14.27	23.42	25.24	13.98	28.68	35.26	26.42	26.00	8.45	27.96	23.59	12.28
2019-20	12.47	22.12	18.5	13.02	29.47	21.95	21.41	20.67	1.72	17.07	10.45	7.08
2020-21	1.93	10.98	2.59	11.94	17.09	0.25	7.09	10.42	-3.15	19.45	3.74	0.30
2021-22	4.97	14.45	15.67	21.13	17.64	16.23	10.36	14.76	-2.06	11.47	14.18	5.10
AVG.	7.91	9.56	10.37	8.41	14.22	8.65	10.87	13.91	0.29	12.02	14.03	7.01
MAX.	15.21	23.42	25.24	21.13	29.47	35.26	26.42	26.46	8.45	27.96	25.15	13.53
MIN.	1.93	-2.97	-0.04	1.06	-9.11	-4.54	2.56	2.66	-6.47	-5.35	3.74	0.30

The above table presents return on capital employed ratio with mixed trend for the time span of 10 years (2012-13 to 2021-22) in all the selected companies. A minimum ratio was -9.11% in NR Agarwal Industries Ltd. in year 2014-15 and a maximum ratio was 35.26% in Andhra Paper Ltd. in year 2018-19. In context to the average ratio of selected paper companies for the time span of 10 years, a highest ratio i.e. 14.22% showed by NR Agarwal Industries Ltd. and a lowest ratio i.e. 0.29% showed by Orient Paper & Industries Ltd. Whereas, average ratio in Ruchira Papers Ltd., Satia Industries Ltd., Astron Paper & Board Mill Ltd.,

Seshasayee Paper and Board Ltd. and West Coast Paper Mills Ltd. were 14.03%, 13.91%, 12.02%, 10.87%, 10.37% respectively, that was near to the highest average ratio. While, average ratio in JK Paper Ltd., Andhra Paper Ltd., Emami Paper Mills Ltd., Tamil Nadu Newsprint and Papers Ltd. and Kuantum Papers Ltd. were 9.56%, 8.65%, 8.41%, 7.91% and 7.01% respectively, that were in between the highest and lowest average ratio. The overall performance of return on capital employed ratio was good in NR Agarwal Industries Ltd., Ruchira Papers Ltd., Satia Industries Ltd. and Astron Paper & Board Mill Ltd. and the performance was low in Orient Paper & Industries Ltd.

Return on Assets: Return on Assets ratio is used to measure how profitable a company is in relation to its assets. This ratio can be used by management, investors and analysts to determine that a company uses its total assets efficiently to generate profit or not. The ratio is calculated by dividing profit after tax to total assets. The formula for calculating return on capital employed is:

$$\text{Return on Assets} = \frac{\text{Profit After Tax}}{\text{Total Assets}} * 100$$

Table No. 1.7: Return on Assets (In Percentage)

Year	Tamil Nadu Paper	JK Paper	West Coast Paper	Emami Paper	NR Agarwal Paper	Andhra Paper	Seshasayee Paper	Satia Paper	Orient Paper	Astron Paper	Ruchira Paper	Kuantum Paper
2012-13	2.62	1.23	0.92	1.44	0.99	-1.96	1.83	5.03	-2.91	-3.74	6.55	3.43
2013-14	4.34	-2.22	0.31	1.86	0.08	-3.15	2.44	4.24	0.34	-2.38	5.98	8.84
2014-15	3.54	-0.38	0.05	0.86	-5.04	0.01	1.57	1.92	-2.34	3.00	5.19	2.92
2015-16	4.62	1.74	-0.02	1.68	2.67	2.91	3.19	2.84	1.61	3.84	7.28	2.71
2016-17	4.69	4.53	8.39	1.05	7.54	2.8	11.69	9.18	2.1	5.8	10.81	5.86
2017-18	-0.76	7.21	14.03	0.83	12.82	7.57	9.77	11.8	2.72	8.99	10.38	6.49
2018-19	1.7	10.32	15.45	2.08	11.75	16.86	13.47	13.29	5.63	8.38	9.78	6.06
2019-20	2.33	10.38	11.52	-0.54	13.49	16.11	12.23	10.86	1.17	4.35	6.82	4.63
2020-21	-1.08	5.33	0.08	2.85	6.13	-0.34	6.79	4.94	-2.37	7.14	1.2	-0.78
2021-22	0.24	7.18	9.35	6.45	6.09	9.32	6.4	8.13	-1.32	2.65	7.19	0.8
AVG.	2.22	4.53	6.01	1.86	5.65	5.01	6.94	7.22	0.46	3.80	7.12	4.10
MAX.	4.69	10.38	15.45	6.45	13.49	16.86	13.47	13.29	5.63	8.99	10.81	8.84
MIN.	-1.08	-2.22	-0.02	-0.54	-5.04	-3.15	1.57	1.92	-2.91	-3.74	1.20	-0.78

The above table reveals return on assets ratio for the time span of 10 years in selected Indian paper companies. A minimum ratio was -5.04% in NR Agarwal Industries Ltd. in year 2014-15 and a maximum ratio was 16.86% in Andhra Paper Ltd. in year 2018-19. About the average ratio of selected paper companies for time span of 10 years a highest ratio was 7.22% in Satia Industries Ltd. and a lowest ratio was 0.46% in Orient Paper & Industries Ltd. While the average ratio in Ruchira Papers Ltd., Seshasayee Paper and Board Ltd., West Coast Paper Mills Ltd., NR Agarwal Industries Ltd. and Andhra Paper Ltd. were 7.12%, 6.94%, 6.01%, 5.65% and 5.01% respectively, which was near to the highest average ratio. In Emami Paper Mills Ltd. and Tamil Nadu Newsprint and Papers Ltd. average ratio were 1.86 % and 2.22% respectively, in both the companies the ratio was near to the lowest average ratio. Whereas the average ratio in JK Paper Ltd., Kuantum Papers Ltd. and Astron Paper & Board Mill Ltd. were 4.53%, 4.10% and 3.80% respectively, which were in between the highest and lowest average ratio. The overall performance of return on capital employed ratio was good in Satia Industries Ltd. Ruchira Papers Ltd., Seshasayee Paper and Board Ltd. and West Coast Paper

Mills Ltd. It was low in Orient Paper & Industries Ltd. Emami Paper Mills Ltd. and Tamil Nadu Newsprint and Papers Ltd.

One –Way ANOVA Test for Hypothesis Testing:

Null Hypothesis [H_0]: There is no significant difference in profitability performance in selected companies during the study period.

Alternative Hypothesis [H_1]: There is a significant difference in profitability performance in selected companies during the study period.

Table No. 1.8: One-Way ANOVA Test

Sr. No.	Profitability Ratios	Calculated Value	Table Value	Level of Significance	Result of H_0
1.	Gross Profit Ratio	6.056534	1.878388	5%	Rejected
2.	Operating Profit Ratio	2.870499	1.878388	5%	Rejected
3.	Net Profit Ratio	1.717105	1.878388	5%	Accepted
4.	Return on Net worth Ratio	1.760721	1.878388	5%	Accepted
5.	Return on Capital Employed Ratio	1.81641	1.878388	5%	Accepted
6.	Return on Assets Ratio	2.469213	1.878388	5%	Rejected

The above table indicated that in gross profit ratio, operating profit ratio and return on assets ratio, the calculated value is more than the table value so it is said that null hypotheses are rejected and alternative hypotheses are accepted in these ratios. This means there is a significant difference in these 3 ratio's profitability performances in selected companies during the study period.

While, in net profit ratio, return on net worth ratio and return on capital employed ratio the calculated value is less than the table value so it is said that null hypotheses are accepted and alternative hypotheses are rejected in these ratios. This means there is no significant difference in these 3 ratio's profitability performances in selected companies during the study period.

CONCLUSION AND SUGGESTION

The present research work analyzed and compared the profitability performance of selected paper companies for the time span of 10 years with the help of six different profitability ratios. The data analysis indicated that the profitability performance shows fluctuating trend in all the selected companies. The overall performance was good and satisfactory in Satia Industries Ltd., JK paper Ltd., Seshasayee Paper and Board Ltd. and NR Agarwal Industries Ltd. for all the selected profitability ratio during the selected study period.

While, the overall performance was low and dissatisfactory in Orient Paper & Industries Ltd. and Astron Paper & Board Mill Ltd. for all the selected profitability ratio during the selected study period. So, these two companies have to improve their profitability performance. In the results of statistical analysis, the null hypotheses are rejected and alternative hypotheses are accepted in gross profit ratio, operating profit ratio and return on assets. Whereas, the null

hypotheses are accepted and alternative hypotheses are rejected in net profit ratio, return on net worth ratio and return on capital employed ratio.

CONFLICT OF INTERESTS

The authors declare no conflict of interest.

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