ANALYSIS OF CONSTRAINTS FACED BY STARTUPS IN THE FOOD PROCESSING INDUSTRIES IN TAMILNADU

Abstract

Food processing is the transformation of agricultural products into food, or of one form of food into other forms. Food processing includes many forms of processing foods, from grinding grain to make raw flour to home cooking to complex industrial methods used to make convenience foods. The Indian Food and Beverage Industry is emerging as a high-profit sector. It accounts for about 3 % of India's GDP and around 2/3rd of the total retail market in India. In fact, the revenue in the food and beverage business segment is estimated to show a CAGR growth rate of 14.2 % from 2020-2024. A total of 30 key informants were selected from each start up food processing industry in three districts namely Trichy, Dindugal and Coimbatore and all the three districts, the Key Informants was asked collectively to list the constraints faced by the start-up food processing industry through participatory method. The RBQ value for the insufficient connection between production and processing is 84.67 and ranked first among the infrastructure constraint which implies that lack of infrastructure godowns for storage and linkages with the traders. The delay in sanction of loans was the major constraint with RBQ of 76.67 and ranked first among the policy constraint. The tedious channels for financial transactions with RBQ value of 59.33 and high rate of interest for loans with RBQ of 57.33. The lack of knowledge on Post-harvest technologies with RBQ value of 70.67, which shows that the lack of trainings on the handling of new improved post-harvest equipment’s for product diversification. The Policy would seek to create a conducive environment for the agripreneurs to set up Food Processing sectors through fiscal initiatives/interventions and will facilitate the establishment of low-cost pre-cooling and cold chain units in proximal to the agricultural farms. It also facilitates cold storage units and grading, packing, sorting facilities to reduce wastages, improve the quality and shelf life of products.

Keywords: *Financial, Food processing, Infrastructure, Startups, Supply chain,*

Introduction

Food processing is the transformation of agricultural products into food, or of one form of food into other forms. Food processing includes many forms of processing foods, from grinding grain to make raw flour to home cooking to complex industrial methods used to make convenience foods.The Indian Food and Beverage Industry is emerging as a high-profit sector. It accounts for about 3 % of India's GDP and around 2/3rd of the total retail market in India. In fact, the revenue in the food and beverage business segment is estimated to show a CAGR growth rate of 14.2 % from 2020-2024 (Sharma, J., Tyagi, M., Panchal, D., Bhardwaj, A., 2021).

During the last five years ending 2019-20, Food Processing Industries sector has been growing at an average annual growth rate of around 11.18%. As per the Annual Survey of Industries (ASI) 2018-19, food processing was ranked 1st in total persons engaged in the manufacturing sector. An increasing global population will have a greater demand for food in 2030. At the same time, greater differentiation will be required due to an aging population and individualization. Innovation is needed to meet this demand. Good behaviour in the form of sustainability is also an important aspect for food. All food manufacturing businesses are mandatorily required to obtain FSSAI registration from the Food Safety and Standards Authority of India. Hence, having FSSAI registration as a small food manufacturer is mandatory for all spices or curry powder manufacturers.

The scheme adopts the One District One Product (ODOP) approach to reap the benefit of scale in terms of procurement of inputs, availing common services and marketing of products. ODOP for the scheme will provide the framework for value chain development and alignment of support infrastructure. There may be more than one cluster of ODOP products in one district. There may be a cluster of ODOP products consisting of more than one adjacent district in a State.The States would identify the food product for a district, keeping in perspective the focus of the scheme on perishables. A baseline study would be carried out by the State Government. The ODOP product could be a perishable Agri produce, cereal-based product, or a food product widelyproduced in a district and their allied sectors. An illustrative list of such products includes mango, potato, litchi, tomato, tapioca, papad, pickle, millet-based products, fisheries, poultry, meat as well as animal feed among others. Besides, certain other traditional and innovative products including waste to wealth products could be supported under the Scheme. For example, honey, minor forest products in tribal areas, traditional Indian herbal edible items like turmeric,

amla, haldi, etc. Support for agricultural products would be for their processing along with efforts to reduce wastage, proper assaying, and storage and marketing.

India has made a strong name for itself in the global startup community. India ranks amongst the top five countries in the world in terms of number of startups founded (Aggarwal, S. and Srivastava, M.K.,2016). It is estimated that India houses around 4200 start-ups, creating more than 85,000 employment opportunities. Numerous Government initiatives and incentives apart from private investment ecosystems development are also playing a vital role in boosting the StartUp community in the sector (Sharma, J., Tyagi, M., Bhardwaj, A., 2022). For nurturing innovations in the country, the Startup India Action Plan was launched in January, 2016 by the Government of India under the flagship Invest India initiative of DIPP.

The Government through this initiative aims to empower Startups to grow through innovation and design and to accelerate spreading of the StartUp movement on a mass scale. Food processing as a sector is uniquely positioned at the intersection of agriculture, manufacturing and services and hence has the potential to develop into a sizeable growth engine for the Indian economy. What is remarkable is that a lot of the innovations that can possibly spark this growth, actually spring up more from the enterprising young and innovative StartUps rather than large corporates or organized players operating in the food value chain. This, therefore builds a strong case for suitably nurturing the StartUp innovations through a scalable enterprise model of the organized sector, by way of institutionalized collaborative mechanisms, which effectively have the potential to drastically transform the Indian food processing Economy and associated ecosystem.

Review of past studies:

Zia (2016) concluded in his study that the food processing sector is a key industry in India. India is the second largest producer of food products in the world. The growth in food processing industry will bring overall development within the economy. By India`s policy to “Make in India” gates of growth and development opens up for the food processing industry. In this paper various prospects leading to the development path of the food processing sector are been identified.Parwez (2013) entitled in his paper “Food supply chain management in Indian agriculture” that the problems faced by Indian agriculture for the food security in terms of inadequate infrastructure and highly insufficient supply chain in content of information technology. Due to lack of efficient infrastructure and food processing industry about 30-30 per

cent of all foods produced in India are wasted. This paper covers a number of important aspects of agriculture supply chain, transformation with the agriculture thanks to various supply chain interventions, the role of ICTs in supply chain management. The paper concludes that efficient supply chain plays vital role for development and contemporary issue for agriculture.

Murthy, T.M.S., and Yogesh, M.S. (2014) entitled in their article "An overview of Food Processing Industry in India – Challenges and Opportunities" indicated that India holds the second largest arable land in the world. With 20 Agro-Climatic regions, all 15 major climates within the world exist in India. The country also possesses 46 of the 60 soil type within the world. India is the largest producer of pulses, milk, tea, cashew and mangoes, buffalo meat and therefore the second largest producer of tea, wheat, sugarcane and rice. Demand growth for processed food has been rising with growth income, urbanization, a young population and rise when the number of nuclear families. Food processing industry is one among the most important industries in India, ranking fifth in terms of production growth, consumption and export.

Materials and methods

The study was undertaken in three purposively selected districts of Tamil Nadu viz. Trichy, Dindugal and Coimbatore. Considering the number of start-up food processing industries in the three districts, 10 food processing industries were selected from each district making the total sample size 30 food processing industries. A total of 30 key informants were selected from each start up food processing industry in three district of Trichy, Dindugal and Coimbatore and all the three districts, the key informants was asked collectively to list the constraints faced by the start-up food processing industry through participatory method. The most common constraints were jotted down. After that, a participatory discussion was held where all the 30 Industries in each district were present who again collectively listed the constraints in their respective district. A final list of the constraints was prepared by comparing the list prepared by the Key Informants as well as the respondents separately. Later on both the Key Informants and Respondents were asked to rank the constraints individually. These were compiled together and the Rank Based Quotient (RBQ) technique was used to quantify the data collected by the Preferential Ranking Technique. The following formula given by Sabarathnam (1988).

$$\text{R.B.Q} = \frac{\sum fi\ (n+1-i)\times 100}{N\times n}$$

Where in,

Fi = Number of respondents reporting a particular problem under i^{th} rank

N = Number of Respondents

i = Number of rank

n = Number of constraints identified

After calculating the RBQ values for Key Informants and Respondents separately the ranks of all the constraints were accessed. Finally, Spearman's Rank Correlation Co-efficient were calculated between the ranks of constraints assigned by KI and respondents in all three districts.

Statistical analysis

The 10 key informants in Trichy district were asked to rank all the five categories of constraints in order to assign 1st to 5th rank in each category i.e Infrastructural constraints, Policy constraints, financial constraints, technological constraints and marketing constraints, as per their perception. The ranks so assigned were plotted in a table against each constraint and the RBQ values were worked out. Similarly, all the 30 start-up food processing industries were also asked to rank the constraints and the RBQ values were calculated. Based on these RBQ values, ranks were finally assigned to each of the constraint separately calculated between the ranks of constraints assigned by the respondents to assess their association. The entire process was repeated in Dindugal and Coimbatore district. The mean RBQ values were calculated to assess the preferential ranking of each constraint as depicted in Trichy district. Similarly, the mean RBQ values were calculated for Dindugal and Coimbatore districts.

Findings and Discussion

The constraints faced by startups in the food processing industries were assessed by five types viz., Infrastructure, Policy, Financial, Technology and marketing. The results of RBQ value and ranks are given in the table 1.

Table 1: Constraints - RBQ Value, Ranking

I	**Infrastructure Constraints**	**RBQ Value**	**Rank**
1	**Insufficient connection between production and processing**	**84.67**	**I**
2	Lack of warehouse, cold storage for handling large	75.33	II

	quantities		
3	Non-availability of lands at an affordable cost	70.00	III
4	Institutional gaps in the supply chain	60.00	IV
5	Inadequate road connectivity	52.67	V
II	**Policy Constraints**		
1	**Delay in sanction of loans**	**76.67**	**I**
2	Delay in getting subsidies	72.67	II
3	Complexity in licensing process	72.00	III
4	Tedious regulations in operational procedures	70.67	IV
5	Red tapism in availing approvals	69.33	V
III	**Financial Constraints**		
1	**Lack of capital for the start-up initiative**	**76.67**	**I**
2	High cost involved in development of basic infrastructure	67.33	II
3	Tedious channels for financial transactions	59.33	III
4	High rate of interest for loans	57.33	IV
5	Poor return of investment witnessed in existing ventures	55.33	V
IV	**Technology Constraints**		
1	**Delay in absorption of new technologies**	**78.67**	**I**
2	Lack of focus on quality and safety standards	74.67	II
3	Lack of knowledge on Post-harvest technologies	70.67	III
4	Lack of single product cold storage	65.33	IV
5	Absence of cold chain systems	63.33	V
V	**Marketing Constraints**		
1	**Challenges in identifying the specific market for the produce**	**77.33**	**I**

2	Delay in payment from distributors	75.33	II
3	Fragmented logistics	71.33	III
4	Lack of media space for branding	70.67	IV
5	Challenges in gaining the trust of traders	69.33	V

I. Infrastructure Constraints:

The RBQ value for the insufficient connection between production and processing is 84.67 and ranked first among the infrastructure constraint which implies that lack of infrastructure godowns for storage and linkages with the traders, followed by lack of warehouse, cold storage for handling large quantities with RBQ value of 75.33 and ranked second, non-availability of lands at an affordable cost is 70.00 and ranked third.

The institutional gaps in the supply chain was fourth constraint with RBQ of 60.00, which shows that the lack of infrastructure for the institutional building for dissemination of timely market information to the new startups and lack of infrastructure which hindrance the market intelligence for the new startups. The inadequate road connectivity was ranked last among the infrastructure constraint with RBQ of 52.67.

II. Policy Constraints:

The policy constraint was measured with five statements, The delay in sanction of loans was the major constraint with RBQ of 76.67 and ranked first among the policy constraint. The delay in sanction of loan makes the new startups to innovate the new products in the market, which bags their product diversification in the market. The delay in getting subsidies was second among the policy constraint with RBQ value of 72.67. The complexity in licensing process with RBQ value of 72.00 followed by tedious regulations in operational procedures with RBQ of 70.67 and red tapism in availing approvals was ranked last among the policy constraint with RBQ of 69.33.

III. Financial constraints:

Among the financial constraints, lack of capital for the startup initiative was ranked first among the financial constraint with RBQ of 76.67, followed by poor return of investment witnessed in existing ventures with RBQ of 55.33 and high cost involved in development of basic infrastructure was ranked third among the financial constraint with RBQ of 67.33.

The tedious channels for financial transactions with RBQ value of 59.33 and high rate of interest for loans with RBQ of 57.33.

IV. Technology constraints:

Delay in absorption of new technologies was ranked first among technology constraintwith RBQ value of 78.67 followed by lack of focus on quality and safety standards with RBQ value of 74.67. The absorption of new technologies for the startups results them to lack of focus on the new safety and quality standards. The lack of knowledge on Post-harvest technologies with RBQ value of 70.67, which shows that the lack of trainings on the handling of new improved post-harvest equipment's for product diversification.The lack of single product cold storage with RBQ of 65.33, followed by absence of cold chain systems with RBQ value of 63.33.

V. Marketing constraints:

In the marketing constraint, the challenges in identifying the specific market for the produce was ranked first among the marketing constraint with RBQ value of 77.33, followed by delay in payment from distributors with RBQ value of 75.33 and fragmented logistics ranked third among the marketing constraints with RBQ value of 71.33. The lack of media space for branding was fourth constraint among marketing with RBQ value of 70.67, challenges in gaining the trust of traders with RBQ value of 69.33.

Conclusion:

The key challenges faced by the food processing sector are gaps in supply chain infrastructure, which means that inadequate primary processing facilities, storage and distribution facilities and the insufficient connection between production and processing. Seasonality of operations and low capacity utilization's, institutional gaps in the supply chain are the major constraints. The RBQ value for the insufficient connection between production and processing is 84.67 which implies that lack of infrastructure godowns for storage and linkages with the traders, followed by lack of warehouse, cold storage for handling large quantities with RBQ value of 75.33. The delay in getting subsidies was second among the policy constraint with RBQ value of 72.67, lack of capital for the start-up initiative was ranked first among the financial constraint with RBQ of 76.67 and the challenges in identifying the specific market for the produce was ranked first among the marketing constraint with RBQ value of 77.33. These are the major constraints among the respondents. The deployment of green business practices – right

from the production to the packaging and supply chain management is a crucial solution to tackling the current issues in the food industry. The Policy would seek to create a conducive environment for the agripreneurs to set up Food Processing sectors through fiscal initiatives/interventions, such as rationalization of tax structure on fresh foods as well as processed foods and machinery that are used for the production of processed foods. And also to encourage the setting up of agro-processing facilities proximal to the areas of agricultural production, so as to avoid wastage and to minimize the transportation cost.The Policy will facilitate the establishment of low-cost pre-cooling and cold chain units in proximal to the agricultural farms. It also facilitates cold storage units and grading, packing, sorting facilities to reduce wastages, improve the quality and shelf life of products.

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