Marketing Performance and Problems of Small Scale Agro-Processing Industry

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ABSTRACT:
Agro-processing industry refers to the subset of manufacturing that processes raw materials and intermediate products derived from the agricultural sector. The term agriculture includes agricultural farm, livestock, fisheries and forestry. Similarly, processing may refer to primary processing only or it may include secondary and tertiary processing as well. The processing is done on raw material for conservation, handling and value addition to make them usable as food, feed, fiber, fuel or industrial raw materials. Agro-processing industry has a symbiotic links with agriculture, rural and economic development. A study of small scale agro-processing industry is carried out to assess the marketing performance and identify the marketing problems. This research is interdisciplinary in nature and would help existing entrepreneurs in understanding their problems and arriving at appropriate solutions so as to improve their performance.

KEYWORDS: Agro-Processing Industry, Marketing, Practices, Performance, Problems

1.0. INTRODUCTION:

a) Concept of Agro-Processing Industry:
‘Agri-Business’ is a wider term and encompasses all operations involved in the manufacture and distribution of farm supplies, production activities on the farm and the storage, processing and distribution of farm commodities and the items made from them. ‘Agro-Industry’ is part of agri-business. Agro-industries are such industries which make direct use of the agricultural produce as raw materials on the one hand and supply inputs to agriculture on the other. They are related to inputs and outputs of agriculture. ‘Agro-Processing Industry’ is part of Agro-Industry.

A common and traditional definition of agro-processing industry refers to the subset of manufacturing that processes raw materials and intermediate products derived from the agricultural sector. The term agriculture includes agricultural farm, livestock, fisheries and forestry. Similarly, processing may refer to primary processing only or it may include secondary and tertiary processing as well. The processing is done on raw material for conservation, handling and value addition to make them usable as food, feed, fiber, fuel or industrial raw materials.

b) Significance of Agro-Processing Industry:
Agro-processing industry, with its strong forward and backward linkages, has manifold contribution to agricultural and economic development. Agro-processing industry has a symbiotic links with agriculture, rural and economic development. Thus, agro-processing industry can function as catalytic agent to bring about take-off in agriculture and ultimately in economy as a whole. Agro-processing industry leads to following benefits.

i) Benefits to Consumers:
Agro-Processing transforms the products originating from agricultural sector into edible, usable, palatable and nutritional form. It increases the shelf life of the products thereby help in conservation. Agro-Processing satisfies the consumers at a lower cost and saves the time of the consumers and relives them from the difficulties experienced in processing.
ii) **Benefit to Producers-Entrepreneurs:**
Agro-Processing widens the market. Processed products can be taken to distant and overseas market at lower cost. Agro-Processing thus can increase the sales and profits of the producer to a great extent.

iii) **Benefits to Agriculture: Backward Linkages**
Agro-Processing industry acts as stimulus to agricultural production, increases agricultural income, provide assurance of market and returns to the farmer, absorbs surplus agricultural labour, improves the quality and productivity of agriculture, promotes optimum use of resources and increases capital formation. Agro-processing leads to agricultural prosperity.

iv) **Benefits to Economy:**
Agro-Processing industry generate large and immediate employment, contributes in production and exports, promotes dependent industries and services, in turns help develop infrastructure, promotes entrepreneurial culture, encourages use of domestic and latent resources and leads to the decentralization of the process of development so as to promote social welfare by way of equitable distribution of income and wealth.

c) **Classification of Agro-Processing Industry:**
Agro-processing industry is classified based on various parameters – nature and stage of the processing, type of process, raw materials, product etc. All these classifications are useful as they throw light on the specific nature and complexities involved in agro-processing. In India, Central Statistical Organisation (CSO) has classified all economic activities using ‘National Industrial Classification (NIC). The Government and its agencies use it for maintaining statistical database. Therefore the framework of the NIC is used as basis for classification of agro-processing industry in this research. Agro-processing industry is classified into two categories – food and non food sector. ‘Food’ sector is divided into 10 product categories and ‘Non-Food’ sector is divided into 7 product categories.

d) **Concept and Definition of Small Scale Industry:**
Worldwide, the small scale enterprises have been accepted as the engine of economic growth and for promoting decentralization and equitable development. The Small Scale Industry constitutes an important segment of Indian economy in terms of its contribution to industrial production, exports, employment and creation of an entrepreneurial base. Since 1950, when the Indian government made its first attempt to classify industries in small scale sector, the criterion to define small scale has evolved over a period of years. Recently the parliament enacted “Micro, Small and Medium Enterprises Development Act (MSMED)” in 2006. As per the act the enterprises are classified in two categories viz. Manufacturing Enterprises and Service Enterprises. Manufacturing Enterprises are further sub-divided into two categories – Micro Enterprises (Investment in Plant and Machinery up to Rs. 25 Lakhs) and Small Enterprises (Investment in Plant and Machinery above Rs. 25 Lakhs up to Rs. 5 Crores)

2.0. **LITERATURE REVIEW AND NEED FOR RESEARCH:**
In view of its role in the economic development of a country, many research works have been conducted on various aspects of the agro-processing industry. Literature review reveals following things.

J. Wilkinson and R. Rocha\(^1\) in their study on, “The Agro-Processing Sector: Empirical Overview, Recent Trends and Development Impacts” have taken overview of agro-processing sector world over and pointed out recent trends in it. In another study, “Small Scale Food Processing in Mozambique, South Africa and Zambia”, Saasa K Atkinson and M.J. Cardoso\(^2\) highlight the potential contribution of small scale food enterprises to the economies of these countries, and discuss the constraints such enterprises face including poor access to finance and unfavourable infrastructural and regulatory environment. In another study, “Status of Rural-Based Small and Medium Food Processing Industry in Japan”, Isamu Sakurai\(^3\), has presented status of the rural based small and medium food processing industry in Japan and argued their development from the point of view of economic development. Alastair Hicks\(^4\) in his study on “Issues and Strategies in Development of Rural-Based Small and
Medium Food Industry in Asia and the Pacific” has taken review of Asia-Pacific region countries and pointed out the issues and strategies in development of rural based small and medium food industry.

U K. Srivastava’s study, “Agro-Processing Industries: Potential, Constraints and Task Ahead” analyzed the profile and trends in the growth of agro-processing industries and identified constraints of agro-processing industries. R.P. Kachru’s study on “Agro-Processing Industries in India: Growth, Status and Prospects” provided a summary of the growth history of the sector covering role of R&D, recent trends vis-a-vis crop-wise status of agro processing industrialization and problems, export trends, SWOT analysis and thrust areas for future for achieving greater role of this sector in the national economy. In another study, “Size Structure of Agro-Industry: A Linkage Analysis”, Sandip Sarkar’s attempts to explain the size, structure of agro-industry of India based on 21 group of agro-industries.

Review of research reveals that study of agro-processing industry is conducted on various product categories like fruit processing, milk processing, sugar industry etc. and not on the whole agro-processing industry. Further in the research work conducted so far focus is on the product categories in agro-food sector rather than agro-nonfood sector. The research is conducted on large scale industries like sugar and not much work is done on small scale agro-processing industry. Another aspect of the research work done on agro-processing industry shows that focus is given on the technical side of the processing rather than managerial side.

On this backdrop, a need was felt to study agro-processing industry especially small scale in operation with focus on the marketing practices, performance and problems of the Industry. Ahmednagar district offers ideal place for the research because of its profile. Ahmednagar is largest district in the state of Maharashtra in India in terms of geographical area and predominantly rural. The agro-processing industry has prominent position in the district. Ahmednagar is known as birth place for co-operatives like sugar, milk. The first cooperative sugar factory in Asia was established by a visionary Padmashree Dr. Vithalrao Vikhe Patil at Pravanagar in Ahmednagar District. Today there are many sugar factories making Ahmednagar as the leading district in the state in sugar production. Thus agro-processing industry has lead the industrial and all round development of the district.

3.0. RESEARCH METHODOLOGY:

a) Objectives of the Research:
The objectives of the research are as follows.
1) To assess the marketing performance of the Small Scale Agro-Processing Industry.
2) To identify the marketing problems of the Small Scale Agro-Processing Industry.

b) Scope of the Research:
The scope of the research is as follows.
1) The scope of the research covers the all the 14 tehasils of Ahmednagar district of the state of Maharashtra in India.
2) The scope of research covers ‘Permanently Registered’ small scale agro-processing enterprises with ‘District Industries Centre (DIC)’, Ahmednagar.
3) The scope of the research covers only the manufacturing small scale enterprises.

c) Hypothesis:
In order to formulate hypothesis ‘Exploratory Research’ is conducted. An ‘Experience Survey’ was conducted of experts. One hypothesis formulated is given below.
1) The marketing performance of the Small Scale Agro-Processing Industry in the Ahmednagar District is satisfactory.

d) Data Collection:
1) Type of Data:
Both Primary & Secondary data are used in this research.
2) Sources of Data:
The data is collected from following sources.

- **Primary Data Source:** Primary data is collected from management of small-scale agro-processing enterprises.
- **Secondary Data Source:** Secondary data is collected from sources like - Government Agencies/Departments, Newspapers, Magazines, Research Journals, Internet etc.

3) **Data Collection Method:**
Survey method is used to collect primary data. The personal interviews of management of the enterprises are conducted and schedule (Similar to questionnaire) is used to gather information.

4) **Data Collection Instrument:**
An Interview Schedule (similar to questionnaire) is used as a research instrument to collect the primary data.

5) **Sampling Design:**
Sampling design is prepared so as to draw a representative sample from the population and reach reliable conclusions.

i) **Population/Universe:** The population/universe is defined as: ‘Manufacturing Small Scale Agro-Processing Enterprises in Ahmednagar district permanently registered. The population is ‘finite population’ and the population size is 702.

ii) **Sample Size:** The statistical method used to determine sample size. The sample size is 225 enterprises and it is estimated on the basis of precision rate of $\pm 5\%$ and 95% confidence level.

iii) **Sampling Method:** A ‘Proportionate Stratified Random Sampling Method’ is used in order to draw a representative sample from population. The ‘Cross-Stratification’ of the population is done on two parameters – product category and tehsil. The sample size for each stratum is kept directly proportional to the size of the respective stratum in the population. Finally the samples are chosen from each stratum on random selection basis.

6) **Tools for Data Analysis:**
The tools used for data analysis are given below.

i) **Analysis of Marketing Performance:** The marketing performance is assessed on the basis of ‘Sales’ of the enterprise. The ‘Sales Growth Rate’ is used as an indicator of the marketing performance of an enterprise. The marketing performance is analysed product category wise, sector wise, tehsil wise, area wise, scale of operation wise, form of organization wise, ownership wise and for industry as a whole. Further statistical tools like mean, standard deviation, simple correlation are used to analyze the nature of the sales of the industry.

ii) **Analysis of Problems Faced by the Enterprises:** The marketing problems faced by the enterprises are grouped as starting problems, current problems.

iii) **Analysis of Level of Intensity of Problem:**
The level of intensity of various problems is measured using the 3-point continuum rating scale – high (3), medium (2) and low (1). Based on the responses obtained from entrepreneurs for each problem, weighted mean score is calculated. Finally, ‘Z’ score was worked out to assess degree of intensity of these problems and rank orders are given based on the ‘Z’ values. A problem is considered as high in terms of intensity with ‘Z’ score values of more than 1, medium in terms of intensity with ‘Z’ score values 1 to -1 and low in terms of intensity with ‘Z’ score values less than -1.

iv) **Hypothesis Testing:** The z- test for mean is used for hypothesis testing.

4.0. INFERENTIAL ANALYSIS FOR HYPOTHESIS TESTING:
The inferential analysis is carried out to test two hypotheses formulated related to the study. In order to test the hypotheses a parametric test namely - z-test is used.

i) **The marketing performance of the Small Scale Agro-Processing Industry in the Ahmednagar district is satisfactory.**
The marketing performance of the small scale agro-processing industry in the Ahmednagar district is analysed on the basis of the ‘Sales’. The mean annual sales growth rate of the small scale agro-
processing industry in the Ahmednagar district is considered as the indicator of the marketing performance of the industry. The mean annual sales growth rate of the small scale agro-processing industry (11.36) is compared with that of the overall small scale sector (12.08) in the Ahmednagar district in order to test the hypothesis.

\( a) \) **Null and Alternate Hypotheses:**
The null and alternate hypotheses are formulated as follows.

- **Null Hypothesis \( H_0 \):** The marketing performance of the small scale agro-processing industry in the Ahmednagar district is satisfactory.
  \[ H_0: \mu H_0 = 12.08 \]

- **Alternate Hypothesis \( H_a \):** The marketing performance of the small scale agro-processing industry in the Ahmednagar district is dissatisfactory.
  \[ H_a: \mu H_a < 12.08 \]

Where, \( \mu \) = Mean Annual sales of the Population (Small Scale Agro-Processing Industry)

\( b) \) **Selection of the Type of Test and Sampling Distribution:**
In order to test the hypothesis \( z \)-test for mean is used and the distribution of mean is normal probability distribution.

\( c) \) **Selection of Critical Value:**
Based on the 5% significance level and the one sided test (left tail) the critical value for the \( z \) is found out from the \( z \)-table and it is -1.645.

\[ z = -1.645 \text{ (Critical Value/Table Value)} \] \hspace{1cm} \text{---------------- (1)}

\( d) \) **Computation of Test Statistic:**
The test statistic (\( z \)) is computed on the basis of sample information using following formula.

\[ z = \frac{\bar{X} - \mu H_0}{\left( \sigma_p / \sqrt{n} \right) \times \left[ \sqrt{\left( N - n \right) / \left( N - 1 \right)} \right]} \] \hspace{1cm} \text{---------------- (2)}

Where,
- \( z \) = Test Statistic
- \( \bar{X} \) = Sample Mean = 11.36 (Sales Growth Rate based on sample data)
- \( \mu H_0 \) = Hypothesized Population Mean = 12.08
- \( \sigma_p \) = Standard Deviation in Population. Since the standard deviation of the population is not known, Standard Deviation in Sample (\( \sigma_s \)) is used as the best estimate of \( \sigma_p \) because the sample size is large (more than 30)
- \( \sigma_s = \sigma_p = 12.15 \) (calculated from sample data)
- \( n \) = Size of Sample. Even though the size of sample is 225 the mean sales growth rate of the sample enterprises is based on the sales of the 152 working enterprises. Therefore, size of sample is considered as 152.
- \( N \) = Size of Population. Even though the size of the population is 702, the mean annual sales growth rate is calculated for only working enterprises. The working enterprises in the population are 474 (67.56% of 702).

After putting all these values in the equation (2),

\[ z = \frac{11.36 - 12.08}{\left( 12.15 / \sqrt{152} \right) \times \left[ \sqrt{\left( 474 - 152 \right) / \left( 474 - 1 \right)} \right]} \]

\[ z = -0.89 \text{ (Test Statistic)} \] \hspace{1cm} \text{---------------- (3)}

\( e) \) **Comparison of Test Statistic with Critical Value and Interpretation:**
The critical value/table value for \( z \) is -1.645 (equation 1). The calculated value of test statistic is \( z = -0.89 \) (equation 3).
As the alternate hypothesis is one sided (left tailed test) the rejection region for null hypothesis at 5% significance level is given below.

\[ R : z < -1.645 \]

The calculated value of the test statistic \((z=-0.89)\) is more than the critical value/table value \((z=-1.645)\). This means the calculated value of the test statistic lie in the acceptance region. Hence the null hypothesis \((H_0)\) is accepted.

\[ \text{Result of Hypothesis Test:} \]

The null hypothesis \((H_0)\) is accepted. That means the formulated hypothesis is accepted.

‘The marketing performance of the small scale agro-processing industry in the Ahmednagar district is satisfactory.

5.0. FINDINGS:
The findings of the research related to the problems and prospects of the small scale agro-processing industry in the Ahmednagar district are as follows.

i) Findings related to Marketing Performance of the Small Scale Agro-Processing Industry in Ahmednagar District:

• The average annual sales growth rate of the industry is 11.36% indicating the satisfactory marketing performance of the industry.

• The mean sale of the industry is high (Rs. 2.43 Crores).

• There is greater variability in the sales of the industry as the standard deviation is high.

• The average annual sales growth rate of the non food sector (28.69%) is higher than that of the food sector (9.82%) during the time period.

• The food sector dominates in the sales of the industry with a share of 87.39% whereas the share of the non food sector is 12.61%.

• The sales of the three product categories have grown at a high average annual growth rate namely ‘Textiles’ (87.13%), ‘Animal Feed’ (51.80%) and ‘Processing of Fruits and Vegetables’ (33.15%) whereas the sales of the ‘Confectionary’ category have shown negative growth rate (-4.87%) during the time period.

• The ‘Milk and Milk Products’ category in the industry dominates in the sales of the industry with the highest share (77.59%) followed by ‘Textiles’ (7.00%) whereas the share of ‘Essency Sticks’ (0.03%) is the lowest.

• The rural area enterprises dominate in the sales of the industry with a share of (82.54%) and the share of urban area enterprises is 17.46%.

• The small scale enterprises dominate in the sales of the industry with a share of (88.16%) and the share of micro scale enterprises is 11.84%.

• The share of the private limited enterprises in the sales of the industry is highest (53.45%) followed by partnership enterprises (25.66%), co-operative enterprises (15.24%) and proprietorship enterprises (5.65%).

• The enterprises owned by men dominate in the sales of the industry with a share of 99.41% and the share of women enterprises is just 0.59%.

• There is a strong positive correlation \((r = 0.79)\) between ‘Number of Sales Executives’ and ‘Sales’ of the enterprises.

ii) Findings related to Problems of the Small Scale Agro-Processing Industry in Ahmednagar District:
The problems of the small scale agro-processing industry in Ahmednagar district are divided into two categories viz. starting problems and current problems and are as follows.
a) **Starting Problems:**

The problems which are faced by an entrepreneur in the beginning/establishment of an enterprise are called as ‘Starting Problems’.

- It is found that a very high number of enterprises (89.78%) of the industry faced starting problems.
- The marketing starting problems faced by the enterprises are - Poor Product Quality, Poor Packaging, Defective Pricing, Poor Promotion, Poor Distribution, Wrong Sales Forecasting, Lack of Marketing Information, Lack of Marketing Knowledge and Intense Competition.
- It is found in case of the industry that two problems which are considered as the problems with ‘High Intensity’ are - ‘Poor Promotion’ and ‘Lack of Marketing Knowledge’. Four problems which are considered as the problems with ‘Medium Intensity’ are - ‘Poor Product Quality’, ‘Defective Pricing’, ‘Lack of Marketing Information’ and ‘Poor Distribution’. Three problems which are considered as the problems with ‘Low Intensity’ are - ‘Poor Packaging’, ‘Intense Competition’, ‘Wrong Sales Forecasting’.

b) **Current Problems:**

- The marketing problems currently faced by the enterprises are - problems of product, pricing, promotion, distribution, market coverage, marketing information, marketing planning and intense competition.
- Problems of Product include - lack of quality certification, lack of focus on product development, moderate level of branding, moderate level of packaging.
- Problems of Pricing include - problem of price fixation, problem of flexible price policy.
- Problems of Promotion include - low usage of promotional tools, low level of sales force, low usage of internet in promotion.
- Problems of Distribution include - problem of designing and managing of distribution channel, problem of warehousing, problem of inventory management, problem of transportation.
- Problems of Market Coverage include - restricted market coverage, lack of focus on exports.

6.0. CONCLUSION:

The agro-processing industry refers to the subset of manufacturing that processes raw materials and intermediate products derived from the agricultural sector. Agro-processing industry has a symbiotic links with agriculture, rural and economic development. The small scale agro-processing industry in Ahmednagar district of Maharashtra state of India has 702 enterprises and dominates in the small scale sector in the Ahmednagar district with the largest share. Ahmednagar district offers favourable factor conditions for the growth of the industry.

The marketing performance of the industry is satisfactory. The mean sales of the industry is high but there exist greater variability in the sales of the industry. The food sector dominates in the sales of the industry. The industry faces starting problems and is currently suffering from some marketing problems. The marketing current problems are related to - Product, Pricing, Promotion, Distribution, Market Coverage, Marketing Information, Marketing Planning and Intense Competition.

7.0. REFERENCES:

a) **Articles:**


b) Books:


c) Websites:

13. www.msme.gov.in (Ministry of Micro, Small and Medium Enterprises, New Delhi, India)

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