

**A STUDY ON RATIO ANALYSIS AT BHARAT SANCHAR NIGAM LIMITED,
ANANTAPUR**

D. BANU BEE student, JNTUA school of management studies, Anantapur, Andhra Pradesh-515002, India

Dr. P. BASAIAH Assistant Professor, JNTUA school of management studies, Anantapur, Andhra Pradesh, India

ABSTRACT:

The project titled "A Study on Ratio Analysis in Bharat Sanchar Nigam Limited, Anantapur" is dedicated to assessing the liquidity and financial health of the company through the application of financial tools. Through a comprehensive ratio analysis technique, the study involves the computation of diverse ratios to evaluate the performance of Bharat Sanchar Nigam Limited. The primary objectives encompass determining if the company maintains a sufficient working capital reserve to address immediate expenses and if it generates substantial profits indicative of its growth trajectory. By employing profitability ratios, the research seeks to gauge the company's earnings potential. The outcomes of this ratio analysis play a pivotal role in enhancing the company's overall performance and fortifying its ability to navigate challenges, ensuring its sustained presence in the market over the long term the company's financial landscape and its competitive position in the market is achieved, offering valuable insights for informed decision-making.

KEYWORDS: Ratio analysis, Liquidity, financial position, Bharath Sanchar Nigam Limited, Profitability ratios, Working Capital.

INTRODUCTION:

Ratio analysis is a useful method in financial analysis that is used to measure a company's performance, profitability, and financial health. It involves analysing and understanding a wide range of financial statistics derived from the income statement, balance sheet, and statement of cash flows, which are among the company's financial statements. the financial records of the business. These ratios provide helpful data on the financial status, operational effectiveness, liquidity, solvency, and general management performance of the organisation.

MEANING OF RATIO ANALYSIS

The systematic use of ratios to analyse financial statements in order to identify a firm's strengths and weaknesses, past performance, and present financial status is known as ratio analysis. Ratio analysis is a fundamental stage in any planning, forecasting, and analytical processes.

Industry profile

One of the most dynamic and rapidly expanding industries in India is telecommunications. Due to the quick development of technology and the rising need for connectivity, the industry has undergone substantial expansion and transformation in the last several decades

The telecommunications industry is changing significantly due to changes in customer demand, technology, and policy. We are only able to touch with a select few issues in a single essay due to the size and scope of these advances. Telephony, or the transmission of voice signals, has long been linked to telecommunications. Video networks have developed in various ways than data communications. On the other hand, so-called digital convergence, which refers to the gradual obliteration of the distinctions between voice, data, and video networks, is what distinguishes modern telecommunications. Customers want affordable access to a variety of voice, internet, and video services with no interruptions.

Company profile

Bharath Sanchar Nigam limited (BSNL)

It was established on September 15, 2000, as BHARAT SANCHAR NIGAM LIMITED (BSNL). After the old Central Government Departments of Telecom Services (DTS) and Telecom Operations (DTO) are abolished on October 1, 2000, it assumes continuous responsibility for the provision of telecom services and network management.

NEED OF THE STUDY

- The need of the study is to evaluate and analyze the financial performance of the Bharat Sanchar Nigam Limited, Anantapur.
- The study helps in understanding profitability, efficiency and financial position of Bharat Sanchar Nigam Limited, Anantapur.

SCOPE OF THE STUDY

- The Study on Ratio Analysis is covers to Bharat Sanchar Nigam Limited, Anantapur.
- The study is based on 5 years data from 2018-19 to 2022- 23 Bharat Sanchar Nigam Limited, Anantapur.

OBJECTIVES OF THE STUDY

- To study the liquidity position of Bharat Sanchar Nigam Limited, Anantapur
- To analyse the profitability of Bharat Sanchar Nigam Limited, Anantapur.
- To know the financial position of Bharat Sanchar Nigam Limited, Anantapur.
- To evaluate the operational efficiency of Bharat Sanchar Nigam Limited, Anantapur.

RESEARCH METHODOLOGY

SOURCES OF DATA:

The study is mainly based on the “secondary data”.

Secondary data

- The secondary data was collected from the annual reports and published journals of Bharat Sanchar Nigam Limited, Anantapur.

Website: <https://www.bsnl.co.in>

TOOLS AND TECHNIQUES

- TOOLS
- Profitability Ratios
- Activity Ratios
- Liquidity ratio
- Leverage ratio
- Bar charts
- Software Used
- R-programming

LIMITATIONS OF THE STUDY

- The study is based on secondary data obtained from the published reports.
- The study is covers to a period of 5 years 2018-2019 to 2022-2023.

DATA ANALYSIS AND INTERPRETATION

1.LIQUIDITY RATIOS

Current ratio

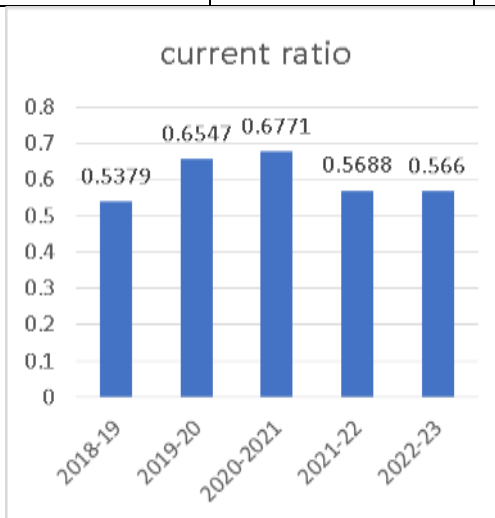
Quick ratio

Cash ratio

1.Current Ratio:

year	Current assets	Current liabilities	Current ratio
2018-19	19,22,157	35,72,930	0.5379
2019-20	36,85,961	56,29,235	0.6547

2020-21	29,49,283	43,55,119	0.6771
2021-22	28,13,483	49,46,252	0.5688
2022-23	33,78,400	59,68,321	0.5660

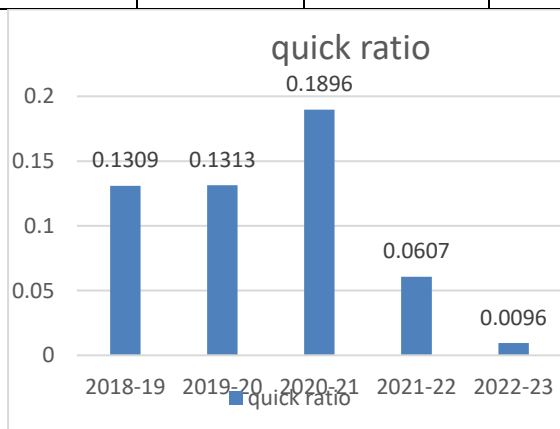


Interpretation: During the period 2018-2023 the current ratio is 0.5379, 0.6547, 0.6771, 0.5688 and 0.5660. Finally, the company have low satisfactory level in liquidity position and the company performance was poor over the years with downtrend in recent years.

Quick ratio:

Quick Ratio = Quick assets/current liabilities

year	Quick assets	Quick liabilities	Quick ratio
2018-19	4,67,808	35,72,930	0.1309
2019-20	7,39,438	56,29,235	0.1313
2020-21	8,25,761	43,55,119	0.1896
2021-22	3,00,748	49,46,256	0.0608
2022-23	5,76,393	59,68,321	0.0965

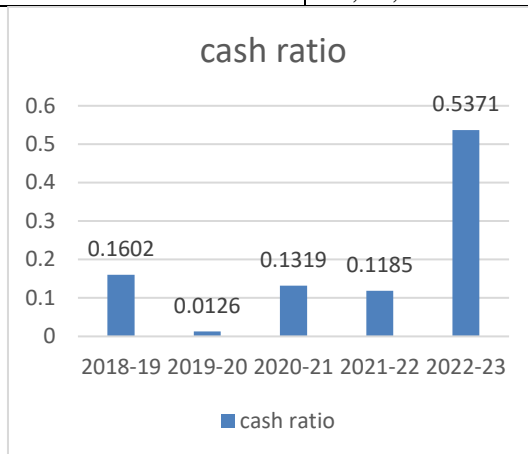


Interpretation: During the period 2018-2023 the current ratio is 0.1309, 0.1313, 0.1896, 0.0607 and 0.0965. Finally, the company have low satisfactory level in liquidity position was poor over the years with downtrend in recent years.

CASH RATIO :

Cash ratio = cash+ marketable securities/current liabilities

year	Cash and marketable securities	Current liabilities	Cash ratio
2018-19	5,72,607	35,72,930	0.1602
2019-20	7,12,574	56,29,235	0.0126
2020-21	5,74,667	43,55,119	0.1319
2021-22	5,86,456	49,46,252	0.1185
2022-23	32,05,809	59,68,321	0.5371

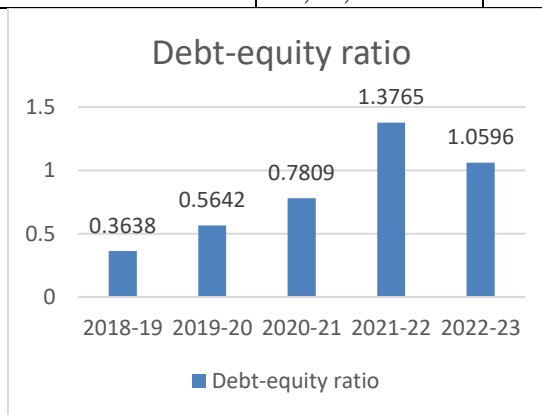


Interpretation: During the period 2018-2023 the cash ratio is 0.1602, 0.0126, 0.1319, 0.1185 and 0.5371. Finally, the company have low satisfactory level in liquidity position and the company performance was poor over the years with downtrend in recent years.

FINANCIAL RATIOS:

Debt-equity ratio = Total debt/total Equity

Year	Total debt	Total equity	Debt-equity ratio
2018-19	27,18,965	74,73,434	0.3638
2019-20	33,36,840	59,14,265	0.5642
2020-21	40,36,575	51,68,962	0.7809
2021-22	61,52,603	44,69,363	1.3765
2022-23	66,72,165	62,96,608	1.0596



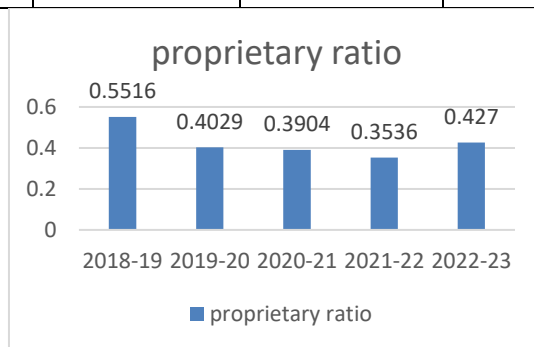
Interpretation: In the year 2018 -19 the debt-equity ratio starts with 0.3638, and it is increased to 0.5642 for the year 2019-20, again increased to 0.7809, for the year 2020-21. Later it was increased to 0.1.3765, for the year 2021-22. Later company decreases value to 1.0596, for the year 2022-23.

Proprietary Ratio

PR ratio = Proprietor’s funds/Total assets

Year	Shareholder equity	Total assets	Proprietary ratio
2018-19	74,73,434	1,35,48,276	0.5516
2019-	59,14,265	1,46,76,081	0.4029

20			
2020-21	51,68,962	1,32,84,531	0.3904
2021-22	44,69,645	1,26,39,530	0.3536
2022-23	62,96,608	1,47,45,159	0.4270



Interpretation:

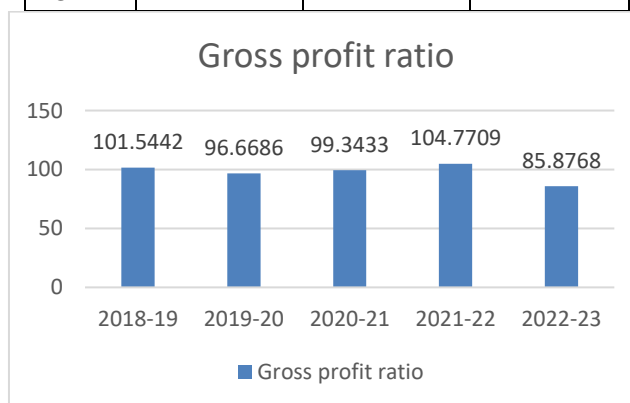
The proprietary ratio measures the proportion of assets financed by the owner's capital in a company. The trend of the proprietary ratio from 2018 to 2022(0.5516, 0.4029, 0.3904, 0.3536,0.4270) shows fluctuations. This ratio shows the lower reliance on proprietary funds.

Profitability ratios

Gross profit ratio:

Gross profit ratio = gross profit/net sales*100

Year	Gross profit	Net sales	Gross profit ratio
2018-19	18,03,533	17,76,106	101.5442
2019-20	17,29,024	17,88,609	96.6686
2020-21	17,33,720	17,45,180	99.3433
2021-22	17,61,117	16,80,922	104.7709
2022-23	16,42,634	19,12,779	85.8768

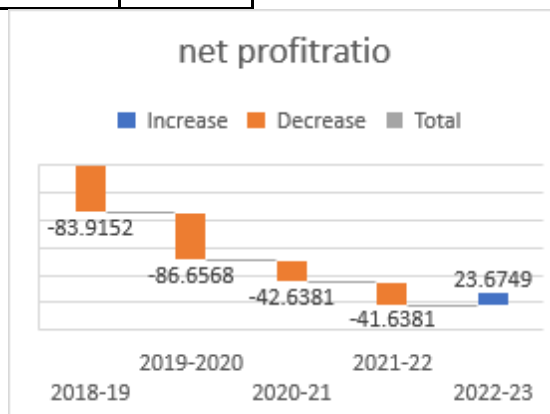


Interpretation: In 2018-19, it was exceptionally high at 101.54%. Then ratio slightly declined in 2019-20 (96.67%), but rebounded in 2020-21 (99.34%), indicating improved profitability. In 2021-

22, it reached its peak at 104.77%. However, a significant drop to 85.88% in 2022-23 raises concerns about cost control or competitive pressures.

Net profit ratio: $\text{Net Profit Ratio} = \text{Net profit}/\text{net sales} * 100$

Year	Net profit	Net sales	Net profit ratio
2018-19	-14,90,424	17,76,106	-83.9152
2019-20	-15,49,952	17,88,609	-86.6568
2020-21	-7,44,112	17,45,180	-42.6381
2021-22	-6,98,163	16,80,922	-41.5345
2022-23	4,52,850	19,12,779	23.6749



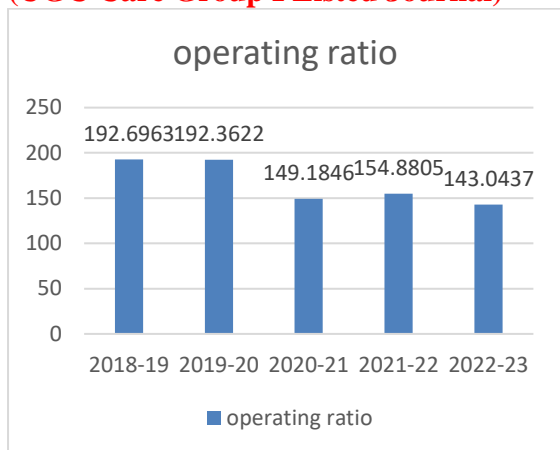
Interpretation: In 2018-19 (-83.92%) and 2019-20 (-86.66%), the company faced substantial losses. The losses improved in 2020-21 (-42.64%) and 2021-22 (-41.64%), suggesting some progress, but the company still struggled. Finally, in 2022-23 (23.67%), a positive ratio indicates a return to profitability.

ACTIVITY RATIO

Operating ratio:

$\text{Operating Ratio} = \text{Cost of goods sold} + \text{operating expenses}/\text{Net sales} * 100$

year	Operating cost	Net sales	Operating ratio
2018-19	34,22,491	17,76,106	192.6963
2019-20	34,40,608	17,88,609	192.3622
2020-21	26,03,593	17,45,180	149.1846
2021-22	26,03,421	16,80,922	154.8805
2022-23	27,36,110	19,12,779	143.0437



Interpretation

In 2018-19 (192.70%) and 2019-20 (192.36%), the ratio was high, potentially affecting profitability. The ratio improved in 2020-21 (149.18%) and 2021-22 (154.88%). Further progress was seen in 2022-23 (143.04%), indicating a continued focus on controlling operating expenses and enhanced profitability.

Activity ratios

Fixed assets turnover ratio: Fixed Assets Turnover Ratio = Net Sales / Net Fixed Assets

```

# calculation of fixed asset turnover ratio of 2018 for the year 2018
net_sales = 206715 # net sales value
net_fixed_assets = 439707 # net fixed assets value
fixed_asset_turnover = net_sales/net_fixed_assets
print(fixed_asset_turnover)
[2] 0.469917

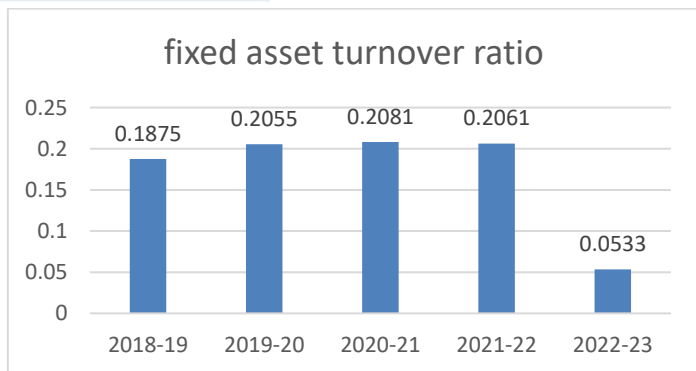
# calculation of fixed asset turnover ratio of 2019 for the year 2019
net_sales = 217005 # net sales value
net_fixed_assets = 546742 # net fixed assets value
fixed_asset_turnover = net_sales/net_fixed_assets
print(fixed_asset_turnover)
[2] 0.395197

# calculation of fixed asset turnover ratio of 2020 for the year 2020
net_sales = 258600 # net sales value
net_fixed_assets = 810449 # net fixed assets value
fixed_asset_turnover = net_sales/net_fixed_assets
print(fixed_asset_turnover)
[2] 0.319195

# calculation of fixed asset turnover ratio of 2021 for the year 2021
net_sales = 274285 # net sales value
net_fixed_assets = 832058 # net fixed assets value
fixed_asset_turnover = net_sales/net_fixed_assets
print(fixed_asset_turnover)
[2] 0.329665

# calculation of fixed asset turnover ratio of 2022 for the year 2022
net_sales = 282515 # net sales value
net_fixed_assets = 871701 # net fixed assets value
fixed_asset_turnover = net_sales/net_fixed_assets
print(fixed_asset_turnover)
[2] 0.324185

# calculation of fixed asset turnover ratio of 2023 for the year 2023
net_sales = 271700 # net sales value
net_fixed_assets = 780759 # net fixed assets value
fixed_asset_turnover = net_sales/net_fixed_assets
print(fixed_asset_turnover)
[2] 0.348055
    
```



Interpretation: In 2018-19, the fixed asset turnover ratio was 0.1875, in 2019-20, the ratio slightly increased to 0.2055 indicating a moderate increase in efficiency compared to the previous year. The trend continued in 2020-21 and 2021-22. with the ratio remaining relatively stable at 0.2081 and 0.2061 respectively, Notably, in 2023, the fixed asset turnover ratio significantly dropped to 0.0533.

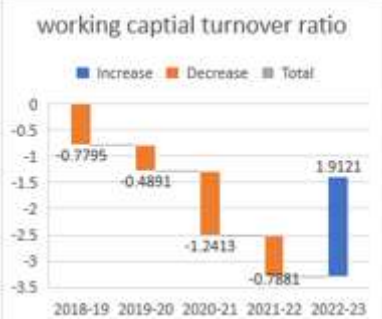
Working capital turnover ratio

Working capital turnover ratio = Net sales / Net Working capital

```

@Risk
FOR EACH YEAR IN 2018-19, 2019-20, 2020-21, 2021-22, 2022-23
  # Net Sales
  NS = 1776106
  # Net Working Capital
  NWC = -1780511
  # Working Capital Turnover Ratio
  WCTR = NS / NWC
  # Output
  WCTR
END
  
```

Year	Net Sales	Net Working capital	Working capital turnover ratio
2018-19	17,76,106	-17,80,511	-0.7795
2019-20	17,88,609	-36,56,721	-0.4891
2020-21	17,45,180	-14,05,836	-1.2413
2021-22	16,81,126	-21,33,056	-0.7881
2022-23	4,21,516	2,20,436	1.9121



Interpretation: The company started low working capital turnover ratio with -0.7795 for the year 2018-19. Later that trend continues from 2019-20 to 2021-22 (-0.4891, -1.2413, -0.7881). In the year 2022-23 The ratio significantly increased to 1.9121 it indicates the positive improvement.

Hypothesis Testing:

Null Hypothesis (H0): There is positive correlation among BSNL's current assets and current liabilities

H1: There is a negative correlation the difference between BSNL's current assets and current

```
R 4.2.1 -->
>
>
> # calculation of correlation between current assets and liabilities of BSNL for 2018-19 to 2022-23
> current_assets <- c(1812157, 3685661, 2949281, 2813483, 3379480)
> current_liabilities <- c(1872918, 3528321, 4181118, 4846293, 5968321)
> correlation <- cor(current_assets, current_liabilities)
> print(correlation)
[1] 0.9074488
>
```

liabilities.

Interpretation: The current assets and current liabilities of BSNL for the years 2018–19 to 2022–23 is strongly positively correlated, as indicated by the correlation value of 0.9074. This shows that there is a propensity for the current liabilities to increase in tandem with an increase in the current assets, and vice versa. Thus, we accept null hypothesis because there is a positive correlation between current assets and current liabilities.

Hypothesis Testing

Null Hypothesis (H0): There is negative correlation between the gross profit ratio and net profit ratio of BSNL.

Alternative Hypothesis (H1): There is a positive correlation between the gross profit ratio and net profit ratio of BSNL.

```
# calculation of correlation between gross profit ratio and net profit ratio
gross_profit_ratio <- c(101.5442, 96.6688, 99.3433, 104.7709, 85.8768)
net_profit_ratio <- c(-83.9552, -86.6588, -42.6381, -41.6381, 23.6749)
correlation <- cor(gross_profit_ratio, net_profit_ratio)
print(correlation)
```

Interpretation: The relationship between the gross profit ratio and the net profit ratio is moderately negative, as indicated by the correlation coefficient of roughly -0.6915. This shows that the net profit ratio tends to drop as the gross profit ratio rises, and vice versa. Thus, we accept null hypothesis because there is a negative correlation between current assets and current liabilities.

FINDINGS

1. During the period 2018-2023 the current ratio is 0.5379, 0.6547, 0.6771, 0.5688 and 0.5660. Finally, the company have low satisfactory level in liquidity position and the company performance was poor over the years with downtrend in recent years.
2. During the period 2018-2023 the current ratio is 0.1309, 0.1313, 0.1896, 0.0607 and 0.0965. Finally, the company have low satisfactory level in liquidity position was poor over the years with downtrend in recent years.
3. During the period 2018-2023 the current ratio is 0.1309, 0.1313, 0.1896, 0.0607 and 0.0965. Finally, the company have low satisfactory level in liquidity position was poor over the years with downtrend in recent years.
4. In the year 2018 -19 the debt-equity ratio starts with 0.3638, and it is increased to 0.5642 for the year 2019-20, again increased to 0.7809, for the year 2020-21. Later it was increased to 0.1.3765, for the year 2021-22. Later company decreases value to 1.0596, for the year 2022-23.
5. The trend of the proprietary ratio from 2018 to 2022(0.5516, 0.4029, 0.3904, 0.3536,0.4270) shows fluctuations. This ratio shows the lower reliance on proprietary funds.
6. In 2018-19, it was exceptionally high at 101.54%. Then ratio slightly declined in 2019-20 (96.67%), but rebounded in 2020-21 (99.34%), indicating improved profitability. In 2021-22, it

reached its peak at 104.77%. However, a significant drop to 85.88% in 2022-23 raises concerns about cost control or competitive pressures.

7. In 2018-19 (-83.92%) and 2019-20 (-86.66%), the company faced substantial losses. The losses improved in 2020-21 (-42.64%) and 2021-22 (-41.64%). Finally, in 2022-23 (23.67%), a positive ratio indicates a return to profitability.
8. In 2018-19 (192.70%) and 2019-20 (192.36%), the ratio was high, potentially affecting profitability. The ratio improved in 2020-21 (149.18%) and 2021-22 (154.88%). Further progress was seen in 2022-23 (143.04%).
9. In 2018-19, the fixed asset turnover ratio was 0.1875, in 2019-20, the ratio slightly increased to 0.2055. The trend continued in 2020-21 and 2021-22, with the ratio remaining relatively stable at 0.2081 and 0.2061 respectively, Notably, in 2023, the fixed asset turnover ratio significantly dropped to 0.0533.
10. The company started low working capital turnover ratio with -0.7795 for the year 2018-19. Later that trend continues from 2019-20 to 2021-22 (-0.4891, -1.2413, -0.7881). In the year 2022-23 The ratio significantly increased to 1.9121 it indicates the positive improvement.

SUGGESTIONS

- To enhance liquidity management, company take corrective actions to cover its current obligations.
- To manage the company's debt-to-equity ratio, should closely monitor and manage its debt levels to mitigate financial risk. This includes reviewing existing debt obligations, refinancing options, and optimizing debt repayment schedules.
- To improve profitability, the company should analyze its revenue streams and identify areas for growth and diversification. This involves understanding customer needs, market trends, and competitive dynamics to identify new opportunities.
- Optimize Operating Expenses: The company has made progress in controlling operating expenses, leading to improved operating ratios. However, there is still room for further optimization.
- Diversify Revenue Streams: The company might consider exploring opportunities to diversify its revenue streams to reduce reliance on a single product or market.

Conclusion

Every organisation has predetermined objectives and goals, but only careful planning and cost-effective execution will help you achieve those goals. The study concerned with the ratio analysis with reference to BSNL. The data is collected, organised, analysed and interpreted. The BSNL was increase in its expenditure. The company performance were decreased, it will effect on the profits. Company can transform their position by adopting considerable methods and tools.