Financial Performance of Food Processing Industry: A Study in Assam

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Abstract

Food Processing industry is one of the major agro-based industries. It processes raw food crops with the objective of profit motive. In Assam, varieties of horticulture crops are produced at its different parts. The state's food processing units process only a part of them. The present study aims to analyse the financial performance of the food processing industry of the state. Primary data for the study are collected from a sample of 63 food processing units of the state. Liquidity, solvency, activity and profitability ratio are applied to examine the financial performance of the industry. The study finds that liquidity performance of the food processing units is lower than the benchmark level. The solvency position of the units is also found lower than the benchmark level. The grains and cereals units are observed as the most efficient assets utilizing units. Itis observed that the grains and cereal units earn the highest returns from investment. The food processing units should minimise their liabilities and reduce their dependence on external source of finance. Grains and cereals units should be encouraged because their maximum returns earning capacity from investment fund.

Introduction

Food processing industry is a popular agro based industry satisfying community needs with respect to availability, distribution and quality of food (Zouand Prasain, 2019). Government of India has undertaken a critical responsibility for the development of food processing sector after the economic reforms (Jadhav, 2019). As a result of this, from 2015-16 to 2019-20, Indian food processing sector grew up at an annual average growth rate of 11.8 percent (Ministry of Food Processing, Government of India, 2022). But still only 10 percent of the total agricultural output of the country is processed through the food processing industrial sector (Rani and Mittal, 2021).

Assam is the most industrially advanced state of the North Eastern Region (NER) of India. At per constant price (2011-12), the annual growth rate of the industry sector

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of Assam was 11.36 percent, while at current price, it was 4.75 percent for the year 2022-23(Economic Survey, Assam, 2023-24). In terms of number of registered industrial units, the state holds the rank of 16th position in the country (Annual Survey of Industries, 2019-20).

Food processing industry is an important industry within the state. The state produces varieties of horticultural crops with its favourable agro- climatic condition. In the year 2021-22, the state produced 23.04 lakh metric ton fruits crops, 7.92 lakh metric ton tuber crops, 4.13 lakh metric ton spice crops, 57.58 lakh metric ton vegetables and 0.49 lakh metric ton plantation crop (Economic Survey Assam, 2023-24). On the other hand, the state's net sown area of 25.55 lakh hectors was used for food grains production in 2021-22 (Directorate of Economics and Statistics, Assam, 2023-24).

The state's food processing industry has been growing at an compound growth rate of 5.13 per cent within a time period of 10 years between 2009-10 to 2018-19, as per the records of Ministry of Food Processing (MOFPI), Government of India. As against this, India's food processing industry grew at compound growth rate of only 1.61 within this time period. Surprisingly, with a favourable growth of the food processing industry in Assam, the food processing industry has been still processing only a marginal portion of the state's horticulture crops. Thus, there is a opportunity and potential in food processing activities in Assam.

Review of Literature

Several studies had been undertaken on different aspects of the food processing industry. For example, Kiminami, et al. (2000) examined the food industry of East-Asian Countries from the view points of international specialization. It was found that international specialization of food industry among East Asian Countries (EACs) changes after the 1980s because of the increasing food processing industries in these countries. It is found changes at the distribution channels as well as food processing activities as a result of Foreign Direct Investment (FDI). Salimonu, et al. (2006) investigate the installed capacities of the food and beverages industries in Nigeria. The study observes declining average capacity utilization and an overall instability in the raw material utilization. It recommended imposing import restrictions of those items, which could be produced within the country, and the government could provide necessary supports to the entrepreneurs that desire to produce it. Wen-Ge Fu et al. (2011) examined the technical efficiency of wheat and paddy rice processing in China by applying stochastic frontier model. It shows that rice processing firms enjoy higher technical efficiency compared to flour processing firms. Again, it also revealed a negative growth of technical efficiency in a major portion of the firms. The technical efficiency in case of both rice and flour processing industry is observed only about 50 per cent.

Roy (1997) evaluated the growth and prospects of food processing industry in India and low level of the food processing in the country. It is identified that inadequate post-harvest technology, transport and marketing problems, weak linkages between growers and

processors and inadequate domestic demand for processed food items are the factors for low level of processing in the food processing sector. Sukla, et al. (2008) examined the problems and prospects of the fruits and vegetable processing industry in India. The study revealed that it commercially processes only 1.78 percent of its total production inspite of remarkable production of fruits and vegetables. The low level of processing in India is mainly due to the inadequate post-harvest technology, lack of transport and marketing provisions, absence of linkage between processing units and the ultimate buyers. Gopalan (1987) examined financial health of the Dharmapuri District Co-operative Sugar mill in the state of Tamil Nadu with the help of various financial ratios normally used in financial analysis. The analysis finds a good performance of the Sugar mill. The study suggests ways for achieving operational efficiency of the unit. Singha, et al. (2012) study the trend, status and find out the constraints of Indian food processing industrial units. The investigators mention that India's processing industry is largely under the control of unorganized sector. Absence of adequate infrastructure, inadequacy of information and marketing linkages, lack of electricity supply, and the absence of cold chain systems are the burning problems of the food processing industry. The study suggests popularisation of nutritious processed food among consumers, set up of distribution network, development of marketing channels, improvement of food quality standards and better provision of institutional framework to develop manpower for improving research and development.

Bhattacharyya (2013) studies the growth of food processing units and the nature of employment generated in them in Kamrup district of Assam. The study finds that availability of raw materials is the most important factor for the growth of fruits and vegetables processing industry in the district. Lack of working finance is observed as the top most serious problem of the processing industry in the district. The study suggests that the govt. officials should undertake and initiate awareness raising programmes for the better performance of food processing sector. Gogoi (2017) studies the financial health of food processing industry in Tinsukia District of Assam. The study identifies infrastructural problem, existence of large number of unskilled workers, absence of wider market, improper banking provisions, and absence of the Government supports as the major problems of the district food processing units. Mehdi (2017) tries to study on the skill gap and its requirement in the field of food processing industry of Assam. The investigator finds that majority of the states food processing units involve in processing activities such as flour mills, food and fruit processing. Shortage of adequate manpower in the food processing activities is identified as a serious problem. Sarma (2018) studies a sample of 90 industrial units with five different categories in the district of Kokrajhar, Assam. It is found that rice mill is the highest profit earning units as compared to investment. The investigator suggests giving focus on the development of fruits and vegetable processing units in the district. It also suggests distribution and provision of advanced tools and machinery to the hand of young entrepreneurs of the district.

Objectives

The study was carried out with the following objectives:

1. Analyse the financial performance of the food processing units in Assam

2. To access the financial problems, if any.

Hypotheses

The following hypotheses have been tested:

1. There is no significant difference between the liquidity ratios of different categories of food processing units.
2. There is no significant difference between the solvency ratios of different categories of food processing units.
3. There is no significant difference between the net profit ratio of different categories of food processing units

Research Methodology

The relevant primary data are collected through interview schedule from a sample of 63 entrepreneurs of food processing units out of 384 entrepreneurs from three districts of Assam, namely, Tinsukia (representing upper Assam), Nagaon (reprenting middle Assam) and Dhubri (representing lower Assam). In selecting the sample entrepreneurs, focus is given to include all the four categories of food processing units as defined by MOFPI, Government of India. As per the official website of Director of Horticulture and Food Processing, Government of Assam, two categories food processing activities (included in MOFPI, Government of India), namely, processing of fisheries and that of meat and poultry are not observed on commercial basis. The primary data from the respondent entrepreneurs are collected for the financial year 2023, covering from 1st April, 2022 to 31st March 2023. The relevant secondary data for the study are collected from various issues of Statistical Hand Book of Assam and DICs of Tinsukia, Nagaon and Dhubri District.

The financial performance of the food processing industry of Assam is analysed in the present study from the view points of liquidity, solvency, efficiency and profitability. The following financial ratios are applied in the present study:

1. Liquidity measurement:-Current Ratio and Quick Ratio

    i) Current Ratio= (Current Assets)/(Current Liabilities)

Current Assets= cash in hand, cash in bank, sundry debt, stock, loan and advance to others, small scale investment like fixed deposits, etc.

Current liabilities= creditors, short term loans taken for one year time period, bank overdraft, cash credit, advance tax and insurance premiums and all others payable. Bench mark for current ratio is 2:1.

    ii) Quick Ratio= (Quick Assets)/(Current Liabilities)

Quick Assets=Current Assets- inventories- prepaid expenses and *Current liabilities* =

already shown at Current Ratio. Bench mark for Quick Ratio is 1:1.

2. Solvency Measurement- Equity Ratio and Debt Ratio

i) Equity Ratio= (Shareholder^' s Equity)/(Capital Employed)

Shareholder's Equity= Own capital and *Capital Employed*= Own capital +Borrowed capital. 0.5 or more is considered as good ratio.

ii) Debt Ratio = (Total outside liabilities)/(Total Assets)

= Total short term liabilities (short term loan, bank over draft and cash credits)+Long term liabilities (borrowed capital). *Total assets*=Current Assets + Non-current Assets ,i.e. fixed asset. Normally 0.4 or less is considered as good ratio.

3. Efficiency measurement -Total Asset Turnover Ratio and Fixed Asset Turnover Ratio

i) Total Asset Turnover Ratio= (Net Sales)/(Total Assets)

Net Sales= Gross sale-allowance- discounts-returns. *Total assets* = Current Assets + Non current Assets, i.e. fixed asset. There is no bench mark ratio for total asset turnover ratio, but higher ratio is preferable.

ii) Fixed Asset Turnover Ratio= (Net sale)/(Fixed Assets)

Net Sales= Already shown at Total Assets Turnover Ratio. *Fixed Assets*= value of land property+ factory building +Machine +fixtures and furniture. There is no bench mark ratio for fixed asset turnover ratio, but higher ratio is preferable.

4. Profitability measurement-Return on Investment(ROI) and Net Profit Ratio (NPR)

i) Return on Investment (ROI)= (Returns or Profits or Earnings)/(Investment or Sales) ×100

Profits stands for net profits= Gross sale- Cost of Goods sold - Operating expenses Investment = Shareholders' Fund (or) Investments. There is no bench mark ratio for ROI, but higher ratio is preferable.

ii) Net Profit Ratio (NPR)= (Net Profit)/(Net Sale) ×100

Net Profit= Gross profit- Operating expenses. *Net sales*= Gross sales - Returns, Allowances, and Discounts. There is no bench mark ratio for NPR, but higher ratio is preferable.

Findings and Discussion

Liquidity Measurement: Liquidity shows how well a business firm can manage its

short term liability with short term assets. For measuring liquidity, the present study uses two liquidity ratios: Current Ratio and Quick Ratio.

Current Ratio: Current ratio is the ratio between current assets to current liabilities. Current ratio shows the extent to which the current liabilities (to be paid back within 12 months' duration) are covered by its current assets (assets to be realised within 12 months' duration). A generally acceptable current ratio is 2:1 (The institute of Chartered Accountants of India, 2021).Table 1 displays the category wise current ratio of the food processing units of the study area.

Table 1: Categorywise Current Ratios of Food Processing Units for the Year 2022-23

Category	Current Assets (Rs.) (Col.-I)	Current Liabilities (Rs.) (Col.-II)	Current Ratio Col.-III [(Col.(I))/(Col.II)]	
	Mean	Mean	Mean	SD
Dairy	2706485	2372685	1.1406	0.1110
Fruits & Vegetables	1050430	982318	1.0693	0.2756
Grains and cereals	1912065	1367198	1.3985	0.6230
Consumer food	1310713	999518	1.3113	0.3992
All Units	1744923	1430430	1.2198	0.5594

Source: Field Survey, 2023

It is observed from Table 1 that the current ratio of all the individual categories of food processing units as well as the all units, in general, is less than the bench mark ratio of 2:1. It implies that the current liabilities of the units are much more comparing to their current assets. Standard deviation (SD) of all the categories is found to be 0.5594 (i.e. lower than 1), implying that the current ratios are more or less are following same pattern in the food processing units of the study area.

Quick Ratio: Quick ratio, also called as acid-test ratio, measures the performance of a business firm to pay-off its instant obligation without relying on its inventories. It is the ratio between quick assets (current assets excluding inventories) to current liabilities. The bench mark quick ratio is 1:1 (The institute of Chartered Accountants of India, 2021). Table 2 displays the category wise quick ratio of the food processing units.

Table 2:Category wise Quick Ratio of Food Processing Units for the Year 2022-23

Category	Current Assets (Rs.) (Col.-I)	Current Liabilities (Rs.) (Col.-II)	Current Ratio Col.-III [(Col.(I))/(Col.II)]	
	Mean	Mean	Mean	SD
Dairy	2223885	2372685	0.9372	0.1155
Fruits & Vegetables	866230	982318	0.8818	0.1629
Grains and cereals	1439477.7	1367198.4	1.0528	0.5517
Consumer food	1112092.5	999518.9	1.1126	0.4006
All Units	1410421	1430430	0.9860	0.4932

Source: Field Survey, 2023

Table 2 indicates that the quick ratios of dairy as well as fruits and vegetable category units are less, while those of grains and cereals as well as consumer food category units are more than bench mark ratio. Quick ratio of a food processing unit, in general is found to be lower than the benchmark ratio which implies that the food processing units maintain some amount of inventory and rely on selling of inventory for clearing their current liabilities. The SD of quick ratios of all units is found to be less than 0.5 which indicates almost similar pattern of quick ratios throughout the industry.

Solvency Measurement: Analysis of solvency measurement provides the information about financial capacity of industrial units to repay long-term liabilities. Solvency position in the study is analysed by using two ratios, namely, equity ratio and debt to equity ratio.

Equity Ratio: Equity ratio is the proportion of the owner's funds to the total funds employed in a business entity. Normally, higher the equity ratio the lower is the degree of risk, as higher ratio indicates higher size of owner's fund comparing to borrowed fund. The ideal equity ratio is 1:2 or 50 per cent. Table 3 shows the equity ratio of the food processing units of the study area.

Table 3: Category wise Equity Ratios of the Food Processing Units for the Year 2022-23

Category	Equity Capital (Rs.) (Col.-I)	Capital Employed (Rs.) (Col.-II)	Capital Employed Col.-III (Col.–I)/(Col.(I+II))]	
	Mean	Mean	Mean	SD
Dairy	1985000	2596000	0.4333	0.0213
Fruits & Vegetables	1022000	1219200	0.4560	0.0614
Grains and cereals	1583523	1786762	0.4698	0.0990
Consumer food	1131158	1157857	0.4941	0.0980
All Units	1430420	1689954.8	0.4584	0.0960

Source: Field Survey, 2023

From table 3, it is clear that on an average, equity ratios of all the food processing units are less than0.5. It means that out of the total capital invested, the owners' capitals are less than their borrowed capital. It indicates an unhealthy long-term solvency position of the units. SD of equity ratios of all the units are also found to be 0.096 implying approximately similar pattern of equity ratios in all the units.

Debt Ratio: The debt ratio is a financial ratio that shows leverage of a business firm. It is the ratio of total outside liabilities to total assets. It can be interpreted as the proportion of a firm's assets that are financed by debt. From a pure risk perspective, debt ratios of 0.4 or lower are considered better, while a debt ratio of 0.6 or higher makes it more difficult to borrow money (Ross,2022). The category wise debt ratios of the units are shown at Table 4.

Table 4: Category wise Debt Ratio of Food Processing Units for the Year 2022-23

Category	Total outside liabilities (Rs.) (Col.-I)	Total Asset(Rs) (Col.-II)	Debt Ratio(Col.-III) (Col.–I)/(Col.-II)	
	Mean	Mean	Mean	SD
Dairy	2596000	6343185	0.4092	0.0197
Fruits & Vegetables	1219200	3429458	0.3555	0.0329
Grains and cereals	1786762	4963579	0.3599	0.0614
Consumer food	1157857	4076249	0.3821	0.0510
All Units	1689955	4703117	0.3593	0.0605

Source: Field Survey, 2023

Table 4 shows that the debt ratio of all the units is 0.3593 which is lower than the ideal debt ratio of 0.4 indicating good solvency position. It is observed that among the categories only dairy units experiences solvency issue, as its debt ratio is found to be 0.4092 or more than 0.4. SD of debt ratios of all the units is only 0.0605 which means that all the units have almost similar pattern of debt ratios.

Efficiency Measurement: Efficiency measurement indicates efficiency of business firms in the application of their various assets. Here, efficiency of the food processing units is checked through two prominent efficiency ratios, namely, total assets turnover ratio and fixed assets turnover ratio.

Total Asset Turnover Ratio: Total asset turnover ratio is used to examine the efficiency of a business firm from the view point of uses of its total assets. It is the ratio of net sale to total assets of a business firm. There is no ideal total assets turnover ratio. But, generally, a higher ratio is favored, because it implies that a firm is efficient in generating sales or revenues from its asset base (Hayes, 2024). Table 5 shows the category wise total assets turnover ratio of the food processing units.

Table 5:Total Assets Turnover Ratios of Food Processing Units for the Year 2022-23

Category	Net Sale (Rs.) (Col.-I)	Total Assets (Rs) (Col.-II)	Total Assets Turnover Ratio (Col.-III)(Col.–I)/ (Col.-II)]	
	Mean	Mean	Mean	SD
Dairy	6624877	6343185	1.0444	0.0434
Fruits & Vegetables	2865142	3429458	0.8354	0.1657
Grains and cereals	15842149	4963579	3.1916	2.4685
Consumer food	4454298	4076249	1.0927	0.5369
All Units	7446616.5	4703117.75	1.5833	2.3110

Source: Field Survey, 2023

It is clear from table 5 that the total assets turnover ratio is the highest (3.1916) in case of grains and cereals category. In other words, all the categories, grains and cereals

processing units are utilizing their assets in the most efficient manner. SD of total assets turnover ratios of all the units is observed to be 2.3110 indicating some sort of dissimilarity in the pattern of total assets turnover ratio among the various units.

Fixed Assets Turnover Ratio: Fixed assets turnover ratio shows how well a firm uses its fixed assets for generating its sales. It is the ratio of net sale to a firm's fixed assets. A high fixed assets turnover ratio indicates efficient utilization of fixed assets in generating sales (The institute of Chartered Accountants of India, 2021). Table 6 displays the fixed assets turnover ratios of the food processing units in the study area.

Table 6: Fixed Assets Turnover Ratios of Food Processing Units for the Year 2022-23

Category	Net Sale (Rs.) (Col.-I)	Fixed Assets (Rs) (Col.-II)	Fixed Assets Turnover Ratio(Col.-III)[(Col.–I)/ (Col.-II)]	
	Mean	Mean	Mean	SD
Dairy	6624877	3636700	1.8216	0.0889
Fruits & Vegetables	2865142	2379028	1.2043	0.2576
Grains and cereals	15842149	3051514	5.1915	3.7181
Consumer food	4454298	2765535	1.6106	0.7811
All Units	7446616.5	2958194.25	2.5172	3.5601

Source: Field Survey, 2023

It is seen from the table 6 that the fixed assets turnover ratio of grains and cereals category is the highest in the food processing industry. Thus, fixed assets are utilized in the most efficient manner comparing to other categories. SD of fixed assets turnover ratios of all the units is observed to be 3.5601 indicating some sort of dissimilarity in the pattern of fixed assets turnover ratios among the various units.

Profitability Measurement: The ability of an industry to earn its profits is well explained by judging its profitability measurement. The present study analyses profitability of food processing units based on two ratios: return on investment (ROI) and net profit ratio (NPR).

Return on Investment (ROI): Return on investment is used to examine how much return an investor will receive from his invested fund. ROI is calculated by the ratio of net profit to invested fund. ROI of various categories are shown at table 7.

Table 7 shows that ROI of grains and cereals is the highest (123.65 percent) among all the categories. It implies that the investment in grains and cereals category can generate maximum returns comparing to those invested in other categories. SD of ROIs of all the categories is observed to be 51.5289 which indicate dissimilarity in the ROI among various units of the food processing units.

Table 7: ROI of the Food Processing Units for the Year 2022-23

Category	Net Profits (Rs.) (Col.-I)	Investment (Rs) (Col.-II)	ROI (%)(Col.-III) [(Col.–I)/(Col.-II)×100]	
	Mean	Mean	Mean	SD
Dairy	1502000	3060000	49.08	2.9335
Fruits & Vegetables	1362080	1762000	77.3	11.1692
Grains and cereals	3402862	2751933	123.65	52.5321
Consumer food	1765394	2311000	76.39	20.6500
All Units	2008084	2471233	81.6	51.5289

Source: Field Survey, 2023

Net Profit Ratio (NPR): The ratio between net profit and net sales is known as Net Profit Ratio (NPR). Net profit refers to the proportion of sales that is left over after adjustment of all relevant expenses. This ratio expresses overall efficiency of a firm in operating its business. The NPRs of various categories of units is shown at table 8.

Table 8: Category wise NPR of the Food Processing Units for the Year 2022-23

Category	Net Profits (Rs) (Col.-I)	Net Sale (Rs.) (Col.-II)	Net Profit Ratio (%) (Col.-III) [(Col.–I)/ (Col.-II)×100]	
	Mean	Mean	Mean	SD
Dairy	1502000	6624877	22.67	1.1359
Fruits & Vegetables	1362080	2865142	47.53	3.1573
Grains and cereals	3402862	15842149	21.47	10.1986
Consumer food	1765394	4454298	39.63	10.4923
All Units	2008084	7446617	26.96	12.8153

Source: Field Survey, 2023

From Table 8, it is observed that NPR of fruits and vegetable category is the highest (47.53 percent) followed by that of consumer food category (39.63 per cent). The SD of NPRs of all the units is found to be 12.8153 implying some sort of dissimilarity in the NPRs of the units of the industry.

Hypotheses Testing

First Hypothesis: There is no significant difference between the liquidity ratios of different categories of food processing units.

The descriptive statistics of the liquidity ratios of four categories of food processing units are given in the Table 9.

Table 9: Descriptive Statistics of Liquidity Ratios of Different Category of Food Processing Units

Liquidity Ratios	Category	N	Mean	SD	Std. Error	Minimum	Maximum
Current Ratio	Dairy	2	1.149	0.111	0.079	1.070	1.227
	Fruits and vegetables	5	1.099	0.276	0.123	0.783	1.481
	Grains and cereals	42	1.527	0.623	0.096	0.596	2.901
	Consumer food	14	1.390	0.399	0.107	0.975	2.523
	Total	63	1.451	0.559	0.070	0.596	2.901
Quick Ratio	Dairy	2	0.946	0.116	0.082	0.864	1.028
	Fruits and Vegetables	5	0.900	0.163	0.073	0.692	1.092
	Grains and cereals	42	1.156	0.552	0.085	0.389	2.548
	Consumer food	14	1.182	0.401	0.107	0.819	2.318
	Total	63	1.135	0.493	0.062	0.389	2.548

Table 10: Result of One-Way ANOVA Test for Difference Between the Liquidity Ratios of Different Category of Food Processing Units

Liquidity Ratios	Particulars	Sum of Squares	df	Mean Square	F	p-value
Current Ratio	Between Groups	1.096	3	0.365	1.177	0.326
Quick Ratio	Between Groups	0.396	3	0.132	0.53	0.663

The result of the One-Way ANOVA test for difference between the liquidity ratios of different categories of food processing units showed that the difference is not significant. All the measures of liquidity performance, such as, current ratio and quick ratio show that there is no significant difference in these ratios of different categories of food processing units. This implies that all the categories of units have similar liquidity performance. Hence, the first hypothesis could not be rejected at any level of significance. This implies that all the four categories of food processing units have similar financial performance in terms of liquidity ratios.

Second Hypothesis: There is no significant difference between the solvency ratios of different categories of food processing units.

The descriptive statistics of the solvency ratios of four categories of food processing units are given in the Table 11.

Table 11:Descriptive Statistics of the Solvency Ratios of Four Categories of Food Processing Units

Solvency Ratios	Category	N	Mean	SD	Std. Error	Minimum	Maximum
Equity ratio	Dairy	2	0.648	0.021	0.015	0.633	0.664
	Fruits and Vegetables	5	0.577	0.061	0.027	0.514	0.662
	Grains and cereals	42	0.634	0.099	0.015	0.397	0.810
	Consumer food	14	0.664	0.098	0.026	0.539	0.916
	Total	63	0.637	0.096	0.012	0.397	0.916

Debt ratio	Dairy	2	0.251	0.020	0.014	0.237	0.265
	Fruits and Vegetables	5	0.355	0.033	0.015	0.312	0.392
	Grains and cereals	42	0.326	0.061	0.009	0.211	0.460
	Consumer food	14	0.285	0.051	0.014	0.155	0.356
	Total	63	0.317	0.061	0.008	0.155	0.460

Table 12: Result of One-Way ANOVA Test for Difference Between Solvency Ratios of Different Category of Food Processing Units

Solvency ratios	Particulars	Sum of Squares	df	Mean Square	F	p-value
Equity ratio	Between Groups	0.029	3	0.01	1.063	0.37
Debt ratio	Between Groups	0.033	3	0.011	3.39***	0.02

*Note: *** indicate significant at 0.05 level of significance.*

The result of the One-Way ANOVA test for difference between the solvency ratios of different categories of food processing units showed that in case of equity ratio the difference is not significant. However, the result showed that there is a significant difference between debt ratio of difference categories of food processing units. Since there is a significant difference in one solvency ratio out of the two ratios, it can be inferred that there is a significant difference in the solvency performance of different categories of food processing units. *Hence, the second hypothesis* can be rejected. This implies that all the four categories of food processing units have different solvency performance.

Third Hypothesis: There is no significant difference between the net profit ratio of different categories of food processing units.

The descriptive statistics of the Net Profit Ratios of four categories of food processing units are given in the Table 13.

Table 13:Descriptive Statistics of the Net Profit Ratios of Four Categories of Food Processing Units

Category of units	N	Mean	SD	Std. Error	Minimum	Maximum
Dairy	2	0.2166	0.0108	0.0076	0.210	0.220
Fruits and vegetables	5	0.4642	0.0317	0.0142	0.430	0.510
Grains and cereals	42	0.2649	0.1002	0.0155	0.090	0.360
Consumer food	14	0.426	0.1010	0.0270	0.270	0.570
Total	63	0.315	0.1243	0.0157	0.090	0.570

Table 14: Result of One-Way ANOVA Test for Difference Between Net Profit Ratios of Different Category of Food Processing Units

Particulars	Sum of Squares	df	Mean Square	F-Statistic	p-value
Between Groups	0.409	3	0.136	14.648***	0.00
Within Groups	0.549	59	0.009		
Total	0.957	62			

*Note:***indicates significant at 0.01 level of significance*

The result of the One-Way ANOVA test showed that the difference between the net profit ratios of different categories of food processing units was significant at 0.01 level of significance. Hence, the third hypothesis could not be accepted. This implies that all the four categories of food processing units have different net profit ratios.

Financial Problems Observed

- Liabilities are found to be more than their assets as indicated by lower current ratio of all units comparing to the bench mark ratio.
- Food processing units are holding inventories and waiting for the sales proceeds for clearing liabilities as their general quick ratio is found to be less than the bench mark quick ratio.
- Equity ratios of the food processing units are less than 0.5 indicating less amounts of owners' capitals (or more amount of borrowed capital) to the total capital invested.
- Dairy category are depending more on external debt as its debt ratio is found to be more than the ideal level.

Conclusion

From the study, it can be concluded that the financial performance of the food processing industry of Assam is not satisfactory. The liquidity measurement analysis shows that current ratio and quick ratio of a food processing industrial units in general are lower than their bench mark level. The solvency performance displays that equity ratio and debt ratio of a unit, in general, are also found to be lower than the respective bench mark level. In case of efficiency measurement, grains and cereals category is the most efficient category as its total assets and fixed assets turnover ratios are found to be highest among all categories. ROI is found to be highest in case of grains and cereals, while NPR is observed to be the highest in case of fruits and vegetable.

Findings of the study may lead to the following policy implications: The food processing units should reduce their liabilities and steps should be taken for increasing their assets. The units should increase the share of own capital in the total capital invested and reduce their dependency on borrowed capital so far as it is possible. Encouragement should be given for establishing more grains and cereals as well as fruits and vegetables processing units because of their good returns from investment and higher net profit ratio.

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